



Health and Safety
Executive

Second Post Implementation Review of the Control of Asbestos Regulations 2012

S.I. 2012/632

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Contents

Second Post Implementation Review of the Control of Asbestos Regulations 2012 (CAR 2012) S.I 2012/632

Annex A – PIR Summary

Annex B – Post Implementation Review

1. Introduction
2. What were the policy objectives of the measure?
3. What evidence has informed the PIR
4. Assessment of risks or uncertainties in evidence base / Other issues to note
5. To what extent have the policy objectives been achieved?
6. What were the original assumptions?
7. Were there any unintended consequences?
8. Has the evidence identified any opportunities for reducing the burden on business?
9. Work & pensions committee (WPC): Health and Safety Executive's approach to asbestos management.
10. How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of retained EU law, or how other countries have implemented international agreements?
11. What are the recommendations of the PIR?
12. Future Considerations.

Appendix 1: Evidence Summary Report (Social Research Findings)

1. Summary
2. Introduction
3. Methods
4. Findings

Section 1; Objectives of CAR 2012

Section 2; Costs of CAR 2012

2.1 licensable work

2.2 notifiable non-licensed work (NNLW)

2.3 non-notifiable work

2.4 duty to manage

Section 3; Other costs, benefits, negatives, and unintended consequences

Section 4; Recommendations from the previous PIR in 2017

Appendix 2: Cost Benefit Analysis Report (Economist Findings)

Introduction

- a) Scope
- b) Approach and existing sources of evidence
- c) Methodological options
- d) PIR challenges and approach taken as a result
- e) 2022 PIR modelling improvements
- f) Results of 2022 PIR
- g) Benefits
- h) Qualitative benefits and costs
- i) Conclusions

Annex A

Second Post Implementation Review (PIR) of The Control of Asbestos Regulations 2012 (CAR 2012)

Title: Second Post Implementation Review of The Control of Asbestos Regulations 2012	Post Implementation Review
PIR No: HSE-PIR2022-001	Date: 19/12/2022
RPC No: RPC-HSE-5222(1)	Type of regulation: Domestic
Lead department or agency: Health & Safety Executive (HSE)	Type of review: Statutory
Other departments or agencies: Department for Work & Pensions (DWP)	Date measure came into force: 06/04/2012
Contact for enquiries: alastair.mitchell@hse.gov.uk	Recommendation: Keep
	RPC Opinion: Green

1. What were the policy objectives of the measure? (Maximum 5 lines)

To fully transpose the main elements of EU Directive 2009/148/EC. To revoke the Control of Asbestos Regulations 2006 in their entirety and issue revised regulations to avoid the need to add an amending Statutory Instrument. To ameliorate the financial impact of the required legislative change on business by providing guidance on the application of the new requirements.

2. What evidence has informed the PIR? (Maximum 5 lines)

Data from the first CAR 2012 PIR published in 2017; responses to an online stakeholder survey carried out from 23rd May to 11th June 2021; Cost Benefit Analysis (CBA), including data from epidemiological research; Work and Pensions Committee inquiry report looking at The Health and Safety Executive's approach to asbestos management (published 21st April 2022).

3. To what extent have the policy objectives been achieved? (Maximum 5 lines)

CAR 2012 fully transposed the EU Directive, and the regulatory framework remains valid. Intervention by regulation is the most effective way to control risks of exposure to asbestos. Consensus amongst dutyholders was that regulation is necessary and CAR 2012 was effective in keeping people safe. The CBA concludes CAR 2012 has a net present value to society of £16.3 billion and the case for maintaining these regulations remains strong.

Sign-off for Post Implementation Review: Chief economist/Head of Analysis and Minister
I have read the PIR and I am satisfied that it represents a fair and proportionate assessment of the impact of the measure.

Signed:  Edward Woolley

Date: 30/06/2022

Further information

4. What were the original assumptions? (Maximum 5 lines)

The Impact Assessment (IA) produced for CAR 2012 focussed solely on the change which defined 'notifiable non-licensed work' (NNLW) and did not cost any of the other duties where there was no change. The duties in CAR 2012 have evolved over decades and have been extended or tightened at different points. Most of the regulatory changes were accompanied by IAs, but there is no definitive IA that captures all of the costs together for CAR 2012.

5. Were there any unintended consequences? (Maximum 5 lines)

Only 650 of 1850 survey participants responded to this question and, of these, 345 indicated that they were not aware of any unintended consequences. Of those who were, the responses were both positive and negative. The negative consequences were not deemed to be significant. These comments may be interpreted as feedback on the effectiveness or impact of the regulations rather than unintended consequences.

6. Has the evidence identified any opportunities for reducing the burden on business? (Maximum 5 lines)

CAR 2012 introduced NNLW to comply with the EU Directive 2009/148/EC. The CBA did not identify this as a significant cost burden, however there was evidence that the requirements could be clearer. Both the PIR and the WPC inquiry evidence suggest the need for providing greater clarity around work categories within the regulations and HSE will now consider how this could be developed further with stakeholders.

7. How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of retained EU law, or how other countries have implemented international agreements? (Maximum 5 lines)

The UK's approach is comparable to EU countries which implemented the same directive. The domestic legislative framework in EU countries together with local circumstances has determined any variations e.g., air sampling in France and UK's early introduction of licensing. The EU Withdrawal Act 2018 repealed requirements for statutory reviews to consider how an EU obligation has been implemented across member states.

Annex B

Further information sheet

Title: Second Post Implementation Review of The Control of Asbestos Regulations 2012 PIR No: HSE-PIR2022-001 RPC No: RPC-HSE-5222(1) Lead department or agency: Health & Safety Executive (HSE) Other departments or agencies: Department for Work & Pensions (DWP) Contact for enquiries: alastair.mitchell@hse.gov.uk	Post Implementation Review
	Date: 19/12/2022
	Type of regulation: Domestic
	Type of review: Statutory
	Date measure came into force: 06/04/2012
	Recommendation: Keep
	RPC Opinion: Green

Introduction

1. This report is the Health and Safety Executive's (HSE) second Post Implementation Review (PIR) of The Control of Asbestos Regulations 2012 (CAR 2012) (S.I. 2012 No. 632).
2. This PIR report was originally due to be published by 6th April 2022 to meet statutory requirements. HSE delayed completion, in order to consider the outcomes from the Work and Pensions Committee (WPC) inquiry into how HSE manages the continued presence of asbestos in buildings. HSE's Chief Executive and Chief Scientific Advisor gave oral evidence to the WPC in February 2022. The WPC asked how their work might contribute to the statutory review of the regulations, and what should be expected from the review. In response, HSE confirmed it would consider the WPC views and build that into the overall evidence base for the PIR. The PIR responses are broadly supportive of the regulations, and consequently, we are not proposing to make changes to them.
3. The purpose of the PIR is to assess:
 - the extent to which the Regulations have achieved their objectives,
 - whether the objectives remain appropriate and
 - if so, the extent to which they could be achieved with a system that imposes less regulation.
4. CAR 2012 came into force on 6 April 2012, updating and consolidating previous asbestos regulations. CAR 2012 revoked an earlier version of the Regulations (The Control of Asbestos Regulations 2006). CAR 2012 were made under The Health and Safety at Work etc Act 1974¹, fully transposed Article 3 of Directive 2009/148/EC and introduced a new category of 'notifiable' work with asbestos.
5. Article 3 of EU Directive 2009/148/EC was transposed in GB through CAR 2012 to set out a regulatory framework to protect workers and others by preventing exposure

¹ Health and Safety at work Act <https://www.legislation.gov.uk/ukpga/1974/37/contents>

to asbestos from work activity or reducing exposure as far as is reasonably practicable. The Directive also introduced new administrative requirements for certain types of non-licensable work with asbestos (described below in paragraph 14).

6. Further, in 2012-13 as part of HSE's response to Professor Lofstedt's recommendation on the simplification of Approved Codes of Practice (ACOPs), the two asbestos ACOPs - L127 (The management of asbestos in non-domestic premises) and L143 (Work with materials containing asbestos) - were consolidated into a single revised ACOP (L143 second edition)². The revised ACOP provided further guidance to underpin the changes introduced by CAR 2012.
7. HSE published its first statutory PIR of CAR 2012 in March 2017. This is available to view using the link:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/598574/post-implementation-review-of-the-control-of-asbestos-regulations-2012.pdf
8. The first PIR of CAR 2012 was an extensive review of the Regulations. This second PIR builds on the work of the first and takes a proportionate approach to research. This avoids repetition, focussing on what has changed since the last PIR and what new developments have occurred in the industry. The methodology for this review is described in Appendix 1.
9. Based on the collective stakeholder evidence, cost/benefit analysis, epidemiological and enforcement data, the first PIR concluded it was not necessary to amend or repeal the Regulations. There were, however, four recommendations made:
 - Recommendation (i) *Greater clarity in guidance around the distinction between licensable, non-licensable and notifiable work with asbestos*. This was addressed through a new edition of HSE's guidance publication HSG 210 'Asbestos Essentials: a practical task manual'.
 - Recommendation (ii) *Information on dutyholder roles and responsibilities around duty to manage asbestos in non-domestic premises*. This was addressed by making changes to the online *Managing My Asbestos* interactive web tool, and parts of the *Duty to manage asbestos* web pages. Essentially these changes amounted to simplification of navigation, and signposting.
 - Recommendation (iii) *Guidance on written plans of work*. Further detailed guidance clarifying what should be included in a plan of work was produced by HSE.
 - Recommendation (iv) *Alignment of the frequencies for medical examinations for licensable and notifiable work as part of simplification*. The requirement in CAR 2012 for licensable work medicals goes beyond the requirements specified by the EU Directive. Alignment would have involved changing the frequency of medical examinations for those undertaking licensed asbestos work, from every two years to every three years. The decision was taken not to proceed with the proposed amendment to the Regulations after strong representations by Trade Unions at the consultation stage.

² ACOP <https://www.hse.gov.uk/pubns/priced/l143.pdf>

What were the policy objectives of the measure?

10. EU Directive 2009/148/EC codified and replaced two Directives concerning the protection of workers from the risks related to exposure to asbestos at work, namely 83/477/EEC (the 'Asbestos Worker Protection Directive' - AWPD) and Directive 2003/18/EC (amending 83/477/EEC). The primary aim of the amending Directive was to update the necessary protective measures to increase protection for those workers who were considered most at risk from exposure to asbestos fibres such as building maintenance workers.
11. CAR 2012 revoked and re-enacted the Control of Asbestos Regulations 2006 (CAR 2006). CAR 2012 fully transposed Article 3 of Directive 2009/148/EC and introduced a new category of 'notifiable' work with asbestos.
12. CAR 2012 continued to set out a framework for preventing exposure to asbestos from work activities or reducing exposure as far as is reasonably practicable. The core requirements include:
 - assessing the risk from asbestos,
 - putting in place measures to prevent exposure and prevent the spread of asbestos,
 - providing appropriate work equipment and,
 - providing information, instruction, and training to workers.
13. To ameliorate the financial impact of the required legislative change on business, the Regulations were supported by guidance including an Approved Code of Practice (ACOP) which sets out in detail what dutyholders are expected to do in order to comply with the legal requirements.
14. Work with asbestos is classified into three broad categories depending on the foreseeable level of exposure to asbestos created by the work activity being undertaken. These categories are:
 - **Licensed work.** Refers to higher risk work where the concentrations of asbestos fibres in the air during the work activity are likely to exceed specified limits in the Regulations or involve specific asbestos-containing materials (ACMs). This includes most large-scale asbestos removal and building refurbishment/demolition work. This work can only be undertaken by licensed contractors who fulfil the stringent criteria set out by HSE. The work must be notified at least 14 days prior to its commencement. Air monitoring, medical surveillance and health records for workers are also required.
 - **Notifiable non-licensed work (NNLW).** Refers to work which is not licensed work and does not fall into one of the following categories:
 - short, non-continuous maintenance activities in which only non-friable materials are handled;
 - removal without deterioration of non-degraded materials in which the asbestos fibres are firmly linked in a matrix;
 - encapsulation or sealing of ACMs in good condition;

- air monitoring and control and collecting and analysing samples to establish whether a specific material contains asbestos.

The work must be notified prior to its commencement. Medical surveillance, health records and designated areas for work with asbestos are required.

- **Non-licensed work.** Refers to work where the concentrations of asbestos fibres in the air during the work activity undertaken are likely to be low and covers such activity as short, non- continuous maintenance tasks and small-scale asbestos work. This includes work done by workers such as plumbers, electricians, etc. who may disturb asbestos as a consequence of carrying out their jobs. There is no requirement for notification, medical surveillance or health records, and the work does not need to be carried out by a licensed contractor.

For the first PIR, the Health and Safety Laboratory (HSL) conducted a dutyholder analysis. The report they produced referred to non-licensed work as *non-notifiable work*. This approach was adopted during work with focus groups used to gather evidence about the effectiveness of the regulations. For consistency with the 2017 PIR, the term *non-notifiable work* has been used in appendix 1 and appendix 2 of this report to describe 'non-licensed' work.

15. CAR 2012 continues to place a duty to manage asbestos on owners / managers of non-domestic premises (including public, commercial and industrial buildings and the common parts of multi-occupancy domestic buildings). This involves:
 - identifying, risk assessing and recording the location and condition of asbestos in buildings they own or manage
 - putting in place a plan to manage the risks from asbestos in the building
 - passing on information to contractors or workers who may disturb asbestos while they are working on the building so they can put in place appropriate control measures and avoid unintended disturbance.

Duty to manage is described more fully in HSE's Approved Code of Practice *Managing and working with asbestos* (L143). This includes guidance that helps establish who is the dutyholder.

What evidence has informed the PIR?

16. We have assessed the extent to which the Regulations met their policy objectives of protecting workers and others by preventing exposure to asbestos from work activity or reducing exposure as far as is reasonably practicable. Our approach to evidence gathering consisted of a widely publicised self-selecting survey designed by HSE social researchers and economists. In total 1850 responses were received. The survey results were supplemented by relevant information available from the 2017 PIR.
17. The survey ran between 21st May 2021 and 11th June 2021 and sought the views of stakeholders regarding the following key areas:

- objectives of CAR 2012
 - costs of CAR 2012, inclusive of other costs; benefits; negatives and unintended consequences.
 - recommendations from the previous PIR in 2017
 - job role of the person completing the survey and details of their employer
18. As this is the second PIR for these Regulations, the proposed approach was discussed with the secretariat of the Regulatory Policy Committee (RPC). It was proposed to take a proportionate approach focussing on what had changed since the first PIR and what was novel/new, building on the work done in the first PIR and avoiding repetition/duplication.
19. The research proposals were presented to the secretariat of the Regulatory Policy Committee (RPC) and HSE's Evaluation Working Group (EWG)³. Both agreed that the survey approach would be appropriate for a second PIR, providing that the survey was designed to cover changes that had taken place in the intervening period between the first and second PIRs.
20. We used a variety of communication channels to reach the dutyholders and promote the survey:
- Selected HSE e-bulletins (e.g. for construction, asbestos, and risk management e-bulletin subscribers).
 - HSE's social media channels such as Twitter and LinkedIn.
 - Direct emails sent to stakeholder organisations undertaking notifiable non-licensed work.
21. The number of cost areas captured as part of the second CAR 2012 PIR were reduced using the following prioritisation criteria:
- a) Only 'on-going' costs, no 'sunk' costs (expenditure or payments already incurred); and/or
 - b) Areas where there was limited evidence from the previous PIR in 2017 (e.g. 'non-notifiable work' and 'duty to manage'); and/or
 - c) Areas with an impact over £12million.
22. Criterion b) was chosen in order to capture more data from groups which had previously not responded and/or had not provided a huge amount of information (in the 2017 PIR). This sample frame was intended to focus on reaching and engaging with 'hard to reach' groups e.g. those who carry out lower risk (non-notifiable) work and duty to manage stakeholder groups.
23. Criterion c) was chosen to capture the largest costs identified from the previous PIR in a proportionate way (the £12 million figure simply allowed a proportionate number of costs categories to be included in the survey). The £12 million cost cut off was selected to ensure large total annual costs were explored.

³ Evaluation Working Group (EWG) provides assurance to HSE's Science and Evidence Research Advisory Group that progress is being made on appropriate evaluation of major interventions and surveys, planned science, evidence and research that has been delivered and the extent to which regulations have achieved their intended effects (post implementation reviews).

24. All costs have been updated within the 2022 PIR however we have varied the method of updating costs proportionate to their impacts on the total annual cost. Fresh survey evidence, filtered through the above criteria, enhance estimates for 90% of the total annual costs found within the 2017 PIR. The other 10% of total annual costs were refreshed using a GDP deflator⁴. All regulations had publicly available data updated to 2016 (the initial year of analysis) from the estimates in the 2017 PIR produced from available data at that time.
25. The findings from the survey contributed to and informed a broader evaluation of the impact of the Regulations, which draws on epidemiological analysis as well as a cost/benefit analysis associated with implementing the Regulations. Those that took part in the survey were also invited to provide information on the costs associated with the implementation of the regulations. The results of the economic evaluation are included in Appendix 2 to this report. The recommendations from the SC inquiry report have also been considered.

Assessment of risks or uncertainties in evidence base / Other issues to note

26. As this is the second PIR for CAR 2012, we adopted a proportionate approach to the development of the evidence base, as described above. The 2017 PIR used a combination of targeted workshops, focus groups and survey methods while the 2022 PIR used a self-selecting online survey designed to expand upon the findings of the earlier PIR.
27. The review team recognised that there are uncertainties associated with the adopted research approach of using an online survey. A low response rate, for example, could bring into question whether the data gathered is representative of the target audience. In this case, the survey achieved over 1800 responses. The response rate was far above expectations based on the number of responses to other PIRs carried out by HSE.
28. The survey responses were submitted by a broad range of dutyholders to help inform the PIR. In total 1850 responses were received. When asked to confirm which category of work with asbestos they mainly undertake, 1313 respondents confirmed the following:
 - 165 (12.6%) reported doing mainly licensable work;
 - 144 (11%) said they mostly do non-notifiable work;
 - 54 (4.1%) stated that they mostly do notifiable non-licensed work.
 - 328 (25%) reported doing 'other' types of asbestos-related work, most often as consultants, surveyors, contractors and trainers.

In addition, 622 respondents (47.4%) reported managing asbestos via 'Duty to Manage' requirements.

29. The survey asked respondents to confirm the size of the organisation they worked for. Of the 977 respondents (52.8%) who answered this question:

⁴ The GDP deflator can be viewed as a measure of general inflation in the domestic economy.

- 27.6% of respondents worked for an organisation employing 1000+.
 - 17.8% of respondents worked for an organisation employing between 250 and 999.
 - 10.8% of respondents worked for an organisation employing between 100 and 249.
 - 31.8% of respondents worked for an organisation employing 49 or fewer.
30. A potential weakness of using data from on online survey responses is that respondents are not able to clarify the questions. This may lead to misunderstandings and misinterpretations which produce large ranges of responses to those questions that focus on costs, as many of the survey questions did. This is explored more fully in Appendices 1 and 2.
31. There were also some uncertainties due to the lack of availability or robustness of the data used in the economic modelling, such as the number of buildings in GB containing asbestos and the number of dutyholders who have a 'duty to manage' under CAR 2012 Regulation 4. The approach used to address these aspects and similar uncertainties is detailed in full in Appendix 2.
32. The construction industry has faced many challenges, including reduced activity since the end of 2019/20, due to the global Coronavirus pandemic. For example, the impact on obtaining materials and equipment, the need to take mitigation measures against COVID on site, and the impact on worker availability. Although the data collection phase of this PIR took place between May 2021 and June 2021, we believe the coronavirus pandemic is unlikely to have impacted on response rates given that the survey received 1850 responses. The method used for data collection negated the need for face-to-face interaction, thus limiting potential impacts of Coronavirus restrictions.
33. The review team concluded that the research approach was sound, placed a proportionate burden on affected businesses and yielded good quality information, meeting the evidential needs of the review.

To what extent have the policy objectives been achieved?

34. CAR 2012 fully implemented the requirements of the EU Directive and continues to set out a framework for preventing exposure to asbestos from work activities or reducing exposure as far as is reasonably practicable. The online survey confirms the Regulations have achieved this and that the objectives remain valid. Intervention by regulation remains the most effective way to control risks of exposure to asbestos. There was consensus amongst dutyholders that regulation was necessary, and CAR 2012 was effective in keeping workers and others safe. The CBA concludes the Regulations have a net present value to society of £16.3 billion and the case for maintaining them remains strong (see Appendix 2). The assessment demonstrates the benefits of CAR 2012 outweigh the costs and will continue to do so for the foreseeable future, so long as exposures continue to be effectively controlled.
35. Survey respondents were asked to indicate the extent to which they agreed or disagreed with the statement "CAR 2012 sets out a framework for preventing exposure to asbestos from work activity or reducing exposure as far as is reasonably practicable". Of the 1842 responses to this question, 36.6% expressed strong

agreement and 53.7% showed agreement. The combined total confirmed 90.3% of respondents agreed with the statement.

36. The majority (71.1%) of respondents believed that the CAR 2012 regulations are effective in protecting workers from the risks of asbestos and its objectives could not be achieved with a system that involved less regulation. As outlined in Appendix 1, 65.8% of participants agreed that the guidance which HSE provided on the application of the new CAR 2012 requirements mitigated the impact of the legislative change on businesses.
37. Asbestos-containing materials (ACM's) remain in place in many buildings and so the potential impact on workers, if they were exposed to it, would be significant. The gravity of the potential consequences of frequent inhalation of asbestos fibres requires that exposures are prevented or minimised for every work activity. The regulatory framework is designed to reduce the risk of asbestos-related disease. One of the most reliable indicators of the risk over time is analysis of the data from deaths attributed to mesothelioma which is closely linked to asbestos exposure.
38. Analysis carried out by HSE epidemiologists using the Mesothelioma Projections Model, which is based on our National Statistics on mesothelioma, estimates the impact of changes in exposure to asbestos on deaths from mesothelioma and lung cancer. The model suggests that the fall in exposures to asbestos between 1980 (which is approximately when measures to control exposures started to be introduced) and 2015 will lead to 25,700 fewer deaths from mesothelioma and lung cancer in the 100 years between 2001 and 2100. This analysis is described in more detail in the 2017 PIR.
39. In 2016 HSE published *Costs to Britain of Work-Related Cancer*⁵, which includes estimated costs to business and government/taxpayers, as well as costs to the individuals affected, both in terms of financial costs and the impact of quality of life and loss of life. Applying those estimates to the yearly profile of prevented cancer deaths between 2001 and 2100, the present value of the benefits to society of preventing those cases of cancer was estimated at £20.9 bn. We are not able to claim that all of these deaths prevented can be attributed to the regulations, but the evidence suggests that the measures required by the regulations have been very influential in controlling exposures.
40. The 2017 PIR concluded the Regulations were working well, and the objectives had largely been met. Although there were no proposals for changes to the Regulations, there were four recommendations in the 2017 PIR that required action. The 2021 survey asked respondents to consider the action taken in response to three of these recommendations for revised guidance about asbestos. Survey responses to these questions were overwhelmingly positive:
 - Recommendation (i) *Greater clarity in guidance around the distinction between licensable, non-licensable and notifiable work with asbestos*. To address this recommendation a new edition of HSE's guidance *Asbestos Essentials* was produced. The PIR survey found that 74.8% of respondents were aware of the new guidance and 61.6% had used it. Of the users, 50.2% reported finding it

⁵ Costs to Britain of Work-Related Cancer <https://www.hse.gov.uk/research/rrpdf/tr1074.pdf>

either very helpful or extremely helpful. Only 2% of respondents submitted negative responses.

- Recommendation (ii) *Information on dutyholders roles and responsibilities around duty to manage asbestos in non-domestic premises*. To address this recommendation, the asbestos pages on HSE's website were redesigned (including the 'duty to manage' section) together with amendments to the duty to manage flowcharts featured in the *No time to lose* campaign from the Institute of Occupational Safety and Health (IOSH). A significant majority of respondents (71.7%) were aware of one or both of these; 64.3% stated that they had used the revised 'duty to manage' section of HSE's asbestos webpages and 66.2% claimed that they had found it either very helpful or extremely helpful. Only 2.2% gave entirely negative responses.
- Recommendation (iii) *Guidance on written plans of work*. This was actioned by HSE with 68.6% of survey respondents claiming to be aware of the revised guidance and 25.6% claiming they were not aware of it. Of those who were aware of the revised guidance, 53.9% indicated they had used it. Of those who had used the guidance, 69.4% submitted positive answers, with respondents indicating they had found the revised 'plans of work' guidance extremely helpful or very helpful. For those respondents claiming to be aware of the revised guidance, 43.3% said they had not used it.
- Recommendation (iv) *Alignment of the frequencies for medical examinations for licensable and notifiable work as part of simplification*. This recommendation was not adopted for the reasons given in paragraph 10. The survey did not ask respondents to comment on this aspect.

41. In summary, the 2021 survey responses, obtained from a broad range of dutyholders, indicate that CAR 2012 continues to meet its objectives. CAR 2012 strengthens the protection given to those who might be exposed to asbestos fibres, setting clear health and safety requirements to ensure the appropriate control measures are in place to prevent exposure to asbestos from work activity or to reduce exposure as far as reasonably practicable. Although amendment of CAR 2012 is not proposed at this time, we will consider further the regulatory requirements around notifiable and non-notifiable work. Both the PIR and WPC inquiry evidence suggest that the requirements would benefit from more clarity in this area and HSE will now consider how this could be developed further with stakeholders. If any changes to the regulations are required in future, these would be subject to a full impact assessment and consultation.

What were the original assumptions?

42. The Better Regulation Framework Manual⁶ indicates that the PIR should assess the extent to which the effects anticipated in the original impact assessment (IA) actually occurred. This proved problematic in this instance, because the individual duties in

⁶ The Better Regulation Framework Manual https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916918/better-regulation-guidance.pdf

CAR 2012 have come about in a piecemeal process over decades, with duties extended or tightened at different points. Most of the regulatory changes were accompanied by IAs, but there is not a definitive IA in place that captures all of the costs together.

43. The 2017 PIR examined the different IAs available and explored whether it would be possible to reconstruct a set of stand-alone assumptions and estimates, but this proved unfeasible. This was partly due to the way the regulations had evolved, but the 2017 authors also had concerns that it would not be sensible to apply evidence from earlier IAs (particularly the oldest ones) to the current situation. Work with asbestos has developed significantly since controls were introduced in terms of technology and risk controls, as has understanding of the economic impact of asbestos related disease.
44. Given these issues, the approach taken in the 2017 PIR was to concentrate on what the likely costs and benefits were going forward and estimated the ongoing costs and benefits of complying with the requirements in the Regulations. We have taken a similar approach in the 2022 PIR.
45. As noted in 2017, there was a supporting IA for CAR 2012, but that IA examined a specific change in relation to Notifiable Non-Licensed Work (NNLW). Although the whole set of regulations was consolidated to include the change related to NNLW (rather than using amending legislation), the significant changes were quite specific and only about NNLW. Thus, the IA only captured the costs of this change and not the costs of the whole set of regulations. These costs were only of the additional requirements, starting from a position where those affected already had some duties. The 2017 PIR approach to the costs, built on in this 2022 PIR, involved looking at the regulations as a whole and does not allow a comparison to assess the accuracy of the costs of the changes in the 2012 IA alone. Considering the scale of the costs and benefits involved, it was decided in the 2017 PIR that there was limited usefulness in trying to isolate the impact of those much smaller changes and this has been accepted in the 2022 PIR.
46. The 2022 PIR has utilised previous appraisals and evaluations, the evidence available including administrative data (e.g. on the number of companies licensed to undertake high-risk work with asbestos and how many people they employ), published statistical data, as well as analysis performed by HSE epidemiologists using the HSE Mesothelioma Projections Model and HSE published research on the Costs to Britain of Work-Related Cancer,¹⁰ which allowed us to estimate benefits. This PIR has improved evidence of the experiences of those working with and managing asbestos collected from stakeholders via an on-line survey that received over 1,800 responses.
47. In summary, the individual duties in CAR 2012 have come about in a piecemeal process over time and contributed to an existing package of mutually re-enforcing measures regarding asbestos. The Impact Assessment (IA) produced for CAR 2012 focussed solely on the change to define separately 'notifiable non-licensed work' and did not cost any of the other duties under CAR 2012 where there was no change. As a result, there was never a definitive IA in place that captured all of the costs in one place.

Were there any unintended consequences?

48. The survey identified some unintended consequences, although these were not deemed to be significant. This supports a similar finding in the 2017 PIR.
49. The survey asked respondents if there had been any unintended consequences (positive or negative) due to CAR 2012. It provided an explanation of what is meant by unintended consequences (outcomes which were not intended, expected or foreseen when the change was made). Only 650 of 1850 survey participants responded to this question and, of these, 345 indicated that they were not aware of any unintended consequences. Of the 305 survey respondents who were aware of unintended consequences the responses were both positive and negative. Further comments below may be interpreted as feedback on the effectiveness or impact of the regulations rather than unintended consequences.

Positive comments

- 14 respondents stated “yes” there were benefits resulting from the introduction of CAR 2012 but gave no further details about their nature.
- 93 asserted CAR 2012 afforded workers and the public better protection from asbestos exposure.
- 70 reported more awareness training in the industry.
- 61 thought guidance was now clearer.

Comments included “increased awareness of other H&S issues”, “senior management eyes have been opened to responsibility” and asbestos awareness training has “helped improve the overall health & safety culture within the organisation”.

Negative comments

- 130 of respondents indicated there hadn’t been any benefits arising from CAR 2012.
- 14 thought the regulations had resulted in poorer asbestos management.
- 20 identified increased costs associated with staff training and asbestos removal.
- 18 identified the need for additional clarification of guidance and / or the Regulations.
- 18 highlighted increased illegal dumping due to increased disposal costs although it should be noted that disposal is not within scope of CAR 2012 as it falls within the remit of the Environment Agency.
- 41 thought that the regulations around NNLW were unclear.
- 35 thought the regulations and guidance were unclear but gave no specific details.

50. Some respondents felt that the standards in place have not changed sufficiently to see a benefit. This may be due to much of CAR 2012 not having changed since CAR 2006.
51. Increased spending on training and the indicated increase in awareness which may have been a consequence of it can be seen as positive benefits contributing to the objective of continuing to protect those working with or potentially exposed to asbestos from the associated risks. It is also important to consider that CAR 2012 did not introduce any new requirements for training in comparison to CAR 2006 which it replaced.
52. Any increases in illegal dumping of asbestos waste is unlikely to be attributable to CAR 2012. Changes to environmental legislation may be a driver. Safe asbestos waste disposal has long been a requirement of asbestos legislation and is included in both CAR 2006 and its predecessor, the Control of Asbestos at Work Regulations 2002. In any case, Department for Environment, Food & Rural Affairs (Defra) data indicates that the proportion of asbestos incidents was below 1 per cent of total incidents in 2015/16 and had not changed by 2020/21, although there were methodological changes which must be taken into account⁷. Defra statistics on fly tipping also show that the number of incidents in the three years from 2010 to 2013 were all higher than the latest three years from 2018 to 2021⁸. As far as the statistics reflect the true frequency of illegal dumping, it does not appear that incidents have increased since the introduction of CAR 2012.
53. The need for additional clarification of guidance and / or the Regulations was a recommendation carried forward from the 2017 PIR and will be addressed in the next section.
54. The survey asked respondents if there had been any negative outcomes from CAR 2012. 366 respondents who answered this question were satisfied there had not been any negatives arising from the Regulations.
55. A further 30 respondents felt that extra costs had resulted from the introduction of CAR 2012, although specific details were not cited.

Has the evidence identified any opportunities for reducing the burden on business?

56. The 2021 survey found that most respondents (nearly 86%) did not believe or were unsure if the aims and objectives of the Regulations could be achieved with a system that imposes less regulation. There were a wide range of suggestions from those that did with the most popular (22.4%) being the simplification of guidance and regulation. No consistent themes were identified.
57. The results of the actions taken (post 2017 PIR) targeted at reducing business burdens were addressed by the 2021 survey. Respondents were asked whether they agreed that the guidance provided by HSE on the application of CAR 2012 had moderated the impact of the required legislative changes on business. Nearly 66% agreed while less than 5% disagreed. Those that disagreed pointed to ambiguities or complexity in the guidance, or to a lack of compliance with it. In contrast, 8% of

⁷ Defra Fly-tipping statistics for England 2015/16

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595773/Flytipping_201516_statistical_release.pdf

⁸ Defra Fly-tipping statistics for England 2020/21 <https://www.gov.uk/government/statistics/fly-tipping-in-england/fly-tipping-statistics-for-england-2020-to-2021>

respondents to a question about the benefits of CAR 2012 pointed to clearer guidance. Elsewhere in the survey, another 5.4% of participants thought that the regulations around NNLW were unclear, while 4.6% of respondents thought the regulations and guidance were unclear but gave no specific details.

58. There is a desire for further clarification/simplification of guidance and regulation despite fairly high levels of respondents being aware of the new guidance produced following the 2017 PIR, with more having used it and found it helpful than not. NNLW was identified by a small group of respondents as one of these areas, but many more respondents were less specific with comments such as “more user friendly”, “less jargon” and “simplify” being typical suggestions. This echoes some of the evidence from the Work and Pensions Committee inquiry. However, given the small numbers involved and the nature of goal setting legislation, it must also be recognised that there will always be a proportion of dutyholders who would prefer a more prescriptive approach.
59. The NNLW work category was introduced following the European Commission issuing a reasoned opinion in 2011 relating to the omission of terms from Regulation 3 of CAR 2006 which exempted some low-risk work from certain duties in the regulations. In the Commission’s view the omission of these terms had the effect of widening the scope of work which would be exempt from the requirements to:
- Notify specified particulars, as described in the Directive, to the relevant enforcing authority before work starts;
 - carry out medical examinations before an employee starts work, and then at least every 3 years as long as work with asbestos continues; and
 - keep a register of work with asbestos for each employee.

Therefore, NNLW was introduced as a work category by CAR 2012 to comply with the European Directive.

60. At the time that changes were made to fully comply with the directive the UK’s position was that the required changes would add costs and not bring any tangible benefits. Therefore, one option for consideration might be to take the opportunity provided by the UK leaving the European Union to revert to the two work categories within CAR 2006, licensed and non-licensed. This would reduce the burdens on business by simplifying both the regulations and guidance, particularly since the UK’s position at the time was that CAR 2006 achieved the legal result required by the Directive, and this remains the case. Although the 2021 survey did not ask directly whether respondents were in favour of retaining the NNLW work category, there was a small but persistent proportion of respondents who would welcome further clarity around the regulations and guidance for NNLW, even after well received revised guidance was published.
61. With regard to the costs of NNLW specifically, the CBA has estimated the total costs of complying with each of the regulations specific to NNLW, namely regulation 9 (notification) and regulation 22 (health records and medical surveillance). The best estimate for regulation 9 was an annual cost of £2.3m while the best estimate for regulation 22 was £570k for maintaining health records and £275k for medical surveillance with an additional £145k in staff costs. The total annual cost for these requirements is therefore £3.29m, which includes licensed work. Given less than half of this total will be costs for NNLW alone (based on 37500 notifications for licensed

work, and 28400 for NNLW per annum), the best estimate of the costs of these requirements for NNLW alone is less than £1.65m. The best estimate of total costs for licensed and NNLW is £205m, so the cost of these additional requirements is low overall and would not save very much in monetary terms if revoked.

62. Nevertheless, both the PIR stakeholder survey and WPC inquiry evidence suggest that simplification of work categories set out within CAR 2012 should be explored further and the requirements around notifiable and NNLW would benefit from more clarity in this area. HSE will now consider how this could be developed further with stakeholders. Any change to the regulations would be subject to a full impact assessment and consultation.

Work & Pensions Committee: Health and Safety Executive's approach to asbestos management

63. This PIR is the evaluation tool that fulfils the statutory requirement to review the Regulations at least every 5 years, as required by Regulation 35 of CAR 2012. This PIR report was originally due to be published by 6th April 2022 to meet the statutory requirement. Evidence gathering to inform the PIR consisted of a widely publicised self-selecting survey designed by HSE social researchers and economists. The survey question sets and topics to be covered in this second PIR were created in the spring of 2021. The survey ran between 21st May 2021 and 11th June 2021 and sought the views of stakeholders as described in paragraph 17.
64. Subsequently, on 9th July 2021 the Work & pensions committee launched a call for evidence to inform their inquiry into how the HSE manages the continued presence of asbestos in buildings. The committee invited views on a range of questions related to asbestos⁹. This call for evidence came after the evidence gathering phase for the PIR had been concluded. The deadline for written submissions to the WPC was 17th September 2021 and the first oral evidence session took place on 17th November 2021. HSE submitted a written response to the WPC in line with the deadline and HSE's Chief Executive and Chief Scientific Officer gave oral evidence to the Committee on 2nd February 2022.
65. The committee's inquiry examined the current risks posed by asbestos in the workplace, the actions taken by HSE to mitigate them and how its approach compares to those taken in other countries. The committee's report was published on 21st April 2022 and contained a number of recommendations¹⁰. The report and HSE's response will be published on the WPC web page¹¹.
66. The timing of the work undertaken to gather evidence for the PIR and the WPC call for evidence were not aligned. Consequently, there were several issues raised by the committee which were not captured by the PIR work and, given the nature of the method used to collect the data (a widely publicised self-selecting survey), it was not possible to go back to respondents to seek their views on other matters raised by the WPC. However, the WPC report and the PIR do intersect on a number of topic areas,

⁹ <https://committees.parliament.uk/committee/164/work-and-pensions-committee/news/156457/health-safety-executive-approach-to-asbestos-management-examined/>

¹⁰ <https://committees.parliament.uk/publications/21884/documents/162937/default/>

¹¹ <https://committees.parliament.uk/work/1393/health-and-safety-executives-approach-to-asbestos-management/publications/>

so it has been possible to reflect on the WPC recommendations in this report. The recommendations are shown in italic text below.

HSE and Government use the conclusions and recommendations from our report to inform both its immediate post implementation review of the asbestos regulations and its longer-term approach to asbestos management.

67. HSE undertook to consider the WPC report and has responded to the recommendations. We have also considered the inquiry report and recommendations as part of the work undertaken to inform the PIR. The purpose of this PIR is to consider the existing regulatory framework for asbestos and the objectives are described in paragraph 3 of this report. The rules governing how PIRs are completed are set out in the Treasury's Magenta Book supplementary guidance for conducting regulatory PIRs¹². The guidance states that the PIR '...seeks to establish whether, and to what extent, the measure:

- has achieved its original objectives as set out in the original Regulatory Impact Assessment (RIA),
- has resulted in any unintended effects,
- has objectives which are still valid,
- is still required and remains the best option for achieving those objectives; and
- can be improved to reduce the burden on business and its overall costs.

68. Given the scope of the PIR, and the areas considered during the research phase in 2021, only some of the inquiry findings will be linked to this work. The WPC has examined a broader range of issues in relation to HSE's approach to the management of asbestos in buildings. However, HSE is developing its plan of work to take forward areas from the PIR and will also use the recommendations from the inquiry to inform its future work with asbestos.

HSE develops and implements a robust research framework for the systematic measurement of current asbestos exposures in non-domestic buildings, using a range of measurement and sampling techniques and informed by international experiences and approaches. It should ensure that adequate consideration is given to exposure measurement in schools and other public buildings. We recommend that HSE publishes its framework by October 2022 and produces findings at frequent intervals thereafter.

HSE conducts research which complements its inspection programme to identify the extent to which dutyholders are, in fact, complying with their obligations under the asbestos regulations.

HSE work with others in the UK and devolved governments to continue to review and share the evidence relating to routine, environmental, air monitoring of asbestos fibres. We ask that HSE writes to us in 12 months' time with an update on Government's latest assessment of these developments.

69. These recommendations were not within the scope of this PIR and therefore the stakeholder survey did not include questions relating to these aspects. However as stated in the written response to the WPC, HSE has a comprehensive published

¹² Magenta Book
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879444/Magenta_Book_supplementary_guide_Guidance_for_Conducting_Regulatory_Post_Implementation_Reviews.pdf

Science and Evidence Strategy¹³ and an associated Science and Evidence Delivery Plan¹⁴ which set out HSE's planned science and research activity to underpin its regulatory activity. HSE will continue to publish the findings in scientific journal papers and the HSE Research Reports series when new findings are available.

HSE works with others in government (GDS) to develop a central digital register of asbestos in non-domestic buildings, describing its location and type. In the first instance, the concept of a central register could be tested using asbestos data from public buildings such as schools and hospitals.

70. CAR 2012 requires duty holders to identify and locate asbestos within their premises and share this information with everyone who may possibly, in the course of their work activity, be at risk of exposure to it. Dutyholders are required to hold this information and the regulations do not require it to be submitted or stored on a central database. Consequently, the stakeholder survey did not ask questions about the need for or potential benefits of a central or national register. Although the cost benefit analysis estimated the total costs of duty of manage, it did not look specifically at the costs of keeping records. The stakeholder survey did not ask respondents if record keeping in compliance with duty to manage imposed a cost burden on business. However, any changes to legislation, for example, requirements for dutyholders to submit information to a central database would need to be assessed as part of a cost benefit analysis to ensure it did not place an unreasonable burden on business.
71. A central record of buildings with ACMs within them is not maintained by HSE or any other body within GB. As acknowledged in Appendix 2 (paragraph 84) precise knowledge about the location of all ACMs in GB is not available. The modelling set out in the cost benefit analysis, looking at the presence of asbestos in buildings and the attrition rate, is based on the best evidence available. In future we are expecting an Ordnance Survey Database to provide an improved indication of buildings with ACMs based on date of construction and it is also intended to address this issue in HSE's future research.

HSE ensures its current review of the Control of Asbestos Regulations includes a thorough written assessment of moves towards more stringent asbestos occupational exposure limits (OELs) in Europe. It should carefully consider their application to the GB context, taking full account of costs and benefits. It should ensure that the extent of the asbestos legacy in Great Britain is not seen as reason to tolerate poorer health standards.

72. The CAR 2012 PIR has been structured around the PIR objectives, outlined earlier, using the evidence that was collected in mid-2021. In effect, the PIR did not specifically consider changes to asbestos occupational exposure limits as this was outside the remit of this review. The online survey did not find any evidence that duty holders were concerned about the current exposure limits. However, HSE recognise the need to ensure that exposure limits are based on the best available science and should be linked to strong evidence of the realisation of tangible health benefits. HSE will review any robust, peer reviewed evidence on exposure levels that show tangible health benefits for GB workers. Where there is evidence of a new workplace exposure limit being required, there will be a full consultation and cost benefit analysis conducted as part of introducing any change. HSE will continue to monitor international developments in this area.

¹³ Science and Evidence Strategy <https://www.hse.gov.uk/research/content/science-evidence-strategy-1622.pdf>

¹⁴ Science and Evidence Delivery Plan <https://www.hse.gov.uk/research/content/science-evidence-delivery-21-24.pdf>

HSE strengthens its work with, and guidance to, dutyholders to make clear their obligations to communicate asbestos information and risks to building contractors and users.

73. Following the 2017 PIR, HSE acted on one of the recommendations concerning guidance for dutyholders on their roles and responsibilities around duty to manage asbestos in non-domestic premises. A significant majority of respondents in the 2021 survey were aware of the guidance; 64.3% stated that they had used the revised 'duty to manage' section of HSE's asbestos webpages and 66.2% claimed that they had found it either very helpful or extremely helpful.
74. HSE recognises the importance of duty holders actively managing this information and ensuring it is regularly communicated to those who need it most. During 2022/23, HSE will carry out targeted inspection activity across GB workplaces to check compliance with these important legal duties, to ensure that those most at risk of exposure, such as trades people, are being informed of the location of asbestos before work commences. We will also look to develop our communications activity in this area to support this wider inspection work.
75. In parallel, HSE will continue its work with duty holders and those in charge of estates strategies for non-domestic buildings, to raise awareness of the legal requirements.

HSE should also identify wider lessons from its planned inspection programme for dutyholders in 2022/23, considering whether it needs to specify minimum knowledge, training or other requirements for people performing this critical role.

76. Competence plays an important role in ensuring the safe management of asbestos. HSE and industry guidance makes it clear that anyone liable to disturb asbestos during their work must have received the correct level of information, instruction and training to enable them to carry out their work safely and competently and without risk to themselves or others. This PIR has considered asbestos-related training, and this is covered in detail in Appendix 2 in relation to the associated costs. Analysis of the survey data identified that some respondents reported more awareness training in the industry as a consequence of CAR 2012 and only a very small proportion of dutyholders thought asbestos-related training and awareness needed to be improved. There is no substantial evidence to suggest the regulations need amending in relation to training requirements that are well established and covered in detail in HSE guidance. HSE will continue to use intelligence gained from inspections of dutyholders to help inform possible future work in this area.

HSE should commit to investing more in sustained campaigning work across a range of media, using multiple interventions and synchronising with the development of its wider strategy for asbestos management. It should employ robust evaluation methods to test what messages and which methods achieve the greatest impact on the behaviours of dutyholders and tradespeople.

77. The stakeholder survey did not ask respondents specific questions about their awareness of asbestos campaigns. Nearly three-quarters of respondents indicated awareness of one or both of HSE's redesigned 'duty to manage' asbestos web pages and the related flowchart hosted by IOSH's "No time to lose" campaign.
78. Most respondents reported having used the revised 'duty to manage' section of HSE's asbestos webpages. and found this content either very or extremely helpful. This

indicates that the information HSE provides on the legal benchmark is suitable. If there is an area to be considered it relates to more general awareness raising of how to find and use the guidance.

79. Most respondents said they had not used IOSH's amended 'duty to manage' flowchart, while fewer than one-third said they had. Of those who had, most reported finding the flowchart either very or extremely helpful. Reasons why respondents had not used the flow chart were not explored. No further questions regarding awareness of campaigns, the use of campaign material, or the effectiveness of campaigns organised by HSE or third parties were featured as part of the survey.
80. Sustained campaigning work is addressed by HSE's written response to the committee.

HSE considers how it could consolidate, tighten, and simplify the current categorisation of asbestos works as part of its 2022 statutory review of the Control of Asbestos Regulations. Its review should carefully assess the net behavioural impacts and costs of any changes.

81. In this instance, evidence was provided as part of the PIR research that simplification of categories set out within the regulations should be explored further. As considered in paragraphs 58 – 62 above, although the 2021 survey did not ask directly whether respondents were in favour of retaining the NNLW work category, there was a small but persistent proportion of respondents who would welcome further clarity around the regulations and guidance for NNLW. Both the PIR and inquiry evidence therefore suggest that the requirements would benefit from more clarity in this area and HSE will now consider how this could be developed further with stakeholders. Any change to the regulations would be subject to a full impact assessment and consultation.

HSE makes it mandatory for all people conducting asbestos surveys to be accredited by a recognised accreditation body.

82. This recommendation was not within the scope of this PIR and therefore the stakeholder survey did not include questions relating to this. In GB an asbestos survey (which includes taking material samples) must be undertaken by a person competent to do so as set out in HSG264 Asbestos: The Survey Guide¹⁵. Whilst the survey guide is goal setting in nature HSE strongly recommend the use of surveying organisations which are UKAS accredited (RG8 Accreditation of Bodies Surveying for Asbestos)¹⁶. HSE's written response to the committee considers these issues in more depth.

HSE assesses the impact of making it a legal requirement for building owners or occupiers to commission accredited asbestos analysts to check asbestos work done on their premises and, by extension, making it illegal for asbestos removal contractors to do so.

83. The survey undertaken for the PIR did not gather data to enable HSE to assess the impact of making it a legal requirement for building owners or occupiers to commission accredited asbestos analysts to check asbestos work done on their

¹⁵ HSG 264 Asbestos: The Survey Guide <https://www.hse.gov.uk/pubns/books/hsg264.htm>

¹⁶ RG8 Accreditation of Bodies Surveying for Asbestos <https://www.ukas.com/wp-content/uploads/2021/10/RG-8-Accreditation-of-Bodies-Surveying-for-Asbestos.pdf>

premises. This was not an area that had been previously identified as being of concern, for example, from the first PIR examining CAR 2012.

84. As described in the full HSE response to the WPC, in GB it is a legal requirement under CAR 2012 for every analyst undertaking the certification process, following asbestos removal, to be UKAS accredited, regardless of who they are appointed by. As part of this accreditation the analyst is required to show impartiality and independence. HSE has recently strengthened and expanded its guidance on professional standards in the revised publication HSG248 Asbestos: The Analysts' Guide¹⁷ published in 2021. This strongly recommends that the analyst is independently sourced and employed by the building owner or occupier in control of the premises. The need for a final clearance certificate to be issued by an independent person was not explored by the PIR survey as it had not been previously identified as an area of concern.
85. The following recommendations were not within the scope of this PIR and therefore the stakeholder survey did not include questions relating to these matters. HSE's written response to the committee considers these issues in more depth.

Set a deadline for the removal of asbestos from non-domestic buildings within 40 years. The Government and HSE should develop and publish a strategic plan to achieve this, focusing on removing the highest risk asbestos first, and the early removal from the highest risk settings including schools. This plan should, in the first instance, commit to improving urgently the evidence base for safe asbestos removal and disposal, considering relative costs and benefits. It should integrate with— and take full account of—proposals for the upgrading of the built environment linked to net zero targets and wider waste management strategies.

Government investigates opportunities to improve the occupational information recorded on death certificates.

HSE works with others in Government to sponsor improvements in how information on asbestos in buildings is communicated and used, drawing on lessons from the use of digital technologies in building management and in the health response to the pandemic.

HSE commits to a sustained increase in inspection and enforcement activity targeting compliance with the Control of Asbestos Regulations. Repeating our recommendation from June 2020, the Government and DWP should ensure that it provides adequate funding to HSE to support this increased programme of work over the medium term.

How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of

¹⁷ HSG248 Asbestos: The Analysts' Guide <https://www.hse.gov.uk/pubns/priced/hsg248.pdf>

retained EU law, or how other countries have implemented international agreements?

86. HSE considers approaches to asbestos management adopted by other countries, in the context of the domestic exposure risk and scale and type of asbestos present in buildings across GB. The type and scale of asbestos present is different and higher than in many other countries. The approach taken by different countries to manage asbestos varies according to these factors.
87. EU member states implemented the same asbestos directives, now consolidated as 2009/148/EC, which focus on the risk to building maintenance workers who are those currently most at risk of exposure. Consequently, how the legal framework then developed within EU member states was dependent on the domestic framework for occupational health and safety regulation within each country and country-specific factors. For example, GB imported more amosite (brown) asbestos than many other countries as it was widely used in asbestos insulating board (AIB) for fire protection. Therefore, the regulatory regime adopted in GB took this into account. Research in GB showed building maintenance workers to be particularly at risk and this led GB to introduce the duty to manage asbestos in non-domestic premises well ahead of any maintenance work. All these factors impacted on how our regulatory regime has evolved over time and the scale of the risks of exposure in GB.
88. The requirements set out in the regulatory framework in GB now are similar to several other countries in relation to inspection, record keeping, testing and disposal. For example, Belgium, the USA and Germany all require proactive management, inspection and air monitoring as part of clearance procedures after disturbance of asbestos caused by removals work. None of these countries require any routine air sampling of occupied buildings in the absence of work with asbestos.
89. France has similar requirements for premises inspection, record keeping and disposal. However, since 2011, France has introduced requirements for a surveyor to consider whether to include air sampling near high-risk asbestos materials during their visual inspections every 3 years in non-domestic buildings. This surveyor discretion applies to only higher risk materials such as sprayed asbestos and insulation.
90. This is different to the approach in GB. As a minimum the management plan including records and drawings should be reviewed every 12 months. Any identified or suspected ACM must be inspected, and its condition assessed periodically by a competent person to check that it has not deteriorated or been damaged. The frequency of inspection is risk based.
91. We recognise the limitations and difficulties of representative air sampling at very low concentrations, and we do not require such air monitoring. Air monitoring relies on effective sampling as much as the technicality of measurement because asbestos does not remain airborne. In very low concentrations there is a greater risk of results that cause the wrong decisions to be made in managing asbestos. Whereas visual inspection can identify asbestos that requires action irrespective of an air measurement result.
92. Very few countries have mandatory air testing for buildings which is unrelated to work on the building structure. Where environmental / indoor ambient limits have

been set in other countries, like France and the Netherlands these have been made by public health authorities, not by the worker safety regulator. For example, France (and some other countries) has a low national environmental limit for asbestos set out in their public health code from the Ministry of Health.

What are the recommendations of the PIR?

93. Based on the collective research supporting the PIR including evidence from the stakeholder survey, cost/benefit analysis, epidemiological data and having considered the WPC recommendations, HSE considers:
- the regulations are achieving their intended objectives and that those objectives remain valid,
 - intervention by regulation is still required and remains the most effective way to control the risks of exposure to asbestos,
 - it is not necessary to amend the provisions of CAR 2012 at this time.
94. While we don't regard a substantive revision of CAR to be necessary at this time, we will consider further the regulatory requirements around notifiable and non-notifiable work. Both the PIR and inquiry evidence suggest that the requirements would benefit from more clarity in this area and HSE will now consider how this could be developed further with stakeholders. Any change to the regulations would be subject to a full impact assessment and consultation.
95. Exposure to asbestos can have fatal consequences. A robust regulatory framework is required to ensure that workers liable to disturb it are protected. CAR 2012 maintains the protection given to those who might be exposed to asbestos fibres, setting clear health and safety requirements to ensure the appropriate control measures are in place to prevent exposure to asbestos from work activity or reduce exposure as far as reasonably practicable.
96. Survey respondents were broadly supportive of the regulations. The 2021 survey found that 1078 respondents did not believe the aims and objectives of the regulations could be achieved with a system that imposes less regulation. A further 226 respondents were unsure. 213 respondents believed the aims and objectives of the regulations could be achieved with a system that imposes less regulation, although there was no consensus of what a such a system would look like.
97. The 2022 PIR demonstrates that the impact of CAR 2012 has a large £16.3 bn net present social value¹⁸ and that the case for maintaining the regulations remains strong. The cost benefit assessment allows us to conclude that the benefits of CAR 2012 outweigh the costs and will continue to do so for the foreseeable future, so long as exposures continue to be effectively controlled.
98. In the 2017 PIR, costs were uncertain and estimated to be in the high single billions as set against estimated benefits in terms of averted deaths of around £28.8bn. The net present social value identified in the 2022 PIR is lower than the previous estimate claimed in 2017. However, factors that account for this difference include:

¹⁸ The net present social value is a sum of estimated 100 years of annual economic costs and benefits of CAR 2012 presented in monetary terms. Net Present social value is the difference of net present value of benefits less the net present value of costs. Benefits are estimates of the cost savings of avoided pain, misery, and suffering associated with asbestos ill health. Cost are estimated from direct costs to businesses and government of compliance with the regime.

- High stakeholder engagement allowing detailed costings where the 2017 PIR was uncertain.
- Improved methodology adopted for the 2022 PIR.
- Improved evidence increasing costs associated with NNLW, non-notifiable, and duty to manage elements of the regulations.

99. Although the costs have increased, this is associated with a corresponding increase with NNLW, non-notifiable work and duty to manage activity. The survey data points towards increased awareness of asbestos amongst businesses. This is a positive outcome which may explain why there is an increasing level of investment to manage the risk. However, the increase in cost could exclusively be due to a consequence of improved quality of cost estimates rather than increased effort to comply.

Future considerations

100. The building safety regulatory regime has undergone the Hackitt review but only the interim conclusions have been published. That review could impact regulation of asbestos in the built environment; therefore, any proposals for changes to CAR12 will also need to consider this report once it is published in full.

101. Both the PIR and the WPC inquiry evidence suggest the need for providing greater clarity around work categories within the regulations and HSE will now consider how this could be developed further with stakeholders. Any change to the regulations would be subject to a full impact assessment and consultation. This would reduce the burdens on business by simplifying both the regulations and guidance.

Evidence Summary Report for the Control of Asbestos Regulations 2012 second PIR

Summary

1. Evidence informing the Post Implementation Review was based on the results of a comprehensive, broadly distributed online questionnaire, which attracted 1850 responses from organisations varying in size and industrial sector.
2. Most participants **disagreed** that CAR 2012's aims and objectives could be achieved through a system imposing less regulation and **agreed** that:
 - the CAR 2012 regulations are effective in protecting workers from the risks of asbestos.
 - the legislative framework of CAR 2012 enables industry to effectively control the risk of exposure to asbestos from work activity or reduce exposure as far as is reasonably practicable
 - the guidance which HSE provided on the application of the new CAR 2012 requirements mitigated the impact of the legislative change on businesses.
3. Small proportions of respondents reported benefits resulting from the introduction of CAR 2012; some asserted CAR 2012 afforded workers and the public better protection from asbestos exposure, that there is now more awareness training in the industry, or that guidance is now clearer.
4. Almost half of respondents reported that there had been no negatives resulting from CAR 2012.
 - Small proportions of respondents (around 4% to 5%) cited negatives such as the regulations around Notifiable Non-Licensed Work (NNLW), or the regulations and guidance being unclear, or extra costs.
5. Unintended consequences of CAR 2012.
 - Over half of respondents reported experiencing no unintended consequences resulting from CAR 2012.
 - Almost half of survey participants said that they had incurred other costs resulting from CAR 2012, such as extra training, having to undertake more surveys and increased asbestos removal costs.
6. The 2017 PIR gave estimates of the costs and time needed to carry out risk assessments, produce written work plans, demarcate and separate asbestos work areas and rest and refreshment areas, inspect and maintain control measures, and to properly package and transport asbestos. In response to questions regarding these

estimates, most participants in this latest research agreed with the estimates in most of the questions. More detailed analysis can be found in the 'Findings' section below.

7. HSE's guidance "Asbestos Essentials".
 - Most respondents asserted that they were aware of the new edition of HSE's asbestos-related guidance, and most reported having used it.
8. HSE's webpages – redesigned asbestos pages.
 - Nearly three-quarters of respondents indicated awareness of one or both of HSE's redesigned 'duty to manage' section and the related flowchart hosted by IOSH's "no time to lose" campaign.
 - Most respondents reported having used the revised 'duty to manage' section of HSE's asbestos webpages. and found this content either very or extremely helpful.
 - Most respondents said they had not used IOSH's amended 'duty to manage' flowchart, while fewer than one-third said they had. Of those who had, most reported finding the flowchart either very or extremely helpful.
 - Revised guidance providing examples of 'plans of work' was produced in September 2017. Most respondents indicated that they were aware of this guidance, and that they had used it. Most respondents reported finding the guidance very or extremely helpful.
9. The best-represented individual category of organisation size was that of 1000+ employees, comprising over a quarter of respondents, while those with 100 to 249 employees made up just over a tenth of respondents.
 - Smaller organisations (49 employees or fewer) made up just under one-third of the survey response, while those with 50 or more employees comprised almost two-thirds.
10. Almost half of participants indicated that they were mainly engaged in asbestos management work via 'duty to manage' regulatory requirements, followed by those claiming to do 'other' asbestos-related work. Contractors, surveyors, consultants and trainers were most significantly represented among the 'other' group of respondents.

Introduction

11. This paper provides an analysis of the evidence collected to inform the second Post Implementation Review (PIR) of the Control of Asbestos Regulations 2012 (CAR 2012). The research approach builds upon the extensive evidence collected for the first PIR¹⁹ and takes a proportionate approach through focusing data collection on both the areas where the costs to businesses were the highest and also where it was felt that the robustness of existing data could be improved through further data collection.
12. An on-line questionnaire was felt to be the most appropriate approach for engaging effectively with a broad range of stakeholders across the breadth of industrial sectors. This allows for the potential of a large number of quantitative responses; supplemented

¹⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/598574/post-implementation-review-of-the-control-of-asbestos-regulations-2012.pdf

by open, qualitative questions aimed at conveying a broader understanding of stakeholder responses.

13. Further qualitative investigation of the resulting data was not deemed necessary or proportionate, given the broad consensus which emerged from the survey findings. The methodology employed in this review was formally approved by HSE's Evaluation Working Group (EWG).

Methods

14. The data, an online questionnaire (attached to Annex A) was used to gather data for analysis. The questionnaire, consisting of 107 questions, was available for completion between 21st May and 11th June 2021. It should be noted that the questionnaire was designed to be simple to complete by 'routing' participants to relevant questions only; this meant the questionnaire only took an estimated 10 minutes to complete. The questionnaire was promoted to a range of stakeholders and relevant dutyholders via HSE E-bulletins for the construction, asbestos, risk-management, education, health and social care, and local government sectors, as well as to small and medium sized businesses, schools and organisations concerned with lung disease and occupational cancer. Messages were also placed on HSE's Twitter account. Reminders about the questionnaire were sent out via Linked-in and Twitter on Tuesday 1st and Monday 7th of June 2021.
15. The questionnaire attracted responses from a range of employers and industrial sectors. In total 1850 responses were received. Of the 1313 respondents who indicated which category of asbestos work they mainly undertake this breaks down as follows.
 - 622 (47.4%) reported managing asbestos via 'Duty to Manage' requirements.
 - 165 (12.6%) reported doing mainly licensable work.
 - 144 (11%) said they mostly do non-notifiable work.
 - 54 (4.1%) stated that they mostly do notifiable non-licensed work.
 - 328 (25%) reported doing 'other' types of asbestos-related work, most often as consultants, surveyors, contractors and trainers.
16. The sample of respondents may slightly overrepresent larger employers; of the 977 respondents who disclosed how many people worked for their organisation:
 - 270 (27.6%) reported working for organisations with 1,000 or more employees.
 - 240 (24.6%) responses from employers of 1 to 24 people.
 - 163 (16.7%) from employers with 25 to 99 employees.
 - 201 (20.5%) from employers of 100 to 499 people.
 - 79 (8.1%) reported employing 500 to 999 people.
17. This may mean that the information gathered by this questionnaire has a slight 'skew' toward the opinions and experiences of very large employers, but this should be tempered by the fact that significant responses were also received from smaller employers, and that nearly half of all respondents did not disclose their organisation size.

18. While there were 1850 responses to the questionnaire, it should be noted that not all respondents answered every question. Where qualitative, free-text answers were received, these were subjected to thematic analysis and 'coded' according to the main theme of the response, and the themes were then quantified in terms of their incidence.
19. Most questions asked for responses framed in terms of degrees of agreement, disagreement or neutrality and presented on a Likert Scale from which respondents could indicate their preferred response. These responses were then analysed in terms of their positivity (agreement), negativity (disagreement) or neutrality, and the degree of the response.
20. There were some questions asking for answers in the form of numerical amounts, such as numbers of workers using full personal protective equipment (PPE) per job or estimated monetary costs of partitioning off rest and eating areas from work areas; some of these questions only attracted small numbers of responses. In cases where there were no clear trends identifiable among the responses received, then responses were 'grouped' into appropriate bands.

Findings

Section 1: Objectives of CAR 2012

Question 1. Please indicate whether you agree or disagree with the following statement: 'CAR 2012 sets out a framework for preventing exposure to asbestos from work activity or reducing exposure as far as is reasonably practicable'.

Table 1

Response	Number
Strongly agree	674
Agree	990
Neither agree nor disagree	65
Disagree	43
Strongly disagree	18
Don't know / unsure	52
Grand Total	1842

Of the 1842 responses to question 1, there were 674 (36.6%) responses expressing strong agreement with the statement and 990 (53.7%) showing agreement; this shows 1664 (90.3%) respondents to question 1 indicating a degree of agreement. There were 43 (2.3%) responses expressing disagreement and 18 (1%) conveying strong disagreement; a total of 61 (3.3%) indicated some degree of disagreement.

Question 2. Please briefly explain why you disagree with the statement that 'CAR 2012 sets out a framework for preventing exposure to asbestos from work activity or reducing exposure as far as is reasonably practicable'.

Responses to question 2 were subjected to thematic analysis and categorised according to the main topics of their free-text content. The themes that emerged are shown in table 2 below, along with their rate of incidence.

Table 2

Themes	Number
As Low as Is Reasonably Practical (ALARP) Does Not Reflect Risk	1
Asbestos Trades Over-Policed	1
CAR Doesn't Protect Public/Workers	2
Clearer Guidance Needed	3
Ensure Surveyor/Contractor Compliance	4
Inadequate Safety Provision	1
Lack Of Compliance	6
N/A	5
Not Enforced Properly	2
Onsite Culture at Fault	1
Public Buildings/Social Housing Problematic	4
Regulations Concerned with Managing Rather Than Removing Asbestos	1
Regulations Not Comprehensive/Prescriptive Enough	5
Removal Programme Required	1
Supervise Licensed Work	1
Workforce Training/Knowledge Inadequate	3
Grand Total	41

The theme that emerged most often was that of compliance, with 6 responses asserting that there is a lack of compliance in the industry, and a further 4 commenting that refurbishment and demolition ('R&D') surveys are not carried out adequately. There were 5 comments suggesting that the CAR regulations are inadequately comprehensive or prescriptive, while 4 respondents expressed opinions about the problems of applying the regulations in public buildings and/or social and rented housing.

Question 3. Please indicate whether you agree or disagree with the following statement: “The guidance which HSE provided on the application of the new CAR 2012 requirements ameliorated the impact of the required legislative change on business”.

Table 3

Response	Number
Strongly agree	241
Agree	793
Neither agree nor disagree	356
Disagree	55
Strongly disagree	17
Don't know / unsure	109
Grand total	1571

As shown in table 3 above, there were 1571 responses to question 3; among these there were a total of 1034 (65.8%) expressions of either agreement (793, 50.5%) or strong agreement (241, 15.3%). A further 72 respondents (4.6%) showed either disagreement (55, 3.5%) or strong disagreement (17, 1.1%).

Question 4. Please briefly explain why you disagree with the statement that 'the guidance which HSE provided on the application of the new CAR 2012 requirements ameliorated the impact of the required legislative change on business'.

Table 4

Response Theme	Number
Additional Burden on Fire & Rescue Workers	3
Ambiguities In Guidance	11
Concerns Management Not Removal	3
Guidance Not Comprehensive Enough	3
Guidance Too Complex	6
Increased Burden on Business	3
Lack Of Awareness	5
Lack Of Compliance	7
Other Or N/A	17
Grand Total	58

The most frequently occurring response themes submitted for question 4 are shown in table 4 (above). Of the 58 responses, those themes with the highest rates of incidence came from

those who disagreed with the statement because they thought there were 'ambiguities in the guidance' (11, 19%), or because they perceived a 'lack of compliance' (7, 12.1%), or they found the 'guidance too complex' (6, 10.3%)

Question 5. Do you believe that the aims and objectives of CAR 2012 could be achieved with a system that imposes less regulation?

Table 5

Response	Number
Yes	213
No	1078
Don't know / unsure	226
Grand Total	1517

The largest proportion of responses to question 5 (1078, 71.1%) stated that they did not believe the aims and objectives of the CAR 2012 could be achieved by a system which imposed less regulation. There were 213 (14%) responses asserting the belief that this is possible, while a slightly larger proportion of responses (226, 14.9%) indicated that they did not know.

Question 6. Please briefly describe what such a system would look like:

Table 6

Response Theme	Number
Approved Code of Practice (ACOP)	2
Asbestos Work Only Done by Specialists	2
Clear Definitions of Non-Licensed Non-Notifiable Work	2
Decrease Bureaucracy	5
Define Asbestos Management Duties	2
Educate Dutyholders/Clients	2
Focus Training on Relevant Workers	2
Increase Awareness/Compliance Among Small and Medium Sized Businesses (SMEs)	2
Increase Training Decrease Regulation	2
More Enforcement	2
N/A	9
Reduce/Combine Regulations	2

Regulate Proportionately to Risk	6
Remove Requirement to Notify Non- Licensed Work	3
Review Asbestos-Containing Materials (ACMs) Covered by Car	2
Self-Regulation	3
Simplify Guidance/Regulation	19
Other	18
Grand Total	85

There were 85 responses to question 6. Of these, the largest proportion were submitted by respondents who thought there could be a more 'simplified' system of guidance and regulations (19, 22.4%). A further 6 (7.1%) respondents thought HSE should 'regulate proportionately to risk', while 5 (5.9%) respondents believed such a system could feature 'decreased bureaucracy'.

Question 7. Please indicate whether you agree or disagree with the following statement: "The Control of Asbestos Regulations 2012 (CAR 2012) are effective in protecting workers from the risks of asbestos?"

Table 7

Response	Number
Strongly Agree	369
Agree	724
Neither Agree nor Disagree	148
Disagree	141
Strongly Disagree	26
Don't Know / Unsure	23
Grand Total	1431

The largest proportion of responses to question 7 (1093, 76.4%) either agreed (724, 50.6%) or strongly agreed (369, 25.8%) with the statement. In comparison, there were 167 (11.7%) responses showing either disagreement (141, 9.9%) or strong disagreement (26, 1.8%) with the statement.

Question 8. Please briefly explain why you disagree with the statement that 'the Control of Asbestos Regulations 2012 (CAR 2012) are effective in protecting workers from the risks of asbestos'

Table 8

Response Theme	Number
Current Regs Ineffective	5
Duty To Manage	7
Environmental Exposure	3
Greater Enforcement on SME's	4
Improve Training/Awareness	19
Inadequate Awareness	15
Lack Of Enforcement	19
N/A	4
Non-Compliance	40
R&D Survey Bad Practice	5
School/Public Building Risks Unrecognised	5
Simpler Guidance	7
Tighten Regulation	8
Unclear	3
Other	8
Grand Total	152

There were 152 responses to question 8; those response themes with the highest rates of incidence are shown in table 8 (above). The most common theme among responses was the idea that the 2012 CAR regulations are not effective in protecting workers because of 'non-compliance' with the regulations (40, 26.3%). A related theme, that of a 'lack of enforcement', was put forward by 19 (12.5%) respondents.

A further 19 (12.5%) respondents stated that asbestos-related training and awareness need to be improved, while another 15 (9.9%) responses stated that there is 'inadequate awareness' of the risks of asbestos but did not make any suggestions to remedy this.

Section 2: Costs of CAR 2012

Question 9. Please indicate what type of work YOU do with asbestos (if multiple options apply to you and your business, please choose the ONE which is most relevant / appropriate).

Table 9

Response	Number
Licensable work	165
Manage asbestos via 'Duty to manage' requirements	622
Non-notifiable work	144
Notifiable non-licensed work	54
Other (please specify)	328
Grand Total	1313

The largest proportion of those responding to question 9 indicated that they mainly undertake asbestos management work (622, 47.4%). The next largest group of respondents indicated that they were engaged in 'other' types of asbestos-related work (328, 24.5%). The remaining respondents stated that they were engaged in licensable work (165, 12.6%), non-notifiable work (144, 11%) or notifiable non-licensed work (54, 4.1%).

Question 9a Other (please specify)

Table 9a

Response Theme	Number
All The Above	10
Analyst	13
Asbestos Victim Support	9
Construction	12
Consultant	76
Contractor	25
Designer	7
Duty To Manage	4
Fire & Rescue	3
Health & Safety	8
Inspection	10
Local Authority	3
Manager	2
N/A	14
Occupational Health Surveillance	2
Property Maintenance	3

Property Manager	2
Property Owners	2
Railway	2
Regulator	10
Related Trades	11
Removal	4
School Related	4
Surveyor	38
Trade Union	13
Training	33
Unclear/Other	6
Waste Disposal	2
Grand Total	328

There were 328 respondents who submitted 'other' asbestos-related work responses to question 9. Of these, 76 (23.2%) stated that they and/or their business were consultants, a further 38 (11.6%) asserted that they were surveyors, and another 33 reported being involved in asbestos-related training.

2.1 Licensable Work

Question 10. Regulation 6 requires employers to carry out a risk assessment to identify the risks of exposure to asbestos. It sets out the requirement to record any significant findings and put in place steps to prevent, or reduce, exposure to employees. It was calculated in the 2017 PIR that it would take approximately 5 hours to write this risk assessment. Based on your experience, how accurate is this figure?

Table 10

Response	Number
Much too high	7
Too high	45
About right	78
Much too low	8
Too low	20
Don't know / unsure	11
Grand Total	169

The largest proportion of respondents to question 10 (78, 46.1%) agreed that the estimate of 5 hours to carry out an assessment of the risks of exposure to asbestos was 'about right'. The next largest group of respondents (52, 30.8%) indicated that they thought the estimate was either 'much too high' (7, 4.1%) or 'too high' (45, 26.6%). A further 28 (16.6%) respondents felt that the estimate was either 'much too low' (8, 4.7%) or 'too low' (20, 11.8%).

Question 11. Can you please provide a general estimate of how long it takes - in hours - to write a risk assessment as required by Regulation 6? Please provide the answer in terms of whole hours (e.g. 2 or 4, rather than 2.5 hours or 90 minutes).

Table 11

Hours	Number
1	1
1.5	3
2	16
2.5	1
3	18
3.5	1
4	11
7	2
7.5	1
8	12
10	2
12	2
16	2
24	2
unclear	8
Grand Total	82

The largest proportion of respondents to question 11 reported taking from 2 to 3 hours to write a risk assessment as required by Regulation 6 (35, 42.7%). Another 12 (14.6%) respondents stated that this took them 8 hours, while a further 11 (13.4%) reported taking 4 hours to write a risk assessment.

Question 12. It was calculated in the 2017 PIR that the staff costs to write the risk assessment were £35 per hour. Based on your experience, how accurate is this figure?

Table 12

Response	Number
Much too high	7
Too high	13
About right	88
Much too low	5
Too low	35

Don't know / unsure	17
Grand Total	165

In response to question 12, the largest proportion of respondents (88, 53.3%) indicated that they thought the estimated £35 per hour staff costs involved in writing the risk assessment was 'about right'. Another 40 (24.2%) respondents thought the estimate either 'much too low' (5, 3%) or 'too low' (35, 21.2%), while only half as many respondents (20, 12.1%) were of the opinion that the estimate was either 'much too high' (7, 4.2%) or 'too high' (13, 7.9%).

Question 13. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for writing a risk assessment as required by Regulation 6? Please provide the answer in terms of whole pounds.

Table 13

Cost in UK Pounds	Number
20	4
25	7
30	2
40 - 45	11
50	9
60 - 65	5
70 - 80	3
85	1
100 -135	6
200 - 250	4
280 - 300	2
350	1
480	1
unclear	2
Grand Total	58

Responses to question 13, as illustrated in table 13 above, have been grouped together (where low rates of incidence were closely grouped together) or left ungrouped (in order to illustrate more pronounced rates of incidence) where appropriate. There were 13 (22.4%) respondents reporting staff costs of £20 to £30 being incurred by writing a risk assessment. Staff costs of £40 to £45 were reported by 11 (19%) respondents. A further 9 (15.5%) respondents reported staff costs of £50.

Question 14. It was calculated in the 2017 PIR that there would be 'other' costs associated with Regulation 6 for licensed work of £150 per job. Based on your experience, how accurate is this figure?

Table 14

Response	Number
Much too high	3
Too high	4
About right	72
Too low	44
Much too low	12
Don't know / unsure	27
Grand Total	162

The largest proportion of responses to question 14 (72, 44.5%) came from participants expressing the opinion that the estimate of £150 per job for 'other' costs was 'about right'. The next largest proportion of responses (56, 34.6%) were submitted by those who thought the estimate to be either 'too low' (44, 27.2%) or 'much too low' (12, 7.4). A further 7 (4.3%) responses asserted that the estimate was either 'too high' (4, 2.5%) or 'much too high' (3, 1.8%).

Question 15. Can you please provide a general estimate of how much 'other' costs - in pounds - there is associated with Regulation 6 for licensed work? Please provide the answer in terms of whole pounds.

Table 15

Cost in UK pounds	Number
50	1
70 - 80	4
90 - 100	3
120	2
155 - 175	2
180 - 190	2
200	7
220 - 240	2
250 - 260	10
300	7
350	3
400 - 410	3

500	8
600 - 750	2
1000	3
unclear	2
Grand Total	61

In response to question 15, the largest proportionate response (10, 16.4%) came from those estimating their 'other' costs at £250 - £260. Another 8 (13.1%) respondents estimated their 'other' costs for licenced works associated with Regulation 6 at £500, while a further 7 (11.5%) estimated other costs at £300.

Question 16. Regulation 7 requires employers to prepare a written plan before work on asbestos is carried out, including details of the work, and the appropriate actions to control risk and prevent harm. It was calculated in the 2017 PIR that it would take approximately 5 hours to prepare a written plan before work on asbestos is carried out. Based on your experience, how accurate is this figure?

Table 16

Response	Number
Much too high	5
Too high	23
About right	80
Too low	34
Much too low	9
Don't know / unsure	7
Grand Total	158

In response to question 16, the largest proportion of responses (80, 50.6%) was submitted by those who thought that the estimated 5 hours to complete a written plan for work on asbestos was 'about right'. This was followed by 43 (27.2%) responses stating that the estimate was either 'too low' (34, 21.5%) or 'much too low' (9, 5.7%). There were a further 28 (17.7%) responses stating that the estimate was either 'too high' (23, 14.6%) or 'much too high' (5, 3.2%).

Question 17. Can you please provide a general estimate of how long it takes - in hours - to prepare a written plan before work on asbestos is carried out as required by Regulation 7? Please provide the answer in terms of whole hours (e.g. 2 or 4, rather than 2.5 hours or 90 minutes).

Table 17

Hours	Number
1	1
2	6
3	14
4	7
6	3
7 – 7.5	6
8	17
9	2
10	4
12.5	1
16	2
21	1
24	1
48	1
90	1
unclear	4
Grand Total	71

In response to question 17, the largest proportionate response (17, 24%) came from those stating that it took them about 8 hours to produce a written plan before carrying out asbestos-related work, in relation to Regulation 7. A further 14 (19.7%) participants claimed that this took them about 3 hours, while another 7 (9.9%) asserted that producing written plans took them about 4 hours.

Question 18. It was calculated in the 2017 PIR that the staff costs to prepare a written plan before work on asbestos is carried out were £23 per hour. Based on your experience, how accurate is this figure?

Table 18

Response	Number
Much too high	2
Too high	3

About right	56
Too low	63
Much too low	18
Don't know / unsure	15
Grand Total	157

The largest proportion of responses to question 18 (81, 51.6%) asserted that the estimated staff costs of £23 per hour to prepare a written asbestos work plan were either 'too low' (63, 40.1%) or 'much too low' (18, 11.5%). The next largest proportion of responses (56, 35.7%) stated that the estimate was 'about right'. According to 5 (3.2%) responses, the estimate was either 'too high' (3, 1.9%) or 'much too high' (2, 1.3%).

Question 19. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for preparing a written plan before work on asbestos is carried out as required by Regulation 7? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 19

Cost in UK pounds (£)	Number
10 – 20	4
27	1
30	7
35	20
36 – 38	3
40	17
44 – 45	2
50	9
55 – 65	5
85 – 90	2
100	1
135	2
150 – 161	3
175 – 180	2
240 – 250	2
300 – 400	2
405 – 450	2
700	1
2000	1
Grand Total	86

When asked to estimate their staff costs for producing a written plan in relation to Regulation 7, the highest proportion of respondents (20, 23.3%) estimated theirs at £35. A further 17

(19.8%) respondents thought their costs stood at about £40, and another 9 (10.5%) felt their costs to be at £50. Most answers to question 19 were concentrated at the level from £30 to £50 (58, 67.4%).

Question 20. It was calculated in the 2017 PIR that there would be cash costs associated with Regulation 7 for licensed work of £400 per job. Based on your experience, how accurate is this figure?

Table 20

Response	Number
Much too high	1
Too high	9
About right	84
Too low	29
Much too low	5
Don't know / unsure	23
Grand Total	151

In response to question 20, the largest proportionate response (84, 56%) came from those for whom the estimate of £400 cash costs per job associated with regulation 7 was 'about right'. The next largest group of responses (34, 22.5%) was submitted by those who thought the estimate to be either 'too low' (29, 19.2%) or 'much too low' (5, 3.3%). Another 10 (6.6%) responses were from those who thought the estimate either 'too high' (9, 6%) or 'much too high' (1, 0.7%).

Question 21. Can you please provide a general estimate of how much cash costs - in pounds (£) - there is associated with Regulation 7 for licensed work? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 21

Amount in UK pounds	Number
50 - 100	5
195	1
200 - 250	5
300	2
450	1
500 - 550	5
600 - 650	10
750	3
1000	6

1200	2
1500	1
Grand Total	41

The highest proportionate response to question 21 came from respondents estimating their cash costs for licenced work in relation to Regulation 7 at £600 to £650 (10, 24.4%). A further 6 (14.6%) respondents estimated these costs at about £1000. Three different sets of 5 (12.2%) respondents each estimated their costs at £50-£100, £200-£250, and £500-£550. The broad spread of answers to question 21 means that the greatest concentration of responses is widely spread, with 29 (70.7%) covering £50 to £650 estimates.

Question 22. Regulation 18 requires employers to make sure that areas where asbestos work is being carried out are separated, clearly marked, and restricted to those required to work in the area. It also requires the employer to provide suitable facilities for employees to eat and drink. It was calculated in the 2017 PIR that it would take approximately 4 hours to identify and demarcate suitable areas. Based on your experience, how accurate is this figure?

Table 22

Response	Number
Much too high	5
Too high	28
About right	79
Too low	23
Much too low	3
Don't know / unsure	9
Grand Total	147

Among the responses to question 22, the greatest proportion (79, 53.7%) was submitted by those who thought 4 hours to identify, demarcate and restrict areas in which asbestos work is being undertaken, was 'about right'. The second largest proportionate response stated this estimate was either 'too high' (28, 19%) or 'much too high' (5, 3.4%). There were a further 26 (17.7%) responses asserting that the estimate was either 'too low' (23, 15.6%) or 'much too low' (3, 2.1).

Question 23. Can you please provide a general estimate of how long it takes - in hours - to identify and demarcate suitable areas as required by Regulation 18? Please provide the answer in terms of whole hours (e.g. 2 or 4, rather than 2.5 hours or 90 minutes).

Table 23

Time in hours	Number
1	6
1.5	1

2	20
3	2
4	1
5	2
6	7
8	8
10	1
12	2
24	1
unclear	3
Grand Total	54

The largest proportionate response (20, 37%) came from respondents who estimated that it took 2 hours to identify and demarcate suitable areas in relation to Regulation 18. There were 8 (14.8%) responses from participants who thought this task took about 8 hours, and a further 7 (13%) thought this took about 6 hours. Responses to question 23 showed significant groupings from 1 to 2 hours (27, 50%) and from 6 to 8 hours (15, 27.8%).

Question 24. It was calculated in the 2017 PIR that the staff costs to identify and demarcate suitable areas were £28 per hour. Based on your experience, how accurate is this figure?

Table 24

Response	Number
Much too high	6
Too high	6
About right	75
Too low	39
Much too low	5
Don't know / unsure	12
Grand Total	143

In response to question 24, the highest proportion of responses (75, 42.5%) expressed the view that the estimated staff costs of £28 per hour for identifying and demarcating suitable areas were 'about right'. The next largest response (44, 30.8%) came from those for whom this estimate was either 'too low' (39, 27.3%) or 'much too low' (5, 3.5%). There were another 12 (8.4%) responses stating that the estimate was either 'too high' (6, 4.2%) or 'much too high' (6, 4.2%).

Question 25. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for identifying and demarcating suitable areas as required by Regulation 18? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 25

Amount in UK pounds	Number
10 -20	7
23	1
25	1
30	4
35	15
36 - 40	11
45	1
50	5
60	2
80	1
100	1
225	1
1000	2
unclear	1
Grand Total	53

The largest proportionate response to question 25 came from respondents who thought that fulfilling the requirements of Regulation 18 cost them about £35 (15, 28.3%). A further 11 (20.7%) respondents asserted that this cost them from £36 to £40, while another 7 (13.2%) stated that this cost them from £10 to £20. Responses to question 25 displayed significant concentration from £10 to £40 (39, 73.6%).

Question 26. It was calculated in the 2017 PIR that it would cost £1,000 per job for fencing and barriers in order to identify and demarcate suitable areas under Regulation 18. Based on your experience, how accurate is this figure?

Table 26

Response	Number
Much too high	10
Too high	31
About right	74
Too low	9

Much too low	3
Don't know / unsure	12
Grand Total	139

The highest proportion of responses to question 26 (74, 53.2%) stated that the estimate of £1000 per job for fencing and barriers was 'about right'. The next highest proportion of responses (41, 29.5%) asserted that the estimate was either 'too high' (31, 22.3%) or 'much too high' (10, 7.2%). There were a further 12 (8.6%) responses indicating that the estimate was either 'too low' (9, 6.5%) or 'much too low' (3, 2.2%).

Question 27. Can you please provide a general estimate of how much fencing and barriers would cost - in pounds (£) - in order to identify and demarcate suitable areas for licensed work under Regulation 18? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 27

Amount in UK pounds	Number
50	1
100	4
120 - 150	3
175 - 200	5
250	2
300	4
400	2
500	14
700 - 750	4
800	2
1200	1
1500	2
2000	3
2500	1
3000	1
unclear	1
Grand Total	50

In response to question 27 the largest proportion of participants (14, 28%) estimated their fencing and barrier costs in relation to Regulation 18 at about £500. A further 5 (10%) thought that these costs came in at £175 to £200. Three separate groups of 4 (8%) respondents each stated that these costs were about £100, £300, and £700 to £750. There was a greater concentration of responses from £50 to £500 (35, 70%).

Question 28. Regulation 13 requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and respiratory protective equipment (RPE) at suitable intervals and for records of examinations and tests to be kept for at least five years. It was calculated in the 2017 PIR that it would cost £5,000 in staff costs per license holder for employers to carry out regular inspection and maintenance of control measures. Based on your experience, how accurate is this figure?

Table 28

Response	Number
Much too high	1
Too high	11
About right	67
Too low	24
Much too low	7
Don't know / unsure	18
Grand Total	128

The largest proportion of respondents to question 28 (67, 52.3%) indicated that they felt the estimated staff costs of the maintenance and inspection of control measures were 'about right'. The next highest proportion (31, 24.2%) thought that the estimate was either 'too low' (24, 18.8%) or 'much too low' (7, 5.5%). Another 12 (9.4%) responses asserted that the estimate was 'too high' (11, 8.6%) or 'much too high' (1, 0.8%)

Question 29. Can you please provide a general estimate of how much - in pounds (£) - would the staff cost be per licence holder for employers to carry out regular inspection and maintenance of control measures as required by Regulation 13? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 29

Amount in UK pounds	Number
40 - 100	3
350	1
500	4
700	1
1500	1
2400 - 2500	2
3000	1
4000	1
5000	2

6000	1
7000 - 7500	6
8000	3
10000	6
12000	1
15000	2
20000	1
30000	1
35000	1
40000	1
100000	1
unclear	2
Grand Total	42

The two largest proportionate responses to question 29 came from participants who thought their staff costs for regular inspection and maintenance of control measures were about £7000 to £7500 (6, 14.3%). A further 4 (9.5%) respondents stated that their staff costs were about £500. The greatest concentration of responses occurred from £7000 to £10000 (15, 35.7%).

Question 30. It was calculated in the 2017 PIR that it would cost £23,400 in cash costs per licence holder to carry out regular inspection and maintenance of control measures under Regulation 13. Based on your experience, how accurate is this figure?

Table 30

Response	Number
Much too high	5
Too high	6
About right	76
Too low	18
Much too low	2
Don't know / unsure	19
Grand Total	126

Most responses to question 30 (76, 60.3%) indicated that the estimated cash costs per licence holder in fulfilling the requirements of regulation 13 were 'about right'. The next highest proportion of responses (20, 15.9%) stated that the estimate was either 'too low' (18, 14.3%) or 'much too low' (2, 1.6%). The smallest proportionate response (11, 8.7%) contended that the estimate was either 'too high' (6, 4.8%) or 'much too high' (5, 4%).

Question 31. Can you please provide a general estimate of how much cash costs - in pounds (£) - would be spent per license holder to carry out regular inspection and maintenance of control measures? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 31

Amount in UK pounds	Number
100 - 1000	3
3000 - 5000	2
7200	1
10000	1
20000	1
28000	1
30000	5
35000	5
40000	5
50000	1
80000	1
unclear	5
Grand Total	31

The largest proportionate response to question 31 (15, 48.4%) came from participants estimating their cash costs of regular control and maintenance measures at £30,000 to £40,000. A further 3 respondents estimated their cash costs from £100 to £1000.

Question 32. Regulation 19 requires employers to arrange regular monitoring of airborne asbestos fibres and keep records of the results. It sets out how long the records should be kept and that they should be made available to employees, or the regulator as required. While Regulation 20 requires employers performing their own air testing to do it in a way that meets the criteria as set out in ISO 17025. It also requires employers to make sure that any person they engage to perform asbestos air testing and site clearance is competent and accredited by the appropriate accreditation body. It was calculated in the 2017 PIR that the cash costs of engaging someone to test the air is £400 per licensed job. Based on your experience, how accurate is this figure?

Table 32

Response	Number
Much too high	1
Too high	9
About right	69
Too low	32

Much too low	7
Don't know / unsure	6
Grand Total	124

The largest proportion of responses to question 32 (69, 55.7%) asserted that the estimated costs of asbestos-related air monitoring were 'about right'. A further 39 (31.5%) responses stated that the estimate was either 'too low' (32, 25.8%) or 'much too low' (7, 5.7%). There were another 10 (8.1%) responses from participants who thought the estimate was either 'too high' (9, 7.3%) or 'much too high' (1, 0.8%).

Question 33. Can you please provide a general estimate of how much - in pounds (£) - would the cash cost of engaging someone to test the air be per licensed job as required by Regulations 19 and 20? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 33

Amount in UK pounds	Number
40	1
185	1
200 - 250	6
315 - 350	3
375	1
450 - 500	12
550 - 600	11
750 - 800	5
1000	4
1200	1
1500	1
3500	1
4000	1
unclear	1
Grand Total	49

The largest proportionate response to question 33 was submitted by those estimating the cost of engaging air-testing specialists at £450 to £500 (12, 24.5%). Another 11 (22.5%) respondents estimated this cost at £550 to £600. There were 6 respondents who thought this cost them £200 to £250.

Question 34. Regulation 24 requires employers to make sure that asbestos and asbestos waste is properly packaged, labelled, stored and transported. It was calculated in the 2017 PIR that the cash costs of ensuring asbestos is properly packed, labelled, stored and transported is £1,200 per licensed job. Based on your experience, how accurate is this figure?

Table 34

Response	Number
Much too high	3
Too high	16
About right	69
Too low	19
Much too low	4
Don't know / unsure	13
Grand Total	124

The largest proportion of responses to question 34 (69, 55.7%) agreed that the estimates for the packaging, transportation and storage of asbestos were 'about right'. The next largest proportion of responses (23, 18.5%) contended that the estimate was either 'too low' (19, 15.3%) or 'much too low' (4, 3.2%). A further 19 (15.3%) responses asserted that the estimate was either 'too high' (16, 13%) or 'much too high' (3, 2.4%).

Question 35. Can you please provide a general estimate of how much - in pounds (£) - would the cash cost of ensuring asbestos is properly packed, labelled, stored and transported be per licensed job as required by Regulations 24? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 35

Amount in UK pounds	Number
40	1
100 - 135	2
200 - 250	3
300	1
400 - 450	4
500	5
600	1
800	2
900	1
975	1
1500	5

1800	1
2000 - 2500	10
3000	2
4000	1
7000	1
Grand Total	41

The largest proportionate response to question 35 came from 10 (24.4%) respondents who estimated that the cost of packaging, storing and transporting asbestos was £2000 to £2500 per licensed job. One group of 5 (12.2%) respondents thought that this cost them about £500, while another 5 (12.2%) respondents asserted that this cost them about £1500. The most notable concentration of responses (21, 51.2%) occurred between £40 and £1000.

2.2 Notifiable Non-Licensed Work (NNLW)

Question 36. Regulation 6 requires employers to carry out a risk assessment to identify the risks of exposure to asbestos. It sets out the requirement to record any significant findings and put in place steps to prevent, or reduce, exposure to employees. It was calculated in the 2017 PIR that it would take approximately 15 minutes to write this risk assessment. Based on your experience, how accurate is this figure?

Table 36

Response	Number
Too high	3
About right	21
Too low	20
Much too low	8
Don't know / unsure	2
Grand Total	54

In response to question 36, the highest proportion of respondents (28, 51.9%) thought that the estimated time to write a risk assessment in compliance with Regulation 6 was either 'too low' (20, 37%) or 'much too low' (8, 14.8%). A smaller proportion of respondents (21, 38.9%) stated that the estimate was 'about right', while a further 3 (5.6%) respondents thought the estimate 'too high'.

Question 37. Can you please provide a general estimate of how long it takes - in minutes - to write a risk assessment as required by Regulation 6? Please provide the answer in terms of whole minutes (e.g. 15 or 30 minutes, rather than 1/2 hour or 4.5 minutes).

Table 37

Time in minutes	Number
25	1
30	10
37	1
40 - 45	8
60	7
120	1
unclear	1
Grand Total	29

When asked to estimate the time taken to produce a written risk assessment in compliance with Regulation 6, most respondents (15, 51.7%) gave estimates of 40 to 60 minutes. There were 10 (34.5%) responses estimating about 30 minutes, while another 8 (27.6%) thought this task took them 40 to 45 minutes. A further 7 respondents thought they took about 60 minutes to produce a risk assessment.

Question 38. It was calculated in the 2017 PIR that the staff costs to write the risk assessment were £35 per hour. Based on your experience, how accurate is this figure?

Table 38

Response	Number
Too high	6
About right	32
Too low	7
Don't know / unsure	6
Grand Total	51

Most respondents to question 38 expressed the opinion that the estimated staff costs for writing a risk assessment were 'about right' (32, 62.8%). Smaller numbers of respondents thought that the estimate was 'too low' (7, 13.7%) or 'too high' (6, 11.8%).

Question 39. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for writing a risk assessment as required by Regulation 6? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 39

Amount in UK pounds	Number
15	1
20	1
25	3
40	1
45	1
50	3
80	1
100	1
400	1
Grand Total	13

Question 39 attracted very few responses, but there were 3 (23.1%) responses each, giving estimates of £25 and £50. Response incidence was 'grouped' into two sets of 5 (38.5%) responses each, giving estimates from £15 to £25, and from £40 to £50.

Question 40. It was calculated in the 2017 PIR that there would be 'other' costs associated with Regulation 6 for licensed work of £150 per job. Based on your experience, how accurate is this figure?

Table 40

Response	Number
About right	21
Too low	9
Much too low	6
Don't know / unsure	14
Grand Total	50

The largest proportion of responses to question 40 asserted that the estimate for 'other' costs for licensed work associated with regulation 6 was 'about right' (21, 42%). A smaller proportion of responses (15, 30%) stated that the estimate was either 'too low' (9, 18%) or 'much too low' (6, 12%).

Question 41. Can you please provide a general estimate of how much 'other' costs - in pounds - there is associated with Regulation 6 for licensed work? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds)

Table 41

Amount in UK pounds	Number
200 - 250	7
300	1
350	1
400	1
500	2
1500	1
2000	1
unclear	1
Grand Total	15

There were very few responses to question 41, but the largest proportionate response (7, 46.7%) declared 'other' costs associated with Regulation 6 from £200 to £250. Most (12, 80%) answers were grouped from £200 to £500.

Question 42. Regulation 7 requires employers to prepare a written plan before work on asbestos is carried out, including details of the work, and the appropriate actions to control risk and prevent harm. It was calculated in the 2017 PIR that it would take approximately 15 minutes to prepare a written plan before work on asbestos is carried out. Based on your experience, how accurate is this figure?

Table 42

Response	Number
Too high	1
About right	14
Too low	22
Much too low	10
Don't know / unsure	3
Grand Total	50

The greatest number of responses to question 42 (32, 64%) stated that the estimated time needed for producing a written asbestos work plan was either 'too low' ((22, 44%) or 'much too low' (10, 20%). There were 14 (28%) responses stating that the estimate was 'about right', and 1 (2%) further response asserting that it was 'too high'.

Question 43. NNLW. Can you please provide a general estimate of how long it takes - in minutes - to prepare a written plan before work on asbestos is carried out as required by Regulation 7? Please provide the answer in terms of whole minutes (e.g. 15 or 30 minutes, rather than 1/2 hour or 4.5 minutes).

Table 43

Time in minutes	Number
30	11
37	1
45	7
60	6
75	1
90	2
120	2
150	1
180	1
240	1
Grand Total	33

Respondents reporting that a written asbestos work plan took them about 30 minutes submitted the largest proportionate response (11, 33.3%). A further 7 (21.2%) reported taking 45 minutes to do this, while another 6 (18.2%) thought it took them about 60 minutes. The most significant grouping of responses occurred from 30 to 60 minutes (25, 75.8%)

Question 44. It was calculated in the 2017 PIR that the staff costs to prepare a written plan before work on asbestos is carried out were £23 per hour. Based on your experience, how accurate is this figure?

Table 44

Response	Number
Much too high	1
About right	21
Too low	17
Much too low	3
Don't know / unsure	8
Grand Total	50

Among the responses to question 44 the highest proportion (21, 42%) claimed that the estimated staff costs of preparing a written asbestos work plan was 'about right'. Almost as

many respondents (20, 40%) stated that the estimate was either 'too low' (17, 34%) or 'much too low' (3, 6%). Only 1 (2%) response asserted that the estimate was 'much too high'.

Question 45. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for preparing a written plan before work on asbestos is carried out as required by Regulation 7? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 45

Amount in UK pounds	Number
28	1
30	1
35	8
40	2
45	1
50	3
80	1
90	1
125	1
150	1
400	1
Grand Total	21

The largest proportionate response to question 45 (8, 38.1%) came from participants estimating their staff costs for writing an asbestos work plan at about £35. Another 3 (14.3%) reckoned these were about £50. Responses were most concentrated from £35 to £50 (14, 66.7%).

Question 46. It was calculated in the 2017 PIR that there would be cash costs associated with Regulation 7 for licensed work of £400 per job. Based on your experience, how accurate is this figure?

Table 46

Response	Number
Too high	3
About right	18
Too low	8
Much too low	4
Don't know / unsure	17
Grand Total	50

The highest proportion of responses to question 46 (18, 36%) reported that the estimated cash costs per job for licensed work in relation to regulation 7 were 'about right'. A further 12 (24%) responses stated that the estimate was either 'too low' (8, 16%) or 'much too low' (4, 8%), while 3 (6%) responses indicated that the estimate was 'too high'.

Question 47. Can you please provide a general estimate of how much cash costs - in pounds (£) - there is associated with Regulation 7 for licensed work? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 47

Amount in UK pounds	Number
90 - 95	2
150	1
500 - 550	5
1000	1
2000	1
4000	1
unclear	1
Grand Total	12

Responses to question 47 were most significantly grouped from £90 to £550 (8, 66.7%). There were 5 (41.7%) responses indicating that cash costs related to licenced work under Regulation 7 were from £500 to £550.

Question 48. Regulation 18 requires employers to make sure that areas where asbestos work is being carried out are separated, clearly marked, and restricted to those required to work in the area. It also requires the employer to provide suitable facilities for employees to eat and drink. It was calculated in the 2017 PIR that it would take approximately 15 minutes to identify and demarcate a suitable area. Based on your experience, how accurate is this figure?

Table 48

Response	Number
Too high	1
About right	27
Too low	12
Much too low	5
Don't know / unsure	3
Grand Total	48

The majority of responses to question 48 (27, 56.2%) indicated that the estimated time needed to fulfil the requirements of regulation 18 was 'about right'. Another 17 (35.4%) respondents

stated that this estimate was either 'too low' (12, 25%) or 'much too low' (5, 10.4%). Only 1 (2.1%) response asserted that the estimate was 'too high'.

Question 49. Can you please provide a general estimate of how long it takes - in minutes - to identify and demarcate a suitable area as required by Regulation 18? Please provide the answer in terms of whole minutes (e.g. 15 or 30 minutes, rather than 1/2 hour or 4.5 minutes).

Table 49

Time in minutes	Number
2	1
30	5
40 - 45	3
60	6
90	2
unclear	1
Grand Total	18

Most responses to question 49 on time taken to demarcate a suitable area in accordance with Regulation 18 (14, 77.8%) were grouped from 30 to 60 minutes. There were 6 (33.3%) respondents reporting that this takes them about 60 minutes, while another 5 (27.8%) thought this took them 30 minutes. A further 3 (16.7%) said this took them from 40 to 45 minutes

Question 50. It was calculated in the 2017 PIR that the staff costs to identify and demarcate suitable areas were £23 per hour. Based on your experience, how accurate is this figure?

Table 50

Response	Number
Too high	1
About right	26
Too low	14
Don't know / unsure	7
Grand Total	48

Of the responses to question 50, the highest proportion (26, 54.2%) indicated that the estimated staff costs of identifying and demarcating suitable areas were 'about right'. The next highest response group (14, 29.2%) thought that the estimate was 'too low', and 1 (2.1%) additional response stated that the estimate was 'too high'.

Question 51. Can you please provide a general estimate of how much - in pounds (£) - the staff costs are for identifying and demarcating suitable areas as required by Regulation 18? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 51

Amount in UK pounds	Number
27	1
30 - 35	6
40 - 45	3
50	2
90	1
150	1
Grand Total	14

When providing estimates for the staff costs of demarcating areas in accordance with Regulation 18, most (11, 78.6%) responses were concentrated from £30 to £50. There were 6 (42.9%) responses from participants who estimates their costs from £30 to £35, while a further 3 (21.4%) reckoned their costs from £40 to £45.

Question 52. It was calculated in the 2017 PIR that it would cost £1,000 per job for fencing and barriers in order to identify and demarcate suitable areas under Regulation 18. Based on your experience, how accurate is this figure?

Table 52

Response	Number
Much too high	1
Too high	9
About right	22
Too low	3
Don't know / unsure	11
Grand Total	46

Among the responses to question 52, the largest proportion (22, 47.8%) stated that they thought the estimated cost of £1000 for fencing and barriers to be 'about right'. There were 10 (21.7%) responses from participants who thought the estimate 'too high' (9, 19.6%) or 'much too high' (1, 2.2%). A further 3 (6.5%) responses asserted that the estimate was 'too low'.

Question 53. Can you please provide a general estimate of how much fencing and barriers would cost - in pounds (£) - in order to identify and demarcate suitable areas for licensed work under Regulation 18? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 53

Amount in UK pounds	Number
200	2
400	2
500	3
700 - 750	2
850	1
1200	1
1500	1
Grand Total	12

There were very few responses to question 53, but most (7, 58.3%) were concentrated from £200 to £500. The greatest proportionate response came from 3 (25%) respondents who estimated their fencing and barrier costs at about £500.

Question 54. Regulation 13 requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and RPE at suitable intervals and for records of examinations and tests to be kept for at least five years. It was calculated in the 2017 PIR that it would cost £5,000 in staff costs per licence holder for employers to carry out regular inspection and maintenance of control measures. Based on your experience, how accurate is this figure?

Table 54

Response	Number
Too high	7
About right	24
Too low	1
Don't know / unsure	12
Grand Total	44

The majority of responses to question 54 (24, 54.6%) asserted that the estimated staff costs of inspection and maintenance of control measures is 'about right'. A further 7 (15.9%) responses stated that the estimate was 'too high', while 1 (2.3%) responder felt this was 'too low'.

Question 55. Can you please provide a general estimate of how much - in pounds (£) - would the staff cost be per licence holder for employers to carry out regular inspection and maintenance of control measures as required by Regulation 13? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 55

Amount in UK pounds	Number
110	1
1000	1
2000	1
2500	3
3000	1
7000	1
Grand Total	8

Among the very low response to question 55, the highest proportion (3, 37.5%) of participants pointed to their staff costs per licence holder for regular inspection and maintenance being about £2500. Answers were most concentrated (5, 62.5%) from £2000 to £3000.

Question 56. It was calculated in the 2017 PIR that it would cost £23,400 in cash costs per license holder to carry out regular inspection and maintenance of control measures under Regulation 13. Based on your experience, how accurate is this figure?

Table 56

Response	Number
Much too high	1
Too high	5
About right	21
Too low	3
Don't know / unsure	13
Grand Total	43

The greatest proportion of responses to question 56 (21, 48.8%) expressed the opinion that the estimate for the cash costs of regular inspection and maintenance of control measures was 'about right'. A further 6 (14%) responses stated that the estimate was either 'too high' (5, 11.6%) or 'much too high' (1, 2.3%).

Question 57. Can you please provide a general estimate of how much cash costs - in pounds (£) - would be spent per licence holder to carry out regular inspection and maintenance of control measures? Please provide the answer in terms of whole pounds (e.g. 15 or 200, rather than £150.75 or 90 pounds).

Table 57

Amount in UK pounds	Number
150	1
4000	1
12500	1
15000	2
20000	2
40000	2
Grand Total	9

Due to the very low rate of response and the broad spread of answers to question 57, it is not possible to discern any meaningful patterns or trends in the resulting data.

Question 58. Regulation 19 requires employers to arrange regular monitoring of airborne asbestos fibres and keep records of the results. It sets out how long the records should be kept and that they should be made available to employees or the regulator as required. While Regulation 20 requires employers performing their own air testing to do it in a way that meets the criteria as set out in ISO 17025. It also requires employers to make sure that any person they engage to perform asbestos air testing and site clearance is competent and accredited by the appropriate accreditation body. It was calculated in the 2017 PIR that the cash costs of engaging someone to test the air is £400 per licensed job. Based on your experience, how accurate is this figure?

Table 58

Response	Number
Too high	3
About right	26
Too low	5
Much too low	1
Don't know / unsure	8
Grand Total	43

More than half of the responses to question 58 (26, 60.5%) stated that the estimated cash cost of air monitoring for asbestos was 'about right'. Another 6 (14%) responses asserted that the estimate was either 'too low' (5, 11.6%) or 'much too low' (1, 2.3%). There were 3 (7%) responses from participants who thought the estimate 'too high'.

Question 59. Can you please provide a general estimate of how much - in pounds (£) - would the cash cost of engaging someone to test the air be per licensed job as required by Regulations 19 and 20? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 4000p).

Table 59

Amount in UK pounds	Number
190	1
350	2
450	1
500	2
800	2
Grand Total	8

Question 59 attracted a low, broadly spread response. The most significant concentration of responses (3, 37.5%) occurred from £450 to £500.

Question 60. Regulation 24 requires employers to make sure that asbestos and asbestos waste is properly packaged, labelled, stored and transported. It was calculated in the 2017 PIR that the cash costs of ensuring asbestos is properly packed, labelled, stored and transported is £120 per job. Based on your experience, how accurate is this figure?

Table 60

Response	Number
About right	19
Too low	12
Much too low	4
Don't know / unsure	7
Grand Total	42

The largest proportion of responses to question 60 (19, 45.2%) stated that the estimated cash costs of packaging, storage and transportation of asbestos and asbestos waste were 'about right'. A slightly smaller proportion of responses (16, 38.1%) thought that the estimate was either 'too low' (12, 28.6%) or 'much too low' (4, 9.5%).

Question 61. Can you please provide a general estimate of how much - in pounds (£) - would the cash cost of ensuring asbestos is properly packed, labelled, stored and transported be per job as required by Regulations 24? Please provide the answer in terms of whole pounds (e.g. £20 or £40, rather than £20.50 or 400p).

Table 61

Amount in UK pounds	Number
150	1
200	1
250	2
400	2
unclear	9
Grand Total	15

The majority of respondents (9, 60%) were 'unclear', therefore it is not possible to discern any meaningful patterns in the response data, other than all respondents' assessments being over the original estimate.

2.3 Non-Notifiable Work

Question 62. New entrants 'awareness-raising' training. An online training course for asbestos awareness will have to be undertaken by all workers who could come into contact with asbestos. It was calculated in the 2017 PIR that the cost of an online training course for asbestos awareness is £25. Based on your experience, how accurate is this figure?

Table 62

Response	Number
Much too high	4
Too high	13
About right	87
Too low	18
Much too low	5
Don't know / unsure	15
Grand Total	142

Most responses (87, 61.3%) agreed that the cost of an online asbestos awareness course for new starters was 'about right'. There were 23 (16.2%) responses stating that the cost was either 'too low' (18, 12.7%) or 'much too low' (5, 3.5%). A further 17 (12%) responses asserted that the cost was either 'too high' (13, 9.1%) or 'much too high' (4, 2.8%).

Question 63. Can you please provide a general estimate of how much - in pounds (£) - the cost of an online training course for asbestos awareness is? Please provide the answer in terms of whole pounds (e.g. 25 or 40, rather than £26.75 or 90 pounds).

Table 63

Amount in UK pounds	Number
0	3
10	2
15 -17	3
20 - 25	6
35	1
40 - 45	6
50	5
60	1
72 - 75	3
85	1
95	3
125	1
unclear	1
Grand Total	36

Responses to question 63 were most concentrated (21, 58.3%) from £15 to £50. There were 6 (16.7%) respondents who estimated the cost of an online training course for asbestos awareness from £20 to £25, and another 6 (16.7%) estimated this to be £40 to £45. A further 5 (13.9%) estimated the cost of this course to be about £50.

Question 64. New entrants' full asbestos course. For those workers who disturb asbestos they will have to undertake a detailed "working with asbestos" course. It was calculated in the 2017 PIR that the cost of a detailed "working with asbestos" course will be £300 per course. Based on your experience, how accurate is this figure?

Table 64

Response	Number
Much too high	9
Too high	30
About right	61
Too low	7
Much too low	1
Don't know / unsure	32

Grand Total	140
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The largest proportion of responses to question 64 (61, 43.6%) agreed that the cost of a new entrant's "working with asbestos" course was 'about right'. The next largest proportion of responses (39, 27.9%) were those who thought the cost either 'too high' (30, 21.4%) or 'much too high' (9, 6.4%). The smallest proportion of responses (8, 5.7%) came from those who thought the cost either 'too low' (7, 5%) or 'much too low' (1, 0.7%).

Question 65. Can you please provide a general estimate of how much - in pounds (£) - the cost of a more detailed "working with asbestos"™ course is? Please provide the answer in terms of whole pounds (e.g., 25 or 40, rather than £26.75 or 90 pounds).

Table 65

Amount in UK pounds	Number
0	2
20	1
30 - 35	2
50 - 60	4
100 - 117	5
150	7
170 - 180	4
199 - 200	5
250 - 255	5
375 - 400	3
450	2
600	1
800	1
900	1
Grand Total	43

Responses to question 65 were most concentrated between £50 and £255 (30, 69.8%). The most popular response was £150 (7, 16.3%), followed by £199 to £200 (5, 11.6%) and £250 to £255 (5, 11.6%).

Question 66. Refresher asbestos training. For those workers who have already undertaken some sort of asbestos handling course, they will need to undertake an annual refresher course. It was calculated in the 2017 PIR that it would take 2 hours a year to undertake asbestos handling refresher training. Based on your experience, how accurate is this figure?

Table 66

Response	Number
Much too high	3
Too high	8
About right	84
Too low	22
Much too low	5
Don't know / unsure	15
Grand Total	137

The largest response to question 66 came from participants who thought that the estimated time needed to undertake annual refresher courses was 'about right' (84, 61.3%). The next largest response group (27, 19.7%) asserted that the estimate was either 'too low' (22, 16.1%) or 'much too low' (5, 3.6%). A smaller group of responses (11, 8%) stated that the estimate was either 'too high' (8, 5.8%), or 'much too high' (3, 2.2%).

Question 67. Can you please provide a general estimate of how long it takes - in minutes - to undertake refresher asbestos handling training per year? Please provide the answer in terms of whole minutes (e.g. 15 or 30, rather than 1/2 hour or 4.5 minutes).

Table 67

Time in minutes	Number
30	1
40 - 45	2
50 - 60	4
90	1
180	5
200	1
210	1
240	13
300	1
360	1
480	3
unclear	5

Grand Total	38
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The highest proportionate response to question 67 (13, 34.2%) came from those estimating that asbestos handling training took them about 240 minutes per year. A further 5 (13.2%) respondents thought this took them 180 minutes, and another 4 (10.5%) said this took them 50 to 60 minutes.

Question 68. Undertaking and writing up risk assessments. It was calculated in the 2017 PIR that the cost of undertaking and writing up risk assessments was £7 per risk assessment. Based on your experience, how accurate is this figure?

Table 68

Response	Number
Much too high	1
About right	44
Too low	47
Much too low	15
Don't know / unsure	29
Grand Total	136

The largest proportion of responses to question 68 (62, 45.6%) indicate that the cost of undertaking and writing up a risk assessment is either 'too low' (47, 34.6%), or 'much too low' (15, 11%). The next largest group of respondents (44, 32.3%) thought that the figure was 'about right', while 1 (0.7%) response stated that the cost was 'much too high'.

Question 69. Can you please provide a general estimate of how much - in pounds (£) - the cost of undertaking and writing up a risk assessment is per risk assessment? Please provide the answer in terms of whole pounds (e.g. 25 or 40, rather than £26.75 or 90 pounds).

Table 69

Amount in UK pounds	Number
2	1
15	6
20 - 25	10
30 - 35	12
40 - 45	5
50	12
60	1
75	4
90	1

100	3
120	1
150	2
260	1
300	1
400	1
1000	1
Grand Total	62

Responses to question 69 were most closely grouped from £15 to £50 (45, 72.6%). There were 12 (19.6%) respondents who thought that the cost of writing a risk assessment was from £30 to £35, and a further 12 (19.6%) who estimated this cost at £50. There were 10 (16.1%) respondents who thought this cost £20 to £25.

Question 70. The control measures for tasks which involve asbestos for non-notifiable work often involve the use of Respiratory Protective Equipment (RPE) and dust sheets / baggage. It was calculated in the 2017 PIR that the cost of a full asbestos protection kit is £47.40. Based on your experience, how accurate is this figure?

Table 70

Response	Number
Much too high	2
Too high	9
About right	68
Too low	28
Much too low	6
Don't know / unsure	22
Grand Total	135

Just over half of the responses to question 70 (68, 50.4%) agreed that the cost of a full asbestos protection kit was 'about right'. The next largest response group (34, 25.2%) thought that the cost was either 'too low' (28, 20.7%) or 'much too low' (6, 4.4%). There were 11 (8.1%) responses asserting that the cost was either 'too high' (9, 6.7) or 'much too high' (2, 1.5%).

Question 71. Can you please provide a general estimate of how much - in pounds (£) - the cost of a full asbestos protection kit is? Please provide the answer in terms of whole pounds (e.g. 25 or 40, rather than £26.75 or 90 pounds).

Table 71

Amount in UK pounds	Number
0	1
8	1
10 - 16	4
25 - 30	2
49 - 55	2
60 - 65	7
70 - 75	5
80 - 85	4
90	1
100	7
110	1
120	1
150	2
200	1
250	1
425	1
unclear	1
Grand Total	42

The highest concentration of responses to question 71 was from £60 to £100 (24, 57.1%). There were 7 (16.7%) respondents who estimated that a full asbestos protection kit cost them from £60 to £65. Another 7 (16.7%) thought this kit would cost about £100, while a further 5 (11.9%) thought this would cost from £70 to £75.

Question 72. The control measures for tasks which involve asbestos for non-notifiable work often involve the use of Respiratory Protective Equipment (RPE) and dust sheets / baggage - referred to as “full asbestos protection kit” in the 2017 PIR (see paragraph 143, page 42). It was calculated in the 2017 PIR that only 1 worker per project will be involved in wearing/using a full asbestos protection kit. Based on your experience, how accurate is this figure?

Table 72

Response	Number
Too high	3
About right	42
Too low	61
Much too low	7
Don't know / unsure	19
Grand Total	132

A majority (68, 51.5%) of responses to question 72 stated that the estimated number of workers per project requiring “full asbestos protection kit” was either ‘too low’ (61, 46.2%) or ‘much too low’ (7, 5.3%). A smaller proportion of responses (42, 31.8%) indicated that the estimate was ‘about right’, while a further 3 (2.3%) responses asserted that the estimate was ‘too high’.

Question 73. Can you please provide a general estimate of how many workers per project would wear/use a full asbestos protection kit? Please provide the answer in terms of whole numbers (e.g. 1 or 5, rather than 2.5 or three staff).

Table 73

Number of workers per project using full asbestos protection kit	Number
0	1
2	52
3	7
4	3
5	3
unclear	2
Grand Total	68

When asked to estimate how many workers per project used full asbestos protection kit, most respondents (52, 76.5%) reported that 2 workers did so. A further 7 (10.3%) reported that 3 workers used full protection kit per project.

2.4 Duty to Manage

Question 74. Regulation 4 is the duty to manage asbestos in non-domestic premises. Dutyholders are required to find out if there is asbestos in the premises, its location and what condition it is in. If there is asbestos present, they must make a record of the location and condition of the asbestos, assess the risk from it, and prepare a plan that sets out in detail how they are going to manage the risk from this material. They must also set up a system for providing information on the location and condition of the material to anyone who is liable to work on or disturb it. In what context do YOU manage asbestos in non-domestic premises? (If you manage asbestos in a number of different contexts, please indicate which ONE forms the main basis of your work).

Table 74

Row Labels	Number
Don't know / unsure	10
Hospital(s)	27
Large company (250+ employees) managing industrial buildings (e.g. large chain of supermarkets)	148
Local authority (LA)	121
Micro company (9 employees or fewer) managing industrial buildings	13
Other (please specify)	105
School(s)	56
Small to medium-sized company (10 to 249 employees) managing industrial buildings	126
Grand Total	606

The largest proportionate response to question 74 was from respondents engaged in non-domestic asbestos management in large companies with more than 250 employees (148, 24.4%). There were 126 (20.8%) respondents who reported managing asbestos in small to medium-sized companies, while 121 (20%) respondents stated that they managed asbestos within a local authority. 'Other' responses were submitted by 105 (17.3%) respondents. Their more specific answers are examined in question 74a, below.

Question 74a. Other (please specify).

Table 74a

Context	Number
Agricultural	3
Airport	1
Charity	2
Church buildings	1
Community buildings	2

Construction/demolition	5
Consultant - varied	11
Contractor	1
Elder/social care setting	3
Fire service premises	1
Healthcare setting	3
Heritage site	4
Holiday resort	1
Large company (250+ employees) managing industrial buildings (e.g. Large chain of supermarkets)	5
Licensed premises	1
Local authority (LA)	1
Ministry of Defence (MOD)	2
Ministry of Justice (MOJ)	1
N/a	1
Police premises	1
Private landlord	1
Railway	2
School(s)	1
Small to medium-sized company (10 to 249 employees) managing industrial buildings	1
Social landlord	23
Trade association	1
Unclear	6
Underground communications network	1
University/college	19
Grand Total	105

Respondents giving 'other' responses to question 74 used question 74a to give more detailed answers. The largest proportion (23, 21.9%) reported managing asbestos either as or on behalf of social landlords, while another 19 (18.1%) stated that they managed asbestos in universities or colleges. A further 11 (10.5%) asserted that they were consultants managing asbestos in varied premises.

Question 75. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that schools spend one full day a year on asbestos management. Based on your experience, how accurate is this figure?

Table 75

Response	Number
Much too high	2
Too high	6
About right	16
Too low	15
Much too low	16
Don't know / unsure	4
Grand Total	59

The largest group of responses to question 75 (31, 52.5%) came from respondents who thought the estimate for time spent managing asbestos in schools was either 'too low' (15, 25.4%) or 'much too low' (16, 27.1%). A further 16 (27.1%) responses stated that the estimate was 'about right'. The smallest group of responses (8, 13.6%) was from those asserting that the estimate was either 'too high' (6, 10.2%) or 'much too high' (2, 3.4%).

Question 76. Can you please provide a general estimate of how long - in days - is spent on asbestos management in a school in a year? Please provide the answer in terms of whole days (e.g. 1 or 12, rather than 1/2 day, 2.5 days or 72 hours).

Table 76

Number of days spent on asbestos management in a school per year	Number
0 – 0.5	5
1 – 1.5	2
2 – 2.5	3
3	5
4	1
5	9
7	1
9	1
10 - 15	4
20 - 25	3
90	1
100	1
unclear	1

Grand Total	37
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The greatest proportionate response to question 76 came from participants stating that they spent 5 days per year managing asbestos in schools (9, 24.3%). A further 5 (13.5%) reported spending 3 days per year doing this, while another 5 (13.5%) claimed that they spent from 0 to 0.5 days per year managing asbestos in schools. Responses were most concentrated from 0 to 5 days (25, 67.6%).

Question 77. Duty to manage. In schools, in your experience, who has responsibility for managing asbestos? (If multiple people are involved, please indicate the position of the ONE person who does most of the work).

Table 77

Response	Number
Caretaker	14
Head teacher	12
Other (please specify)	29
Other teacher	1
Grand Total	56

Most participants submitted 'other' responses to question 77 (29, 51.8%) – these will be considered in more detail in question 77a, below. The next highest proportionate response (14, 25%) stated that the school caretaker was responsible for managing asbestos, while a further 12 (21.4%) respondents thought this was the responsibility of the head teacher.

Question 77a. Other (please specify)

Table 77a

Title Of Person Responsible For Asbestos Management	Number
Asbestos Manager	2
Assistant Principal	1
Business Manager	1
Estates Manager/Director	4
Facilities Manager	6
Governor	1
Head Of Operations	1
Head Teacher	1
Premises/Site Manager	9
Responsible Body	1
Service Provider	1

Unclear	1
Grand Total	29

Of the 'other' answers submitted to question 77, the largest proportion (9, 31%) came from those who thought that the premises/site manager was responsible for the management of asbestos in schools. A further 6 (20.7%) respondents thought that the facilities manager was the responsible person, while another 4 (13.8%) opined that this was the estates manager/director.

Question 78. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that local authorities (LAs) have in-house maintenance departments with two full-time members of staff tasked with managing asbestos across their estate. Based on your experience, how accurate is this figure?

Table 78

Response	Number
Much too high	8
Too high	20
About right	50
Too low	29
Much too low	4
Don't know / unsure	9
Grand Total	120

The highest proportion of responses to question 78 agreed that the estimated number of Local Authority staff engaged in asbestos management was 'about right' (50, 41.7%). A further 33 (27.5%) respondents felt that the estimate was either 'too low' (29, 24.2%) or 'much too low' (4, 3.3%). A smaller proportion of responses (28, 23.3%) asserted that the estimate was either 'too high' (20, 16.7%) or 'much too high' (8, 6.7%).

Question 79. Can you please provide a general estimate of how many full-time members of staff do local authorities have tasked with managing asbestos across their estate?

Table 79

Number of LA full-time staff members managing asbestos	Number
0	4
0.25	1
0.5 – 0.75	4
1	20
2	8

3	12
4	4
5	1
6	1
11	2
unclear	1
unknown	1
Grand Total	59

The largest proportion of respondents to question 79 (20, 33.9%) estimated that local authorities have 1 full-time member of staff managing asbestos. Another 12 (20.3%) thought local authorities have 3 full-time staff charged with asbestos management, while a further 8 (13.6%) reckoned that there would be 2 such staff. Responses were most densely grouped between estimates of 1 to 3 full-time staff members (40, 67.8%).

Question 80. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that about 10% of a health and safety officer's time in hospitals were spent managing asbestos. Based on your experience, how accurate is this figure?

Table 80

Response	Number
Much too high	1
Too high	4
About right	7
Too low	7
Much too low	5
Don't know / unsure	3
Grand Total	27

The largest proportion of responses to question 80 (12, 44.4%) asserted that the estimated portion of a hospital health and safety officer's time spent managing asbestos was either 'too low' (7, 26%) or 'much too low' (5, 18.5%). Another 7 (26%) responses stated that the estimate was 'about right'. A smaller proportion of responses (5, 11.1%) indicated that the estimate was either 'too high' (4, 14.8%) or 'much too high' (1, 3.7%).

Question 81. Can you please provide a general estimate of what percentage (%) of a health and safety officer's time in a hospital is spent managing asbestos? Please provide the answer in terms of a whole percentage (e.g. 15 or 20, rather than 25.5% or 10 per cent).

Table 81

% of hospital H&S officer time spent managing asbestos	Number
3	1
5	3
7	1
17	1
20	2
22	1
30	1
40	1
50	1
60	1
80	1
100	2
n/a	1
Grand Total	17

Question 81 drew very few responses, probably because of its specialised topic. Consequently, it is hard to draw reliable conclusions from such a small set of data. Most (9, 53 %) responses were grouped from 1% to 22% of a hospital health and safety officer's time. The most popular response was 5%, with 3 (17.6%) responses.

Question 82. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that about 10% of a health and safety officer's time in large companies (250+ employees) (e.g. large chain of supermarkets) was spent managing asbestos. Based on your experience, how accurate is this figure?

Table 82

Response	Number
Much too high	11
Too high	49
About right	50
Too low	23
Much too low	9

Don't know / unsure	4
Grand Total	146

The largest proportion of responses to question 82 (60, 41.1%) indicated that the estimated proportion of health and safety officers' time spent on managing asbestos in large companies was either 'too high' (49, 33.6%) or 'much too high' (11, 7.5%). A smaller proportion of responses (50, 34.3%) asserted that the estimate was 'about right'. A further 32 (21.9%) responses stated that the estimate was either 'too low' (23, 15.7%) or 'much too low' (9, 6.2%).

Question 83. Can you please provide a general estimate of what percentage (%) of a health and safety officer's time in a large company is spent managing asbestos? Please provide the answer in terms of a whole percentage (e.g. 15 or 20, rather than 25.5% or 10 per cent).

Table 83

% of large company H&S officer time spent managing asbestos	Number
1	5
2	9
3	2
5	36
6 - 10	5
15 - 20	11
25 - 30	6
35 - 40	3
45 - 50	4
70 - 75	2
100	4
unknown	2
Grand Total	89

Most answers to question 83 were concentrated from 1% to 20% (68, 76.4%) of a large company health and safety officer's time. The most popular responses were 5% (36, 40.5%), 15 to 20% (11, 12.4%) and 2% (9, 10.1%).

Question 84. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that for a small to medium-sized business (10 to 249 employees) it will take a health and safety officer one full day a year to manage asbestos for the company. Based on your experience, how accurate is this figure?

Table 84

Response	Number
Much too high	2
Too high	8
About right	47
Too low	46
Much too low	19
Don't know / unsure	4
Grand Total	126

The highest proportion of responses to question 84 (65, 51.6%) indicated that the estimate for health and safety officers' time spent on managing asbestos in small to medium companies was either 'too low' (46, 36.5%) or 'much too low' (19, 15.1%). A smaller proportion of responses (47, 37.3%) stated that the estimate was 'about right', while a further 10 (7.9%) responses opined that the estimate was either 'too high' (8, 6.3%) or 'much too high' (2, 1.6%).

Question 85. Can you please provide a general estimate of how long - in days - is spent on asbestos management in a small to medium-sized company (10 to 249 employees) a year? Please provide the answer in terms of whole days (e.g. 1 or 20, rather than 1/2 day or 72 hours).

Table 85

Number of days spent managing asbestos in small to medium company	Number
0.5 - 1	7
2 – 2.5	6
3 – 3.5	19
4	4
5	15
6	1
7 – 7.5	3
10	5
15	2
20	1
25	2

30	2
40	1
52	1
60	1
200	1
300	1
unclear	3
Grand Total	75

The responses to question 85 were most concentrated from 3 to 5 days (38, 50.7%) spent managing asbestos in a small company. The most popular answers were, proportionately; 3 to 3.5 days (19, 25.3%), 5 days (15, 20%) and 0.5 to 1 day (7, 9.3%).

Question 86. Regulation 4 is the duty to manage asbestos in non-domestic premises. It was calculated in the 2017 PIR that for a micro business (9 people or fewer employees) it will take a health and safety officer one hour a year to manage asbestos for the company. Based on your experience, how accurate is this figure?

Table 86

Response	Number
About right	4
Too low	7
Much too low	1
Don't know / unsure	1
Grand Total	13

Of the small number of responses to question 86, the largest proportion of responses (8, 61.6%) were of the opinion that the estimate for time spent by health and safety officers managing asbestos in micro businesses was either 'too low' (7, 53.9%) or 'much too low' (1, 7.7%). A further 4 (30.8%) respondents thought the estimate was 'about right'.

Question 87. Can you please provide a general estimate of how long - in hours - is spent on asbestos management in a micro company (9 people or fewer employees) a year? Please provide the answer in terms of whole hours (e.g. 1 or 4, rather than 90 minutes or 2.5 hours).

Table 87

Number of hours spent managing asbestos in micro company	Number
2 – 2.5	2
4	1
8	1

20	1
26	1
78	1
unclear	1
Grand Total	8

There was such a low rate of response to question 87 that it is difficult to extrapolate robust conclusions. Responses were most densely grouped from 2 to 8 hours (4, 50%) spent managing asbestos in a micro company. The only amount of time with more than 1 response was 2 to 2.5 hours (2, 25%).

Section 3: Other costs, benefits, negatives, and unintended consequences

Question 88. Have there been any other costs as part of CAR 2012?

Table 88

Yes/No	Number
N/A	102
No	297
Yes	385
Grand Total	784

Responses to question 88 were initially categorised simply in terms of 'yes' and 'no', and 'not applicable' or unclear answers. The largest proportion of responses (385, 49.1%) asserted that 'yes', CAR 2012 had incurred other cost for their organisation. A further 297 (37.9%) respondents stated that 'no', there had been no other costs. The responses to question 88 were then analysed qualitatively and classified according to the theme of any other costs. The results of this exercise are shown in table 88a, below.

Table 88a

Cost Theme	Number
Added Management Costs	12
Administration	13
Cleaning	2
Consultants	3
Contractor Costs	9
Delays Due To Lack Of Understanding	3
Design Costs	2
Don't Know	28
Duty To Manage	17
Encapsulation	3

Environment/Waste Disposal	20
Equipment	5
Fly Tipping	2
Increased Illness/Deaths	6
Increased Removal Costs	26
Insurance	3
IT	8
Legal Costs	1
Licence/Accreditation	6
Medical/Health Surveillance	9
More Stringent Controls	2
N/A	41
No	296
Other Fire Rated Materials	1
PPE	11
Reviews	7
Risk Assessments	1
Surveys	72
Testing	4
Time	21
Training	81
Unclear	35
Yes	34
Grand Total	784

When 'other' costs were examined thematically in order to ascertain their nature, it became clear that the highest proportion of respondents apportioned them to 'training' (81, 10.3%), to having to undertake more 'surveys' (72, 9.2%), and 'increased removal costs' associated with asbestos and asbestos containing materials (26, 3.3%).

Question 89. Have there been any benefits as part of CAR 2012?

Table 89

Theme	Number
ACM removal/Management	9
Asbestos Register	2
Awareness Training	70
Better Protection	93
Better Quality Work	1
Clarified Responsibilities	32
Clearer Guidance	61
Coherent Framework	26
Defines Non/Licensed Works	15
Demand For Consultants	1

Don't Know	25
Duty To Manage	33
Encourages Technological Advance	3
Enhanced Controls	17
Explicable To Clients	14
Greater Understanding of Risks	47
Improved Compliance	19
Improved Industry Standards	7
More Surveys	1
N/A	21
No	130
Reassurance	1
Reduced Costs	2
Relevant Surveys	10
Risk Assessment	1
Stronger Regulation	25
Tax Relief	1
Testing	1
Unclear	26
Yes	69
Grand Total	763

In response to question 89, the largest proportion of respondents simply answered 'no' (130, 17.05%), there had not been any benefits arising from CAR 2012. A further 69 (9.05%) respondents stated 'yes', there were benefits, but gave no further details about their nature. There were 93 (12.2%) respondents who thought that CAR 2012 had resulted in 'better protection' from the risks of asbestos exposure for workers and members of the public. Another 70 (9.2%) responses mentioned increased 'awareness training' in the industry, while 61 (8%) respondents stated that they felt the main benefit had been 'clearer guidance'.

Question 90. Have there been any negatives as part of CAR 2012?

Table 90

Theme	Number
Abolish 1 Day Removals	1
Survey Concerns – Accreditation, Adequacy, Costs	13
ACMs, Textured Coating Concerns	12
Asbestos Register	1
Car soil CAR-SOIL Requirements*	5
Clarify Guidance/Regulations	35

Confusion About Responsibilities	21
Consultants Over-Specify Works	1
Costs	30
Date Confusion	1
Deliberate Misinterpretation	5
Doesn't Cover Historical Works	2
Domestic Settings Problematic	11
Don't Know	22
Duty To Manage Unclear	4
Extra Admin	5
Fee For Intervention	1
Insufficient LA Funding	2
Labour Agencies Unaccredited	1
Lack Of Awareness	19
Lack Of Enforcement	15
Legislation Too Weak	5
Licenced Contractors Only	1
N/A	29
Need For Training	12
NNLW Unclear	41
No	366
Not Enough Compliance	16
Update Regulations/Sync to Other Regs	5
Notification Period	1
Open Access Harmful	1
Over Regulation	4
PPE	2
Prioritise Removal	5

Results Unclear	1
RIDDOR Reporting	1
Schools/Public Buildings	2
SMEs Present Risk	5
Support For Dutyholders	1
Technological Improvements Needed	1
Time Delays	9
Too Much Training	5
Unclear	6
Unregulated Testing	1
Waste/Fly Tipping	5
Worker Classification	1
Yes	22
Grand Total	755

*CAR-SOIL – Control of Asbestos Regulations 2012: Interpretation for managing and working with asbestos in soil and construction and demolition materials: Industry guidance.

Source: Contaminated Land; Application in Real Environments (CL:AIRE) 2016 – www.claire.co.uk/asbestos

The response to question 90 was substantial and highly varied, as may be seen in the thematic analysis shown in Table 90 (above). There were 366 (48.5%) answers from participants who thought that there were ‘no’ negatives resulting from CAR 2012. A further 22 (2.9%) respondents simply answered ‘yes’, that there were negatives, but gave no further details. Another 41 (5.4%) participants thought that the regulations around NNLW were unclear, similarly another 35 (4.6%) respondents thought the regulations and guidance were unclear but gave no specific details. A further 30 (4%) respondents felt that extra costs had resulted from the introduction of CAR 2012.

Question 91. Have there been any unintended consequences (positive or negative) due to CAR 2012? (Unintended consequences are outcomes which were not intended, expected or foreseen when the change was made. For example, the inventor of the car could not have anticipated air pollution or congestion being a result of their invention).

Table 91

Response Theme	Number
Access Problems	2
Accreditation For Contractors	1

ACM Concerns	4
Admin	1
Alternative Materials	2
Asbestos Knowledge Deficient	11
Bigger Workload	1
Clarify Guidance/Regs	18
Coherent Standards	4
Common Sense Approach Needed	1
Contractor Costs	2
Costs Increased (Including Training, Asbestos Removal, Etc)	20
Deliberate Misinterpretation	3
Domestic Surveys	1
Don't Know	32
Environmental Concerns	4
Groundwork Industry Neglected	2
Health Screening	1
Improved Work	2
Inadequate Surveys	8
Industry Need Improving	1
Insufficient Compliance	8
Insurance Issues	1
IT	1
Local Authority Costs Increased	1
Lack Of Enforcement/Weak Legislation	7
Lacks Domestic Coverage	5
Licensed Removers Only	3
Lower Costs	1
Maintenance Issues	1

N/A	38
Need For Training	3
NNLW Unclear	11
No	345
Notice Period Too Long	2
Out Of Sync With Related Legislation	1
Over Reliance On PPE	1
Poorer Asbestos Management	14
PPE Shortages	1
Programme Of Removal	1
Promotes Awareness	14
Regulations Onerous	1
Risk Aversity	1
School Buildings Risk	3
Specify Responsibility	8
Survey Costs	1
Time/Delays	5
Too Much Training	1
Unaccredited Surveys	1
Unclear	15
Unregulated Testing	1
Waste Disposal/Illegal Dumping	18
Worker Classification	1
Yes	14
Grand Total	650

Question 91 attracted a large response; most respondents (345, 53.1%) asserted that there had been no unintended consequences of the introduction of CAR 2012. A further 14 respondents answered 'yes' but gave no detail on what these consequences were. Most detailed responses discussed negative consequences; the themes of these responses were

numerous and varied (please see table 91, above), but some small areas of consistency emerged. For instance, 20 (3.1%) respondents stated that their costs had increased due to an increased need for staff training and increased asbestos removal costs. On a related topic, 18 (2.8%) respondents thought that the increased cost of disposing of waste asbestos had led to an increase in illegal dumping. A further 18 (2.8%) respondents stated that the CAR 2012 regulations and/or guidance required additional clarification. Not all detailed responses were negative; 14 (2.1%) respondents felt that the introduction of CAR 2012 had brought about an increase in asbestos awareness.

Section 4: Recommendations from the Previous PIR in 2017

Question 92. In terms of recommendation 1, a new edition of HSE’s guidance *Asbestos Essentials* was issued which provided greater clarity around the distinction between licensable, non-licensable and notifiable work with asbestos (see <https://www.hse.gov.uk/asbestos/essentials/>). Are you aware of this new edition of HSE's asbestos guidance?

Table 92

Response	Number
Yes	776
No	203
Don't know / unsure	59
Grand Total	1038

In response to question 92, most respondents (776, 74.8%) indicated that they were aware of the new edition of HSE’s *Asbestos Essentials* guidance. There were 203 (19.6%) responses from those stating that they were not aware of the new guidance, while 59 (5.7%) submitted a ‘don’t know’ response.

Question 93. Have you used the new edition of HSE’s guidance ‘*Asbestos Essentials*’?

Table 93

Response	Number
Yes	636
No	351
Don't know / unsure	46
Grand Total	1033

Most respondents (636, 61.6%) to question 93 asserted that they had used the new edition of HSE’s *Asbestos Essentials* guidance. A smaller proportion (351, 34%) stated that they had not done so, while a further 46 (4.4%) gave a ‘don’t know’ answer.

Question 94. How helpful did you find the new edition of HSE’s guidance 'Asbestos Essentials'?

Table 94

Response	Number
Extremely helpful	173
Very helpful	343
Somewhat helpful	216
Not so helpful	14
Not at all helpful	7
Don't know / unsure	274
Grand Total	1027

Most of the respondents to question 94 (516, 50.2%) reported finding the Asbestos Essentials guidance either ‘very helpful’ (343, 33.4%) or ‘extremely helpful’ (173, 16.8%). Only 21 (2%) respondents indicated that they found the guidance either ‘not so helpful’ (14, 1.4%) or ‘not at all helpful’ (7, 0.7%).

Question 95. In terms of recommendation 2, the Asbestos pages on HSE's website were redesigned (including the 'duty to manage' section) (see <https://www.hse.gov.uk/asbestos/duty.htm>) and the 'duty to manage' flowcharts used in IOSH's 'No time to Lose' campaign were amended (see <https://www.notimetolose.org.uk/wp-content/uploads/2019/01/CD0080-NTTL-DutytoManage-UK-A4.pdf>). Are you aware of one, or both, of these guidance documents?

Table 95

Response	Number
Yes	724
No	223
Don't know / unsure	63
Grand Total	1010

A significant majority of respondents (724, 71.7%) to question 95 indicated that they were aware of either one, or both, of the guidance documents mentioned in the question. A further 223 (22.1%) respondents stated that they were not aware of the documents, while 63 (6.2%) submitted ‘don’t know’ answers.

Question 96. Have you used the revised 'duty to manage' section on the Asbestos pages of HSE's website?

Table 96

Response	Number
Yes	465
No	232
Don't know / unsure	26
Grand Total	723

Most respondents to question 96 (465, 64.3%) stated that they had used the revised 'duty to manage' section of HSE's Asbestos webpages. A further 232 (32.1%) said that they had not, while 26 (3.6%) respondents gave 'don't know' answers.

Question 97. How helpful did you find the revised 'duty to manage' section on the Asbestos pages of HSE's website?

Table 97

Response	Number
Extremely helpful	87
Very helpful	218
Somewhat helpful	146
Not so helpful	8
Not at all helpful	2
Grand Total	461

Most respondents to question 97 (305, 66.2%) claimed that they had found the revised 'duty to manage' section of HSE's asbestos webpages either 'very helpful' (218, 47.3%) or 'extremely helpful' (87, 18.9%). Only 10 respondents (2.2%) gave entirely negative responses, reporting that they had found the 'duty to manage' webpages either 'not so helpful' (8, 1.7%) or 'not at all helpful' (2, 0.4%).

Question 98. Have you used the amended 'duty to manage' flowchart from IOSH's 'No time to Lose' campaign website?

Table 98

Response	Number
Yes	202
No	488
Don't know / unsure	27
Grand Total	717

Most respondents to question 98 (488, 68.1%) indicated that they had not used the amended 'duty to manage' flowchart from the IOSH 'no time to lose' website. There were 202 (28.2%) responses from those who said that they had, and a further 27 (3.8%) respondents gave 'don't know' answers.

Question 99. How helpful did you find the amended 'duty to manage' flowchart from IOSH's 'No time to Lose' campaign website?

Table 99

Response	Number
Extremely helpful	53
Very helpful	84
Somewhat helpful	56
Not so helpful	5
Not at all helpful	2
Don't know / unsure	2
Grand Total	202

Most of the respondents to question 99 (137, 67.8%) were positive about their experience of using the amended 'duty to manage' flowchart, reporting that it was either 'very helpful' (84, 41.6%) or 'extremely helpful' (53, 26.2%). Only 7 (3.5%) respondents indicated that the flowchart was either 'not so helpful' (5, 2.5%) or 'not at all helpful' (2, 1%).

Question 100. In terms of recommendation 3, revised guidance was produced by HSE in September 2017 providing examples around 'plans of work' required under CAR 2012; this guidance can be found at <https://www.hse.gov.uk/pubns/guidance/em0.pdf>. The help-sheet was entitled 'Risk assessment and plans of work' and was 'em0' of HSE's asbestos essentials. Are you aware of this guidance?

Table 100

Response	Number
Yes	677
No	253
Don't know / unsure	57
Grand Total	987

Most respondents to question 100 (677, 68.6%) claimed to be aware of the revised 'plans of work' guidance. A further 253 (25.6%) respondents indicated that they were not aware of the guidance.

Question 101. Have you used the revised 'plans of work' guidance?

Table 101

Response	Number
Yes	364
No	293
Don't know / unsure	19
Grand Total	676

A majority of respondents to question 101 (364, 53.9%) indicated that they had used the revised 'plans of work' guidance, while 293 (43.3%) stated that they had not. A further 19 (2.8%) respondents submitted 'don't know' replies.

Question 102. How helpful did you find the revised 'plans of work' guidance?

Table 102

Response	Number
Extremely helpful	79
Very helpful	173
Somewhat helpful	97
Not so helpful	8
Not at all helpful	4
Don't know / unsure	2
Grand Total	363

Most respondents to question 102 (252, 69.4%) submitted positive answers, with 173 (47.7%) stating they had found the revised 'plans of work' guidance 'very helpful', and 79 (21.8%) reporting that they found the revised guidance 'extremely helpful'. Only 12 (3.3%) respondents asserted that they had found the revised guidance either 'not so helpful' (8, 2.2%) or 'not at all helpful' (4, 1.1%).

Section 5: Tell us About You and Your Business

Question 103. Approximately how many people work in your organisation? Please select only ONE.

Table 103

Response	Number
Only me (self-employed)	64
1 - 4 employees	51
5 - 9 employees	42
10 - 24 employees	83

25 - 49 employees	71
50 - 99 employees	92
100 - 249 employees	106
250 - 499 employees	95
500 - 999 employees	79
1000+ employees	270
Unsure / don't know	24
Grand Total	977

In terms of organisation or company size, the largest proportion of responses came from organisations with 1000+ employees (270, 27.6%). The next best represented group was that of organisations with 100 to 249 employees (106, 10.8%). As may be seen from table 103 (above), organisations with 49 or fewer employees make up less than one third (311, 31.8%) of the response to this question. Organisations with 50 or more employees comprise nearly two thirds (642, 65.7%) of the response. While many respondents to other questions skipped this question, it must be considered that larger organisations may be overrepresented and smaller ones underrepresented in the questionnaire sample.

Question 104. What is your current job title?

Table 104

Job Title - themes	Number
asbestos manager/officer/specialist	71
compliance officer/manager	44
construction/demolition	14
contracts manager	15
director - unspecified	104
engineer - unspecified	11
facilities/property management/maintenance	22
fire officer	3
health & safety /environment officer	31
health & safety director	15
hazardous materials/safety engineer	9
health & safety/asbestos consultant/advisor	132
health safety/environment manager	198

local authority/housing	6
manager - unspecified	88
occupational health/hygiene	16
project manager	16
school employee	8
site management	3
Surveyor – asbestos/building	24
technical/analysis	30
trades	5
training / H&S training	23
union officer	12
other/unclear	43
Grand Total	943

As there was a large response to question 104, job titles have been sorted thematically by area of expertise, title, or employer, according to the information submitted. Where a job title or theme is followed by the word 'unspecified' this is due to the responder not giving details of an area of expertise or specifying how their work relates to asbestos.

The highest proportion of respondents (198, 21%) reported having titles corresponding to health, safety and/or environment manager. A further 132 (14%) stated that they were health and safety and/or asbestos consultants or advisors. Responses from 104 (11%) participants indicated that they were directors, but gave no further details, while 71 (7.6%) said that they were asbestos managers, officers or specialists.

Section 6: Further comments

Question 105. If you have any further observations or comments about CAR 2012, please briefly detail these below:

There were 439 responses to question 105; the most numerous were those stating that they had no comment to add (147, 33.5%) or simply that this question was 'not applicable' (32, 7.3%).

There were no major themes or trends which emerged from responses to question 105, but some small proportions of replies showed some consistency; 30 (6.8%) responses asserted that 'CAR is fit for purpose', while 21 participants (4.8%) commented that awareness of the CAR regulations needs to be raised. Some even smaller sections of the response commented that the guidance needs to be simplified (14, 3.2%), that more specific guidance is required for domestic settings (14, 3.2%), and that more enforcement is needed (13, 3.9%).

Section 7: Contacting you

Section 7 of the survey was used to ask respondents to confirm if they were happy for HSE to contact them and to provide contact details. Responses to questions 106 and 107 have not been analysed for the purposes of this report. These questions are shown below.

Question 106. As part of this research HSE may want to contact you again to: a) clarify any responses you provided; and b) to get further information on some of the responses you provided. Are you happy for HSE to re-contact you?

Question 107. Please provide a work e-mail address:

The Costs and Benefits of the Control of Asbestos Regulations 2012 | Post Implementation Review 2022.

Introduction

1. Understanding the economic and wider impacts of The Control of Asbestos Regulations 2012 (CAR 2012) is important to inform HSE’s regulatory decision making and engagement with stakeholders on the case for proportionate risk management in the workplace. Monetised estimates are used by HSE to evaluate the economic impact of this regime.
2. This report presents estimates in monetary terms of the total annual economic costs and benefits of regulating asbestos in Great Britain (GB) from 2016 and extending 100 years into the future. Previously, before the 2017 PIR, a complete analysis of the CAR 2012 had not been completed. Economic activity was assessed from 2016 to determine the ongoing costs of the regulations; impacts before 2016 have not been considered. Our 2022 PIR has updated most costs with 2021 survey figures and for consistency all prices have been uplifted to this year. The analysis accounts for impacts of avoided asbestos-related cancers and asbestos control measures and how they fall to different groups: employers, individuals, and society as a whole. Benefits exclusively analyse the avoided costs of asbestos-related cancers in terms of individual human and financial costs. These estimates are formed by comparing the difference between forecasts of asbestos ill health with and without regulations. The principal finding of our analysis is that the Control of Asbestos Regulations 2012 in GB remain a net social benefit.

Summary of Analysis in 2021 Price year of 2016 economic activities forecasted over 100 years		
Net Present Value Benefits	Net Present Value Costs	Net Present Social Value
£28.7 bn	£12.4 bn	£16.3 bn*

* Estimates do not necessarily sum due to rounding.

3. This 2022 PIR demonstrates that the impact of CAR 2012 has a large £16.3bn net present social value²⁰ and that the case for maintaining these regulations remains strong. This cost benefit analysis allows us to conclude that the benefits of CAR 2012 outweigh the costs and will continue to do so for the foreseeable future, so long as exposures continue to be effectively controlled.
4. This analysis describes the process undertaken to try to quantify and monetise the costs and benefits of CAR 2012. This is the second Post Implementation Review (PIR) to analyse CAR 2012 and this 2022 PIR updates the 2017 PIR model and assumptions. The Better Regulation Framework Manual requires that, for high-cost

²⁰ The net present social value is a sum of estimated 100 years of annual economic costs and benefits of CAR 2012 presented in monetary terms. Net Present social value is the difference of net present value of benefits less the net present value of costs. Benefits are estimates of the cost savings of avoided pain, misery, and suffering associated with asbestos ill health. Cost are estimated from direct costs to businesses and government of compliance with the regime.

and benefit PIRs reaching billions of pounds, the actual costs and benefits of the regulations are estimated, as far as is possible. This analysis therefore describes the steps taken to complete this estimation, the barriers encountered, and the results of the work undertaken. As the 2017 PIR has made this case separately the 2022 PIR does not repeat all of the detail.

a) Scope

5. The Regulations are supported by an Approved Code of Practice (ACOP) 'Managing and working with Asbestos' (L143²¹) which sets out in detail what dutyholders are expected to do in order to comply with the legal requirements.
6. This cost benefit analysis (CBA) assesses four areas covered by CAR 2012:
 - i. **Licensable work**, which refers to high-risk work where the concentrations of asbestos fibres in the air during the work activity are likely to exceed specified limits in the regulations or involve specific asbestos-containing materials (ACMs). This includes most large-scale asbestos removal and building refurbishment/demolition work where ACMs are present. This work can only be undertaken by licensed contractors who fulfil the stringent criteria set out by HSE. The work must be notified at least 14 days prior to its commencement. Air monitoring, medical surveillance and health records for workers are also required.
 - ii. **Notifiable non-licensed work (NNLW)**, which refers to low-risk work where concentrations of asbestos fibres in the air during the work activity are unlikely to exceed the specified limits in the regulations and the activity is sporadic and of low intensity but where none of the conditions in regulation 3(2)(c) can be met. This work does not need to be carried out by licensed contractors but by competent persons. The work must be notified before it can start. Medical surveillance and health records for workers are required.
 - iii. **Non-notifiable work**, which refers to work where the concentrations of asbestos fibres in the air during the work activity undertaken are likely to be low and covers activities such as maintenance and small-scale asbestos work. This includes work done by workers such as plumbers, electricians, etc. who may disturb asbestos as a consequence of carrying out their jobs. There is no requirement for notification, medical surveillance or health records.
 - iv. **Duty to manage asbestos**, CAR 2012 continues to place a duty to manage asbestos on owners/managers of non-domestic premises (including public, commercial and industrial buildings and the common parts of multi-occupancy domestic buildings). This involves identifying, risk assessing, and recording the location and condition of asbestos and putting in place a plan to manage the risks from any asbestos in the building that they own or manage. Information must be passed on to any contractors or workers who may disturb asbestos while they are working on the building, so that they can avoid unplanned disturbance and put in place appropriate control measures.

²¹ ACOP <https://www.hse.gov.uk/pubns/priced/l143.pdf>

b) Approach and existing sources of evidence

7. The Better Regulation Framework Manual²² indicates that the PIR should assess the extent to which the effects anticipated in the original impact assessment (IA) actually occurred. This proved problematic in this instance, because the individual duties in CAR 2012 have come about in a piecemeal process over decades, with duties extended or tightened at different points. Most of the regulatory changes were accompanied by IAs, but there is not a definitive IA in place that captures all of the CAR 2012 costs together.
8. The 2017 PIR examined the IAs available and explored whether it would be possible to reconstruct a set of stand-alone estimates, but this proved unfeasible. This was partly due to the way the regulations had evolved, but the 2017 authors also had concerns that the evidence included in some of the IAs (particularly the oldest ones) would not be suitable to understand the current situation and would therefore be of limited usefulness. Some of these concerns related to changes in the way the asbestos removal businesses completed work and to technological changes in that field, and some of this is due to the quality of the estimates in other older IAs.
9. Many of the costs were found not to be estimated in a way that was feasible to reassess in 2017. An example of this was the 2002 IA produced to accompany the introduction of the duty to manage asbestos.²³ Although this provided a thorough analysis, the evidence collected was not suitable to use in this PIR. A high-resource evaluation of the duty to manage asbestos was published by HSE in 2011.²⁴ One of its objectives was to reassess the assumptions made in the IA about the costs and benefits of the duty. However, the evaluation found that collecting accurate information about costs in a way that could be compared with the IA and isolating the impact of the duty were not possible. This was partly because the way the costs were calculated in the IA (directly relating them to the size of the property involved) was incompatible with what information on costs was available from dutyholders. We have taken this lesson into account in how we have gone about gathering cost information for this PIR.
10. Given these issues, the approach taken in the 2017 PIR was to concentrate on what the likely costs and benefits were going forward and then estimate the ongoing costs and benefits of complying with the requirements in the regulations.
11. As noted in 2017, there was a supporting IA for CAR 2012, but that IA examined a specific change in relation to Notifiable Non-Licensed Work (NNLW). Although the whole set of regulations were remade to include the change related to NNLW (rather than using amending legislation), the changes were quite specific and only about creating NNLW. Thus, the IA only captured the costs of this change and not the costs of the whole set of regulations. These costs were only of the additional requirements, starting from a position where those affected already had some duties. The 2017 PIR approach to the costs, built on in this 2022 PIR, involved looking at the regulations as a whole and does not allow a comparison to assess the accuracy of the costs of the changes in the 2012 IA alone. Considering the scale of the costs and benefits involved, it was decided in the 2017 PIR that there was

²² The Better Regulation Framework https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916918/better-regulation-guidance.pdf

²³ This IA is currently not available online.

²⁴ Evaluation of the duty to manage asbestos <http://www.hse.gov.uk/research/rrpdf/rr783.pdf>

limited usefulness in trying to isolate the impact of these much smaller changes and this has been accepted in the 2022 PIR.

12. The 2022 PIR has utilised previous appraisals and evaluations, the evidence available including administrative data (e.g. on the number of companies licensed to undertake high-risk work with asbestos and how many people they employ), published statistical data, as well as analyses performed by HSE epidemiologists using the HSE Mesothelioma Projections Model and HSE published research on the Costs to Britain of Work-Related Cancer,²⁵ which allowed us to estimate benefits. This PIR has improved evidence of the experiences of those working with and managing asbestos collected from stakeholders via an on-line survey that received over 1,800 responses.

Enhancements in 2022 PIR

13. In the current 2022 PIR, we agree with the decision to decouple from the mosaic of IAs that implemented the Control of Asbestos Regulations over several years. In practical terms this means that we have not updated the original IA calculations as they were not intended to assess the entirety of each regulation. In this PIR we have enhanced the 2017 PIR through modelling adjustments and improved evidence.
14. For the 2022 PIR, modelling adjustments have resulted in methodological improvements and presentational differences. Total annual costs were adjusted by a trivial difference in rounding approaches, so these figures are effectively unchanged. Analysts for the 2022 PIR adjusted the application of building attrition rates for asbestos removal jobs and duty to manage. The building attrition rate, described in detail in paragraphs 65 to 75, is the rate at which all buildings are demolished or renewed through their natural life cycle. In 2017 the analysis applied a building attrition rate to all costs and this was adjusted as part of the 2022 PIR, as detailed in paragraph 65, with an improved natural attrition rate adjustment and asbestos removal jobs rate adjustments.
15. The net present value presented in the 2017 PIR was modestly over estimated due to the method of applying discount rates. This modelling has been adjusted to comply with Treasury Green Book guidance for estimating net present values and detail of this adjustment can be found in paragraph 240.
16. Due to required modelling adjustments and presentation differences noted above with the 2017 PIR, we decided in the second PIR we would compare headline figures in the total annual cost and net present value rather than completing a cost-by-cost comparison. Further comparisons of cost differences in the PIR were not considered proportionate as they would not provide additional clarity of the social value of CAR 2012 regime.

Price year and economic activity base year

17. The 2017 PIR estimated costs in 2016 prices and used data on the level of economic activity related to asbestos work from 2016, projected forward into the future over 100 years to fully capture the health impacts of avoided cancer, which are subject to a considerable latency period.

²⁵ Costs to Britain of Work Related Cancer <http://www.hse.gov.uk/research/rrhtm/rr1074.htm>

18. In updating this analysis for the 2022 PIR, we have updated prices to 2021 levels through our survey approach (asking respondents to review estimated costs in light of their recent experience) and through updating several input estimates, such as wage costs to the latest estimates from the Office for National Statistics (ONS).
19. We have, however, retained 2016 as the base year for economic activity. The latest data on construction activity is affected by the COVID-19 pandemic, which has distorted expected trends through lockdown, furlough and the effects of illness itself. As such, the latest data reflects an abnormal period from which it would be unwise to try to draw conclusions about the future.
20. At the same time, operational data held by HSE on notifiable non-licensed work is held for a limited time only for operational intelligence purposes before it is destroyed.
21. So, while it would be possible to update general construction and other activity data to a period just prior to the pandemic, it would not be possible to do so for the HSE data.
22. On balance, we have assessed it prudent to retain the activity data from 2016 used in the 2017 PIR as the most recent consistent estimates of activity, and to concentrate this PIR on updating price and cost information. Retaining the 2016 base year will allow for headline estimates in the current PIR to be more readily compared with the 2017 PIR.

Cost/Benefit Analysis

23. The approach taken in the 2017 PIR and the 2022 PIR concentrated on assessing the impact of the removal of CAR 2012 control measures compared with the complete ongoing costs and benefits of complying with the requirements in the regulations. This approach has been taken since much of the initial implementation of CAR 2012 was done without impact assessments as they were not historically a requirement.
24. The approach for estimating costs and benefits assumes the regulations were not implemented from 2016 and does not attempt to quantify historical impacts. In this scenario buildings would continue to be renovated and demolished. Since the use of asbestos containing material is prohibited the stock of asbestos would continue to decrease year-on-year.
25. In the comparison scenario, asbestos control measure costs are assumed to be 0. However, without CAR 2012 employers would still be required to take efforts to reduce asbestos exposure and would incur some costs. Although an assessment of these costs would be possible, it has been considered proportionate to demonstrate the value for money of CAR 2012 with the full cost of control measures in both the 2017 and 2022 PIRs.
26. As detailed in the benefits section (after paragraph 254), cost savings are the difference in avoided fatalities of a scenario without the regulations and a scenario with the regulations.

27. It is likely that some or many individuals working with asbestos would continue to take the precautions indicated in CAR 2012 or other precautions. We are not able to claim all of the reduction in exposures since 1980 was due to the regulations and therefore control measure costs and exposures would be less than estimated. However, this is the appropriate scenario to contrast with the costs calculated in this PIR, which are the full ongoing costs of taking the prescribed actions in the regulations, as it represents the impact of stopping taking those actions.

c) Methodological Options

Evidence gathering options used in 2017 and 2022

28. Several options were considered for gathering the evidence required for the monetisation of the costs of CAR 2012. Proportionate to the high level of spend of CAR 2012, this section of the report details research methods that were rejected and the approaches taken to demonstrate efforts to value costs and benefits as far as possible. Options presented below were considered in the 2017 PIR and reviewed for the 2022 PIR. The 2017 PIR relied on all options (Option c, the online survey was only used for non-notifiable work), whereas the 2022 PIR relied on option c. and desk research. The options for evidence gathering are described below.
- a. **Focus groups** (2017 PIR Appendix 2: Research report on dutyholders evidence) was the method chosen to collect the qualitative evidence from dutyholders about the effectiveness of the Regulations. Such an approach would have been good for ensuring dutyholders understood the relevant costs for the post implementation review analysis and that all answers were on a consistent basis. However, eight groups were required to ensure representative coverage across the different dutyholders and across GB. These groups were set up to collect qualitative information about the effectiveness of the regulations. It was not considered feasible by HSE social researchers to also cover costs in those same sessions to an appropriate level of detail. In order to include any questions about costs, all eight groups would have had to be replicated which would have created a disproportionately large burden on the participating businesses. Also, a focus group/ workshop setting was not considered to be the ideal method for trying to get a consensus view on the costs. Ideally, each group would have had to be reconvened a number of times to build a consensus (see option b below).
 - b. **A consensus-building approach.** This is a method that has been used successfully by HSE in the past to estimate baseline costs using an approach whereby consensus is reached by dutyholders who are similar in size and activity. In order for this to work for CAR 2012, the dutyholders would be split as they were for the focus groups/ workshops as described in the 2017 PIR Report (Appendix 2) but would have to be convened at least twice. The first time for HSE to provide guidance and clarity on which costs we are looking for and how to go about estimating them. After the first meeting dutyholders would go back to their business and estimate the costs of the regulations for their own business. A second meeting is then held to discuss these costs for the group to reach a consensus. HSE would then have to convene a parallel group who look at the estimates provided by the original group and challenge the estimates where appropriate. On top of the qualitative work this was

thought to be a disproportionate burden on business, especially as the outcome of such an approach could not be guaranteed for the asbestos sectors. The consensus-building approach has been successful in the past for sectors where businesses are very similar in activity and size and employ dedicated health and safety managers; however, the asbestos sector has more variation in size, customer base and activities, and so a large number of separate groups would need to be convened to arrive at a suitably robust estimate, creating a large and disproportionate burden on business.

- c. **Online survey.** Explaining the types of economic costs associated with any regulation can be complex and questioning dutyholders without the ability to clarify questions can lead to confusion. Online surveys can result in respondents misunderstanding questions and produce large ranges of responses, due to different interpretations of the questions. Due to this response flaw, online survey evidence must be interpreted with experts. Online surveys are best suited to dutyholders who are familiar with the topic and have a good knowledge of costs.
- d. **Telephone interviews.** This would require external support due to the high resource level required to set up, complete, document and analyse a large number of telephone interviews. HSE would have to contract an external company to conduct the interviews and ensure the external company understood exactly what costs would be required for this PIR, as well as the appropriate follow up questions to responses.
- e. **Representatives Interviews.** A method for engaging hard-to-reach stakeholders such as small businesses, sole traders or individual workers, by contacting trade associations or unions. Both trade associations and unions are organisations that help promote their members' views and have privileged access to their members. Engagement with stakeholder representatives can be of great value in early evidence gathering and when evidence gaps include specific groups. Trade associations can also be used to recruit stakeholders to participate in the other methods described above.

Preferred Methodology for evidence gathering in 2017

- 29. For licensed work, notifiable non-licensed work (NNLW) and the duty to manage asbestos, the method judged most likely to successfully deliver evidence (while being proportionate in the effort it required from dutyholders) was to use the focus groups already set up for the qualitative work to consider the cost element. Participants were asked to complete a questionnaire. This methodology was selected as similar approaches had worked very well for previous IAs.
- 30. Research methods and objectives were explained. Participants were sent a copy of a cost questionnaire to complete, within a couple of weeks. The responses were then collated, and average costings estimated for each regulatory duty. These were then sent back to all the focus group attendees to allow them to challenge the estimates.
- 31. For non-notifiable work, it was not possible to convene a focus group. This is known to be a hard-to-reach group, partly because many in this group are self-employed or micro-organisations (up to ten employees) who cannot easily spare the time to take

part in such research. As a result, an on-line survey was used to gather qualitative views from this group, so that they could voluntarily participate in their own time. This meant that a potentially large number of these dutyholders could be reached. People carrying out non-notifiable work with asbestos are not legally required to contact HSE, and so, unlike other groups working with asbestos, HSE has limited contact information for them. The online survey was completed by 94 dutyholders and led to several contacts who agreed to also take part in a telephone interview on costs. An external data collection specialist company, Peak Answers conducted the telephone interviews, using a question set designed by HSE. A total of 30 phone interviews were conducted. Peak Answers were briefed on the sort of costs that are relevant to the PIR and how to follow up any answers. The participants were sent the questions in advance so that they could prepare, and the interviewers at the external company were fully briefed on the questions to try to focus upon the right costings.

Preferred Methodology for evidence gathering in 2022

32. Given this was the second time this set of regulations had been subject to a PIR process, we consulted internally and externally to ensure the approach taken was appropriate. This second PIR was not intended to be an exhaustive exercise. Research associated with the first PIR was extensive and with that in mind, a proportionate evidence-gathering exercise was proposed. This was supported by the secretariat of the RPC and by HSE's EWG. The focus of research for the 2022 PIR was on improving price assumptions used in cost benefit assessments in the 2017 PIR. The evidence collected builds on that gathered for the previous PIR and does not repeat what was done previously. To this end, the primary research was undertaken via an online survey.
33. The 2022 PIR has focused on 2017 cost assumptions where evidence was uncertain or aggregated annual costs exceeded £12 million (m).
34. Cost areas to be captured as part of the second CAR 2012 PIR were prioritised based on the following criteria:
 - i. Only 'on-going' costs (no 'sunk' costs²⁶); and/or
 - ii. Areas where there was limited evidence from the previous PIR in 2017 (so 'non-notifiable work' and 'duty to manage'); and/or
 - iii. Areas with an impact over £12m
35. These criteria resulted in a review of assumptions for nine regulations in the CAR 2012. The remaining regulations had estimates updated with available HSE administrative data and other government publications including the ONS. Evidence gathered in 2017 for 'non-notifiable work' and 'duty to manage' both suffered from low stakeholder engagement so both regulations were reviewed due to limited evidence in 2017. This second PIR's research criteria aimed at capturing more data from these hard-to-reach groups. The third criterion, £12m cost cut off, was selected to ensure large total annual costs were explored. These criteria meant we have updated approximately 90% of annual cost estimated in the 2017 PIR. All other figures were updated by inflation with the GDP deflator.

²⁶ Sunk costs refer to expenditure or payments already incurred and should be excluded from the appraisal of social value. What matters are costs and benefits affected by decisions still to be made. The costs of continuing to use resources that are already paid for (e.g. assets or buildings) are relevant and should be included as opportunity costs. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf

36. For the 2022 PIR, the online survey featuring 107 questions, was available for completion between 21st May and 11th June 2021. This survey was promoted to a range of stakeholders and relevant dutyholders via HSE e-bulletins for the construction, asbestos, risk-management, education, health and social care, and local government sectors, as well as to small and medium sized businesses, schools and organisations concerned with lung disease and occupational cancer. Messages were also placed on HSE’s Twitter account. The e-bulletins also gave advanced notice of the survey. A selection of stakeholder organisations, including those who carry out “notifiable non- licenced work”, were emailed directly.
37. The cost questions in the online survey used a verification approach methodology, where 2017 PIR estimates were presented to respondents, who then indicated if they thought the estimates were “about right”, “too high”, or “too low” in light of their current experience. A follow up free text response was allowed for respondents to provide an alternative estimate.
38. The 2022 PIR received 1850 responses while the first PIR was informed by 8 focus groups, 94 survey responses and 30 phone interviews. For the recent survey, the majority of the questions were aimed at verifying cost assumptions. In 2017, evidence-gathering was also focused on understanding the impacts of previously implemented regulations.

Survey analysis

39. All survey responses were analysed and validated with HSE asbestos expert guidance to verify their suitability in modelling. When responses included figures that experts did not consider possible, they were treated as outliers. Many of HSEs analyses are completed with small survey samples and an expert view is taken on every response to ensure we gather all useful evidence. The recent 2021 survey received 1850 responses and a numerical approach was undertaken to improve efficiency of the analysis.

Descriptive statistics (mean, median, mode, and range) and histograms of the response distribution were used to inform expert opinions. This is a typical approach to clean data used to help interpret responses. Extreme responses or outliers were rejected if HSE experts considered them as not possible. A median was selected to mitigate outliers and agreed with HSE experts. Online survey analysis is prone to survey response error and can produce a wide range of estimates. A median analysis takes the ranked middle response as an estimate and is not sensitive to outliers, unlike an average.

40. Where the clear majority (more than 60%) of respondents thought cost estimates were “about right”, 2017 assumptions were retained. When a clear majority of respondents disagreed that the 2017 estimates were “about right”, a median of the alternative costs given by respondents was taken due to the expectation of outliers.
41. When survey respondents were split with between 40 to 60% claiming “about right” or not (too low or too high), an average of the “about right” estimate and the median of the free text responses was taken. This average was used as the best estimate, while the “about right” and median were used as the high and low estimates respectively.

42. Where the distribution of responses did not support a high and low range a point estimate was taken of the median erring to increased cost. The 2017 PIR estimate was retained if it was a higher cost as both estimates were uncertain.
43. One question where HSE experts did not identify outliers and all responses were in a possible range of costings, a simple average was selected instead of a median. For large businesses (with 250+ workers) duty to manage analysis, experts thought all responses were possible and no outlier existed. This is further discussed in paragraph 223. Outliers were ruled out in this cost line as the questions were on a per business basis for large businesses and it was acknowledged that high time estimates were possible for large business with multiple sites spread across the country.

Figure 1: Regulations Economic costs updated include:

Regulations	Regulation Category	Percentage of cost estimates that Survey respondents thought were 'About right' in the 2017 PIR
NA	Non-Notifiable	50%
4	Duty to Manage	0%
6	NNLW and Licenced	50%
7	NNLW and Licenced	33%
13	NNLW and Licenced	100%*
18	NNLW and Licenced	100%**
19 & 20	NNLW and Licenced	50%
24	NNLW and Licenced	100%
Total		54%

*Survey design flaw discussed in paragraph 142.

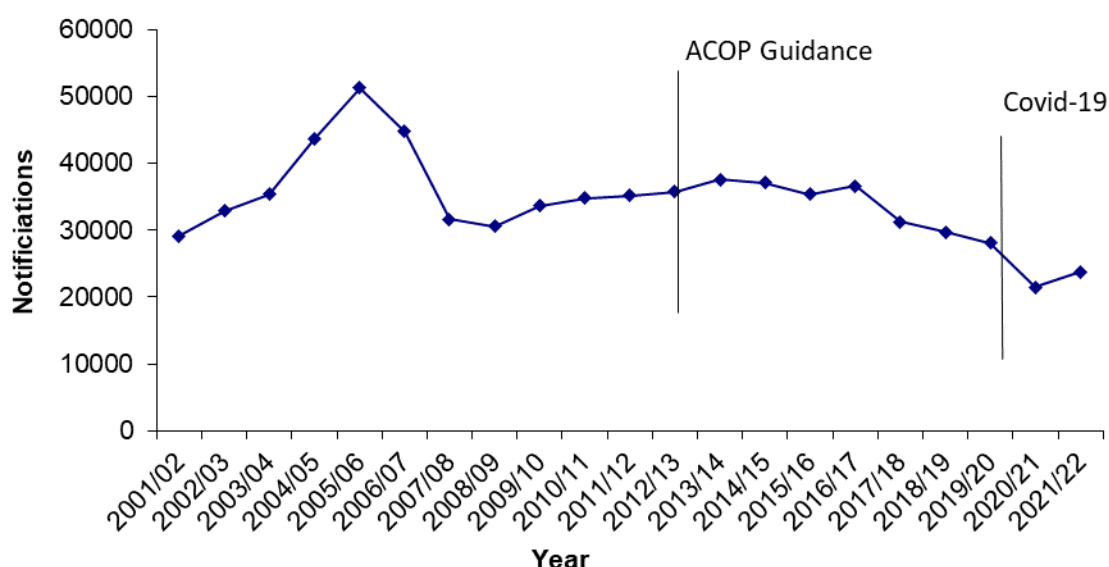
**Survey design flaw discussed in paragraph 98

44. Analysis suggests that about 54% of cost estimates in the 2017 PIR were 'about right'. Of the 39 cost estimates surveyed, a third are from duty to manage and non-notifiable regulations and the other two thirds are NNLW and licenced work. The low agreement with 2017 cost estimates for duty to manage and non-notifiable work regulations reflects the known uncertainty in those estimates. Higher agreement with the NNLW and licenced work cost estimates was expected as this data was of better quality.

Licensable work and notifiable non-licensed work assumption verification

45. Asbestos removal job counts applied in the cost modelling were pulled from HSE's Operational Services Division, Permissioning and Licencing Team and official notifications. As this data is internally available, we reviewed changes to the notifications since 2016/17. Since then, notifications have declined in licenced notifications and increased in notifiable non-licensed work.

Figure 2: HSE Asbestos Licensed Notifications 2001- 2022



46. Licensed work notifications were relatively stable between 2006/7 to 2016/17 but have nearly halved since, from approximately 37,000 (2016/17) to just under 24,000 final year figure (2021/22).
47. NNLW notifications have more than doubled, rising from 28,000 (2016/17) to around 89,000 (2021/22) jobs. HSE only maintains the NNLW job notification data for a limited time and does not retain or aggregate the data for annual comparison. Annual job figures are estimated from the most recent data.
48. The impact on modelling is a marginal decline in total annual costs of approximately £7m. Due to the impact being a relatively small decline when compared to overall total annual costs of hundreds of millions of pounds we have maintained the initial 2016 estimates.
49. Erring toward increased costs alone justifies maintaining the 2016 work assumption. However, Covid-19 lockdowns reduced construction activity between the end of 2019/20²⁷ and July 2021. As such it is possible that the shift toward NNLW is a temporary solution adopted by the industry to manage and maintain asbestos work when large licensable jobs could not be contracted during the pandemic.

Follow up evidence gathering

50. Although small/micro businesses had a good number of respondents (157 out of 1850), they had the lowest rate of response to specific questions on duty to manage asbestos. For micro/small business duty to manage questions only 13 of a possible 157 answered the questions. Of these responses we received a wide range of answers, consequently a follow up was attempted with organisations representing small and micro businesses. These organisations were given one month to provide

²⁷Construction output in Great Britain - Office for National Statistics
<https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/bulletins/constructionoutputingreatbritain/july2021>

feedback. However, they were unable to provide insight themselves or solicit additional responses from their members. Small/micro business assumptions could benefit from further research and engagement. This is detailed in paragraph 59 to 62.

d) PIR challenges and approach taken as a result

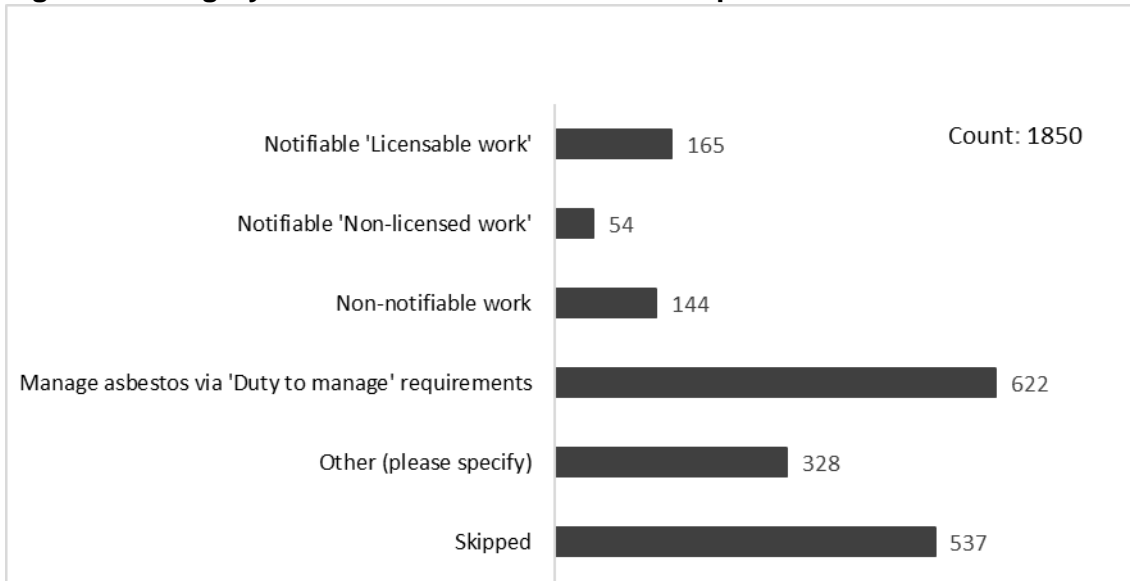
51. Stakeholder engagement was a challenge for both PIRs in 2017 and 2022 with an impact on the analytical approach adopted. For the 2022 PIR there were additional modelling improvements made to the 2017 PIR's natural attrition rate.

Stakeholder Engagement

52. The 2017 PIR engagement exercise experienced low stakeholder feedback which reduced the certainty of the estimated impacts of implementing CAR 2012.
53. All categories of stakeholder including those doing notifiable work (licensed and NNLW), non-notifiable work, and those with a duty to manage asbestos, exhibited low engagement and participation. A total of 55 questionnaires were sent out to the groups for licensed work, NNLW and those with a duty to manage asbestos, but only 7 were returned (5 by participants in the licensed group and 2 by participants in the duty to manage asbestos group). In the 2017 PIR, large businesses were over-sampled while small businesses provided little input. Consequently, the evidence of the costs associated with duty to manage were considered highly uncertain.
54. A total of 30 telephone interviews were conducted for the non-notifiable group, and it was found that for half of these respondents, they either did not knowingly work with asbestos and/or they were not aware of any duties under the regulations. The cost information from those respondents who carried out non-notifiable work with asbestos proved to be limited.
55. Given the difficulties, the 2017 PIR analysts did not consider they had sufficiently robust information to make specific cost estimates.
56. For the 2022 PIR, stakeholder engagement was completed through online survey as described in paragraph 28. As previously mentioned in this report, evidence gathered through online surveys suffers from uncertainty but enables higher response rates raising our confidence in the estimates. The online survey in May/June 2021 received 1850 responses. This evidence helped verify and update costs estimated in the 2017 PIR. The result is the 2022 PIR has input from a broader cross-section of affected businesses, improving the level of certainty in cost estimates. We believe the evidence gathered is robust enough to provide specific cost estimates. The online survey suggests that many of the costs remain 'about right' but where there were disagreements the costs have increased.

Survey response demographics and regulation categories May/June 2021

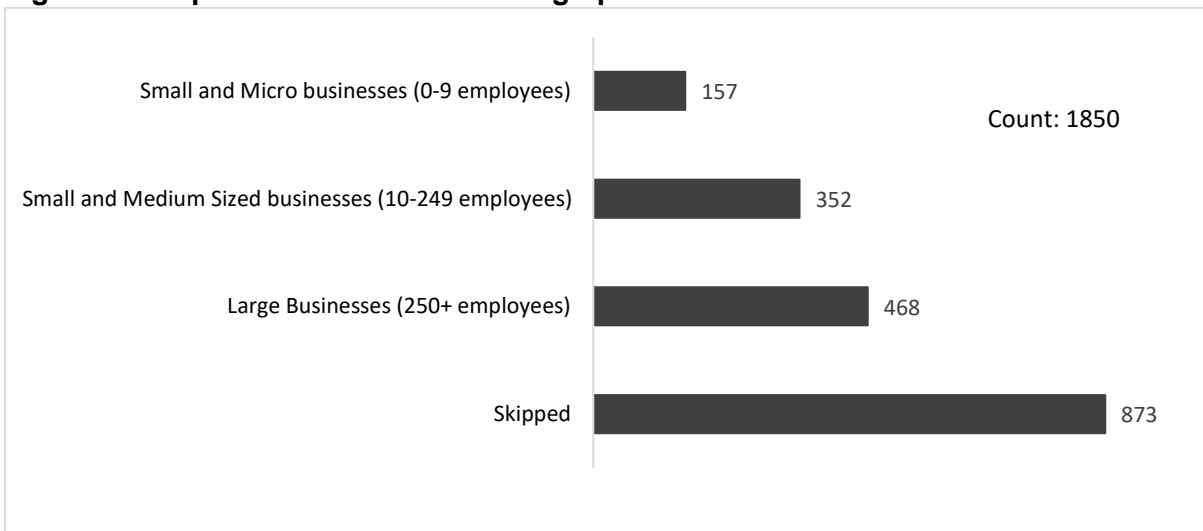
Figure 3: Category of work most relevant to the respondent



Question 9: Please indicate what type of work YOU do with asbestos (if multiple options apply to you and your business, please choose the ONE which is most relevant / appropriate).

57. Figure 3 above shows that we have an improved number of responses from across all dutyholder categories. Of those who responded to this question we can claim a good response rate of no less than 54 responses to validate each cost category. Dutyholders involved in non-notifiable work are the most difficult stakeholder group to engage as they are often made up of self-employed individuals as described in paragraph 6iii.

Figure 4: Respondents Business Demographics



Question 103. Approximately how many people work in your organisation? Please select only ONE. Note that the skipped category includes 24 respondents who did not know how many employees were in their business.

58. Figure 4 suggests that, overall, we experienced a good response from all business categories with no less than 157 responses for 'Small and Micro' businesses. Of those respondents who answered, responses weighted by business proportion of employment are within 8% of the ONS statistics²⁸ for each employment band. Small and Medium size businesses are slightly overrepresented by their proportion of employment at 36% of responses. While 'Small and Micro', and Large businesses are modestly underrepresented by their proportion of employment at 16% and 48%. As with the 2017 PIR, large businesses make up nearly 50% of the responses where they are less than 1% of the business population²⁹. Specific questions allowed the survey to identify that duty to manage cost estimates were impacted by a low response rate amongst 'Small and Micro' businesses. This is the same hard-to-reach group as self-employed stakeholders that impacted the non-notifiable cost estimates.

Small and Micro Businesses

59. A specific challenge of the 2021 online survey was response rates from small and micro businesses to duty to manage questions. The response number for online survey question 86 (asking how long it would take a health and safety officer to manage asbestos for the company) was 13 responses. The majority of these thought the time taken was too low. Given this was a better response rate than evidence used in the 2017 PIR, where no responses were received from small and micro businesses, we revised the hours from 1 to 2.5 hours and reviewed the cost calculations.
60. Duty to manage cost estimates increased from 2017 due to an underestimate in the hours small and micro businesses spend annually managing asbestos. The 2017 PIR includes 5.2m businesses in this category so a small increase in hours spent managing asbestos could have a large impact financially. Preliminary modelling of updated survey inputs increased this cost estimate by over £50m which HSE experts considered unlikely due to the expectation that few small and micro business would have a duty to manage. The 2017 PIR managed some of this sensitivity to small and micro business exempting 0.9m businesses that work from home. On review, experts anticipate that a greater number of the remaining businesses would be further exempt due to the type of tenancy agreement they hold for buildings they occupy.
61. We reviewed other exemptions for small and micro business which HSE IAs have applied previously. In 2015, HSE economists undertook a review³⁰ of self-employed exemptions, determining the number of businesses across all industrial sectors that were out of scope of health and safety regulation (i.e. self-employed people that pose no risk to others). Individuals who are self-employed and working from home would be managing the risk for themselves and would act (or not) for reasons outside of HSE's regulations. Self-employed fall into the micro business category with 0 employees so this same exemption can be applied to the duty to manage exclusion estimates. Applying the assumptions in the 2015 analysis to the 2022 PIR allowed for 1.8m small or micro business to be excluded, nearly doubling the 2017

²⁸ <https://www.ons.gov.uk/file?uri=/businessindustryandtrade/business/activitysizeandlocation/adhocs/12101employeesbyemploymentsizeband/ah683.xls> & <https://www.ons.gov.uk/file?uri=/businessindustryandtrade/business/activitysizeandlocation/adhocs/12808employmentandemployeesbyemployeesize/ah774.xls>

Employment proportion by employment band size (0-9 employees 18%, 10-249 employees 28%, and 250+ employees 54%).

²⁹ <https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation>

³⁰ Implementation of Professor Löfstedt's recommendation to exempt from Section 3(2) of the Health and Safety at Work etc Act 1974, those self-employed whose work activities pose no risk of harm to others. IA NO: HSE 071

exclusion of 0.9m small or micro businesses. We chose to replace the 2017 PIR exclusions estimate of those self-employed who worked from home as they were included in the self-employed who are considered not a risk to others.

62. Further desk research was undertaken to determine tenancy agreement exclusions. Small and micro businesses' duty to manage asbestos is determined either by a contract / tenancy agreement about maintaining the building or if no agreement then some degree of control over maintenance is necessary for the duty to apply. Tenancy agreements or contracts where the occupant was not responsible for building maintenance would not have a duty to manage asbestos. If there is no legal agreement at all they will have no duty but only if they have no control over maintenance for their part of the premises and access and egress to it. We were unable to identify the proportion of small or micro businesses that would fall into these groups. We completed desk research and solicited evidence from organisations representing this group as discussed in paragraph 43 but no evidence was forthcoming.

e) 2022 PIR Modelling improvements

Analysis base year

63. The total annual costs in the CBA are modelled for the year 2016 and going forward they are adjusted by a natural attrition rate for buildings with asbestos-containing materials (ACMs). The 2022 adjustments to the attrition rate are described below in detail. In the 2017 PIR, the analysis estimates prices and quantities in 2016 and modelled them forward from 2016 for one hundred years.
64. For the 2022 PIR, the quantity base year remains 2016. For example, in the case of businesses affected by CAR 2012 regulation 4 we have gathered evidence from official government statistics on the number of businesses in 2016. Aggregated wages and costs that make up 99% of the improvements to the PIR are derived from the 2021 HSE survey, so our price year has been adjusted to 2021. Although the HSE 2021 survey validates some of the prices estimated in the 2017 PIR in several instances we cannot say with certainty what wages were in 2016 for asbestos removal jobs or many other costs. Where wages or costs were not updated with the 2021 survey, we have updated costs with additional government statistics or inflated them with the GDP deflator³¹. We have also used GDP deflators to update the price year of the HSE estimates of the value of a prevented fatality, as described in paragraph 230.

Natural attrition rate

65. A natural attrition rate, which affects all buildings, has been applied to buildings with asbestos to model the building stock and the costs over time. The natural attrition rate models how buildings are demolished at the end of their life or are completely renovated over 100 years. A building is either run down in 50 years or maintained through ongoing repairs for a longer period. We assume buildings require constant maintenance, so at the end of 100 years a building is either completely renovated or destroyed as it would otherwise be a neglected ruin. HM Treasury Green Book³² guidance recommends 60 years to assess the costs and benefits of the life span of

³¹ GDP Deflator

https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fassets.publishing.service.gov.uk%2Fgovernment%2Fuploads%2Fsystem%2Fuploads%2Fattachme nt_data%2Ffile%2F1044826%2FGDP_Deflators_Qtrly_National_Accounts_December_2021_update.xlsx&wdOrigin=BROWSELINK-QuarterlyNationalAccounts-ONS

³² The Green Book <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

infrastructure. In this analysis we have selected a longer life span for buildings using Valuation Office Agency and HSE evidence (detailed in paragraphs 67 and 68) to demonstrate that buildings are often used for more than 60 years. Our longer life span of 100 years additionally errs toward increased costs.

66. The prohibition on supply and use of asbestos means that as buildings reach the end of their life and are demolished, any replacement buildings will not contain asbestos. During the life span of a building, any asbestos-containing materials will deteriorate and be removed. A full renovation would involve stripping the building down to a shell and reconstruction which should also result in no remaining asbestos. Maintenance and renovations over a hundred years should therefore be considered the same as demolishing a building with asbestos at the end of life. Whilst this is not always classed as demolition, all asbestos should be removed under controlled conditions in just the same way as if the building were demolished.
67. An initial estimate of the natural attrition rate was considered in the IA carried out prior to the introduction of CAR 2012³³. Valuation Office Agency evidence suggested an average demolition rate of 2% and HSE evidence demonstrated a rising rate of demolition as buildings age - the older a building is the more likely it is to be demolished as it approaches the end of its useful life.
68. Therefore, the natural attrition rate was assessed to start with a 1% reduction of stock (in the first year of a building's life), slowly rising to 4% by the end of the period and giving an average of around 2%. The 4% attrition rate is applied to old buildings after about 50 years and implies buildings need major maintenance to keep operating. The effect of this varying attrition rate is an extension of asbestos management beyond 50 years. Essentially, the attrition rate assumes a hundred-year-old building is at end of life or had major repairs but would nevertheless retain some residual value. This a sensible decision when considering the life cycle of a building.
69. A time horizon of a hundred years is applied in this model, and costs are modelled in 2016 and then reduced by the natural attrition rate applied to asbestos containing material in Great Britain (GB) over the same hundred years. This time horizon is supported by HSE epidemiologists and ensures that the CBA captures the benefits of avoided health impact of asbestos exposure. The attrition rate provides an indirect way of estimating changes to levels of asbestos exposure. It also predicts that asbestos removal jobs will decline over time as the proportion of domestic and commercial buildings containing asbestos falls.
70. The 2017 PIR's application of a natural attrition rate from 2016 assumed that all buildings with ACMs were new in 2016. This assumption was accepted at the time as it ensured that the CBA took a conservative approach towards costs. We have decided that we will aim for greater accuracy in this PIR by making suitable adjustments to the attrition rate to account for the 1999 asbestos ban and estimated age of building with ACMs. The attrition rate adjustment has a systemic effect on annual cost over time through reducing the estimated proportion of buildings that retain ACMs.

³³ https://www.legislation.gov.uk/ukia/2011/471/pdfs/ukia_20110471_en.pdf

71. Adjustments can be made to the attrition rate with reasonably accurate estimates of the dates of ACM installation, building construction date, and the number of buildings constructed. Ideally, we would apply precise build dates to this analysis, but these are not broadly known. Estimates of commercial and domestic buildings containing asbestos was published by the Department of the Environment, Transport, and the Regions (DETR) in 2002³⁴.
72. DETR's estimates are considered an appropriate estimate of asbestos use in GB as it was all banned by 1999 and there are assumed to be no new buildings with asbestos subsequently. More recent estimates of buildings containing asbestos are not available as the data is not routinely collected. Additional surveys would be of use for modelling the impacts of asbestos in GB but would still require additional adjustments for input into the 2022 PIR. Any new survey would be a snapshot of asbestos material in buildings at the time and we cannot capture precise evidence of buildings with asbestos in 2016. Since this data is not routinely collected, this estimate of total building stock containing asbestos in the 2022 PIR is derived from estimates of asbestos use. DETR 2002 commercial estimates included properties such as shops, offices, warehouses, stores, storage depots, storage land, restaurants, and cafes in the UK, based on figures from the Valuation Office Agency. Domestic estimates are for the riskiest forms of asbestos found in homes. The natural attrition rate (as detailed in paragraph 68) is applied to the commercial stock and domestic stock from a central estimate of each build period to estimate the building stock in 2016.
73. The natural attrition rate is adjusted to 2016 by forecasting the DETR estimated commercial building stock categories of ACMs at a midpoint date of use. There are four dates for the categories of ACMs used as a starting point to forecast from, namely pre-1918, 1929, 1960, and 1990.

Figure 5: Commercial Properties with ACMs and Date of Installation

Construction Period	Mid-point	Estimated Building Stock
Pre 1918*	1918	515,007
1919-1939	1929	107,333
1940-1980	1960	230,159
1980-2002	1990	163,022
Total		1,015,521

*Estimated from 1918 with no midpoint since there is no range provided.

74. The attrition rate is applied to the four building stock categories (construction periods) to estimate how many buildings of each age category are still in existence at any given point in time. The remaining cohort of buildings (post 2002) are assumed to have no ACMs. An annual percent change is calculated from adding the estimated remaining building stock with ACMs for 2016 to 2115 forming the adjusted attrition rate. The adjusted attrition rate is applied in the 2022 PIR from 2016 starting at 2.9%. The new attrition rate rises gradually, with some variation, to 4% in 2040

³⁴ <https://environtec.com/wp-content/uploads/2017/12/5.-DETR-Asbestos-and-man-made-mineral-fibres-in-buildings.pdf>

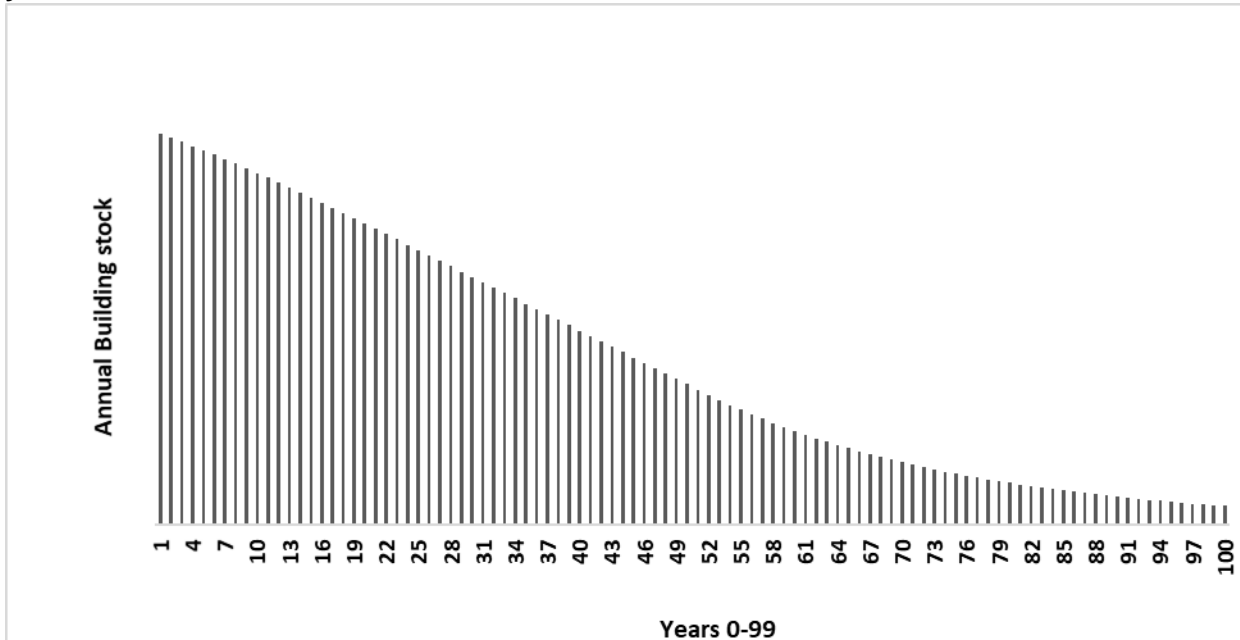
where it remains stable until 2115. In 2040, the 4% attrition rate is equivalent to claiming that all of the buildings are in need of major repairs or demolition.

75. To sense check the applied adjustments to the attrition rate, we compare it against the attrition rate without varying building age. A similar rate of attrition would be achieved if we assumed all buildings with ACMs were new in 1976. Since asbestos use started to decline a decade earlier the new attrition rate remains appropriate and can be considered to err toward increased costs.

Asbestos removal jobs rate adjustment

76. In the 2017 PIR, the attrition rate was directly applied to both asbestos removal jobs and duty to manage. This attrition rate remains appropriate for duty to manage but we have adjusted this for asbestos removal jobs in the current PIR.
77. The extent of the duty to manage asbestos in buildings follows the natural attrition rate of building demolition over their lifetime. With no new asbestos builds, the number of buildings with asbestos is decreasing year-on-year. When there are fewer buildings with asbestos there are fewer dutyholders with a duty to manage it. However, this does not follow for asbestos removal jobs, which rather reflects the *rate* of decline of buildings containing asbestos, because it is the act of asbestos removal itself, including as part of the demolition process, that causes the stock of asbestos-containing buildings to decline. In the figures below, we present examples of this impact and the 2022 adjustment to rates of attrition that reduce cost from 2016.

Figure 6: Example building stock reduction by applying natural attrition rate over 100 years.

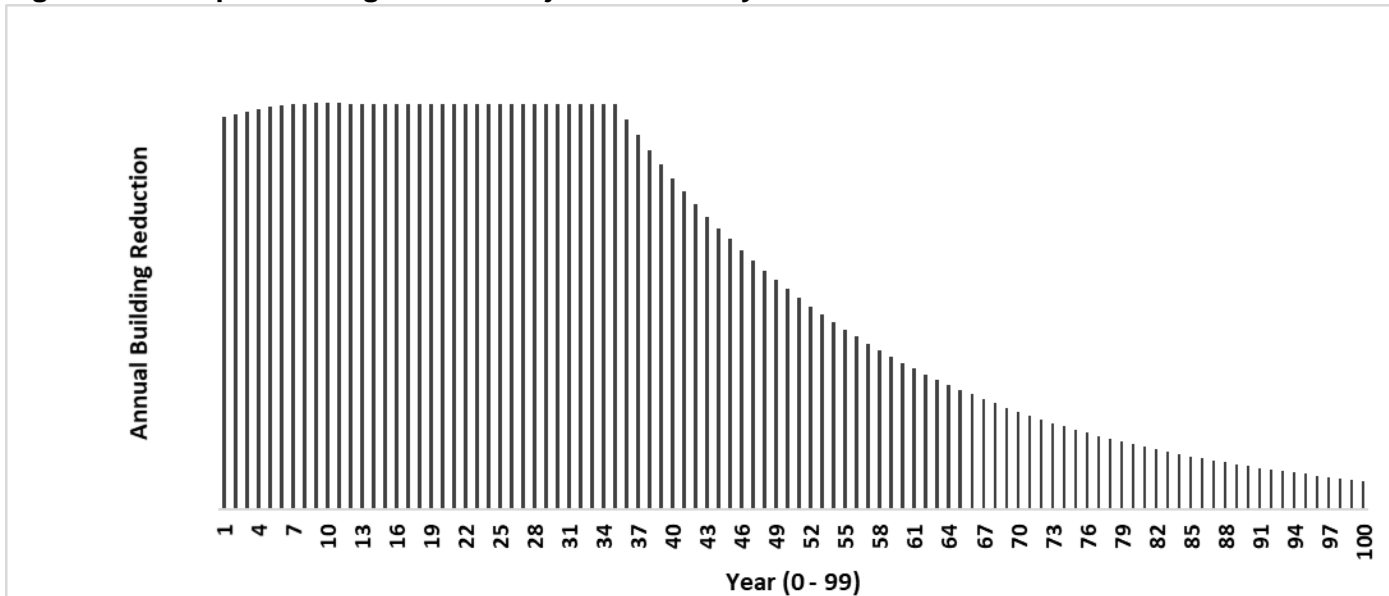


78. Figure 6 shows the natural attrition rate applied to an arbitrary building stock. Since the example building stock is arbitrary no figures are provided in the axis intentionally. The number of buildings follows the natural attrition rate for buildings starting at 1%, and increasing slightly up to 4% over 50 years, remaining stable

thereafter. Over one hundred years this attrition rate results in almost all buildings being fully replaced or demolished.

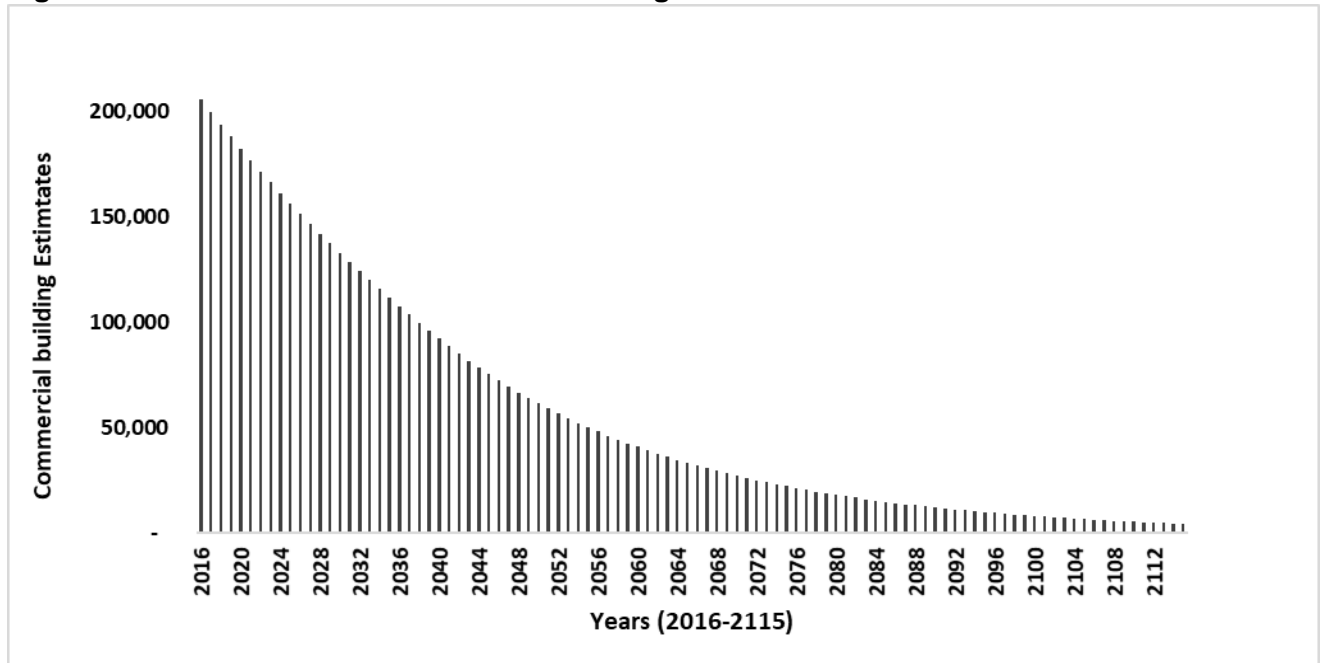
79. In the 2017 PIR, asbestos removal jobs decreased with the attrition rate. We are now modelling that as more buildings with asbestos are demolished then more asbestos removal jobs will be needed until there is a point where the increasing rate of demolition is overcome by the reduced building stock. Even with a high rate of building demolition, if there are fewer buildings containing asbestos there are fewer asbestos removal jobs. As buildings containing asbestos naturally degrade and need refurbishment or demolition, jobs to remove asbestos increase and then decrease. Newer buildings with asbestos show little deterioration of asbestos while older buildings show more. Older buildings need more asbestos removal but as there are fewer buildings with asbestos there are fewer asbestos removal jobs. This assumes there is no future changes to legislation that requires removal of asbestos from all buildings by a specific date.

Figure 7: Example building demolition jobs over 100 years



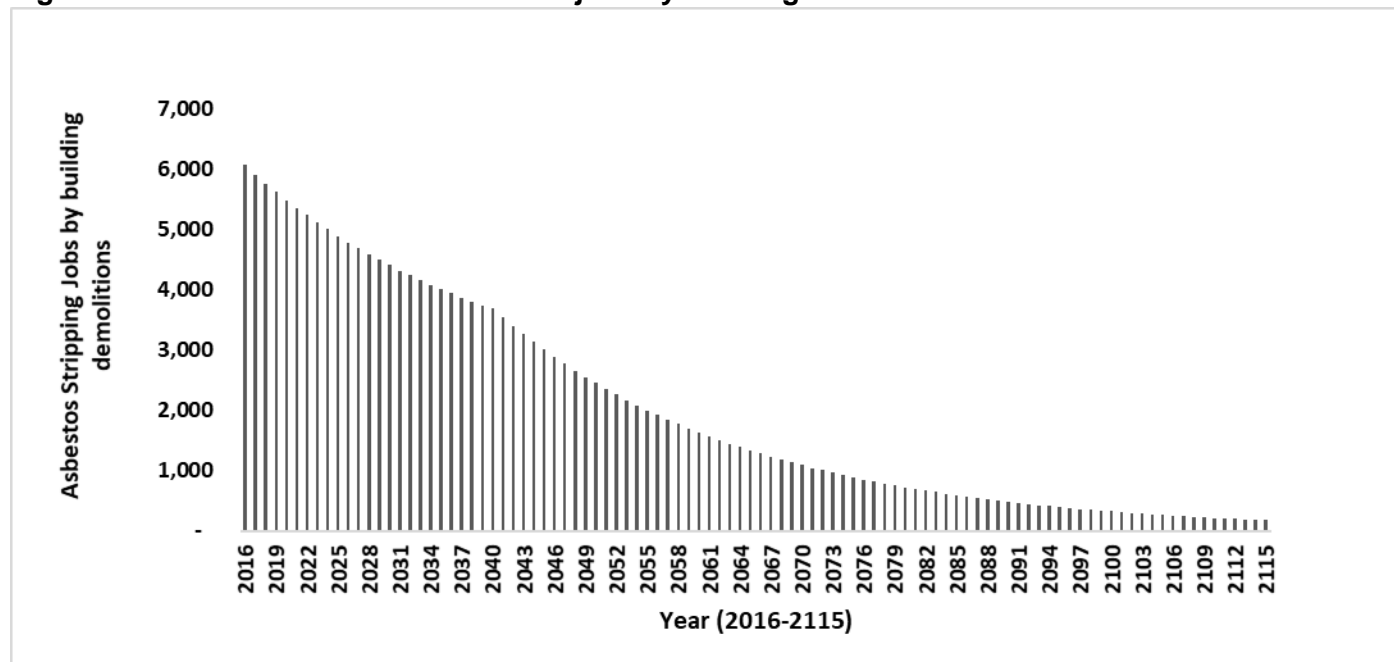
80. Figure 7 is an example schedule of the demolition jobs estimated from the changing building stock and the natural attrition rate. Since the example building stock is arbitrary no figures are provided in the axis intentionally. The rate of change in the jobs schedule from a year 0 increases at 1% for 4 years, is flat for 30 years, and then return to a stable 4% decrease for the remainder of the 100 years.
81. Applying the adjusted attrition rate to estimated commercial buildings in GB with asbestos in paragraph 73 and 74 as described in paragraph 68, a new commercial building stock schedule is estimated in Figure 8 below.

Figure 8: Low estimates of commercial buildings with asbestos 2016-2115



82. Figure 8 demonstrates the adjusted building stock schedule from 2016 to 2115, with the DETR stock estimate (paragraph 72). Figure 8 represents the rate of change in the building stock informing the adjusted natural attrition rate and an adjusted jobs schedule. Figure 8 also presents a low estimate of the commercial buildings which contain asbestos in GB. HSE's best estimate, of 310k commercial buildings with ACMs, is detailed in paragraph 197.
83. To estimate the number of ACM removal jobs, we used the adjusted buildings schedule above to estimate the number of asbestos removal jobs each year presented in the jobs schedule in Figure 9. This is then used to estimate a jobs rate for demolishing or removing asbestos from buildings which we apply to the 2016 costs.

Figure 9: Commercial asbestos removal jobs by building demolitions 2016-2115



84. Figure 9 shows the adjusted asbestos job schedule estimated from the adjusted natural attrition rate and building stock schedule. The asbestos jobs rate starts at 2016 (year 0) decreasing at approximately 2.5% per year, slowing to around 1.6% in 2040 before jobs begin to decline at a stable 4% per year. This occurs in 2040 after all the categories of commercial builds estimated by DETR have passed their individual tipping points and all the categories are reducing by 4%. Figure 7 illustrates this 'tipping point' at year 35, in figure 9 the last tipping point can be seen in 2040 for the newest buildings with asbestos. The asbestos removal schedule applied in 2022 declines at a faster rate than in the example (illustrated in Figure 7) and in the 2017 PIR due to applying earlier and varying build dates of installed ACMs in commercial buildings. As highlighted elsewhere in this report the actual rate of removal is declining as predicted by this attrition rate modelling but precise knowledge of the location of all ACMs in GB is not available. A central record of known ACMs is not maintained and to rule out the existence of ACMs in all buildings pre-2002 would require costly destructive investigations. Although the modelling we have set out here is based on the best evidence available, we could benefit from further research and modelling of the nature of the asbestos legacy in GB.
85. The adjusted attrition rate results in a series that is very similar to assuming that all of the ACM building stock was new in 1976. Since HSE estimated the peak exposure to asbestos was in 1964³⁵ this estimated attrition rate remains conservative but is an improvement over the 2017 PIR attrition rate.

³⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/598574/post-implementation-review-of-the-control-of-asbestos-regulations-2012.pdf

f) Results of 2022 PIR

General Assumptions

86. Administrative data held by HSE provides information on the numbers of licence holders currently, the annual number of jobs (both notifiable licensed work and NNLW), as well as the total number of employees working for asbestos licence holders. Assuming full compliance, notifications of work will include all moderate and high-risk asbestos removal jobs. We acknowledge there are at least some jobs which should be notified that HSE does not receive notifications for but expect this is a small proportion.

Figure 10: Total number of asbestos removal licences and notifications of work received by HSE

	2016	2021
Total licence holders	434	392
Notifications of licensed work	37,500	32,500
Average number of notifications per licence holder	86	83
Notifiable non-licensed work notifications	28,400	89,500

87. The number of asbestos removal licences held have decreased since 2016 from 434 to 392. The three-year average annual notifications for licensed work estimated from 2019/20 - 2021/22 decreased from 37,500 to 32,500 annual notifications from 2013/4-2015/16. This could be an impact of Covid-19 and national lockdowns, which reduced construction activity including asbestos removal jobs. However, the attrition rate modelling does predict that the number of jobs will decline. It is HSE opinion that urgent removal jobs continued throughout the pandemic but that some minor removal jobs were delayed. Anecdotal evidence that staff were put on furlough also supports this view. Therefore, we have decided to leave out figures from the past 3 years in the above averages or in other estimates updated in the 2022 PIR.
88. Using a three-year average from 2016/17 to 2018/19, the estimated number of annual licensed asbestos jobs is around 32,500. Using this data, the average number of jobs per licensee is around 83 jobs per annum.
89. Additionally, in the year 2021/22, HSE received approximately 89,500 notifications for NNLW jobs. This figure is approximate as the average was calculated from time-limited data which is not routinely aggregated or retained for long. The estimate is a crude doubling of the notifications received in a 6-month period to estimate activity per annum.
90. Updated estimates for both types of notifications were input into models and the cost impact was a modest saving of less than £10m total costs annually. Since the cost impact was negligible, we have decided to retain the 2016 asbestos jobs removal estimates as they err toward increased costs.
91. The number of employees working with asbestos in licensed firms is also factored into the total cost estimates that are reported on a per employee basis. The 2017 PIR indicated some 2,072 employees working with asbestos, an average of

approximately 5 per firm. Due to how this data is stored by HSE, it is not readily accessible and could not be reviewed in the 2022 PIR for comparison.

92. For the purposes of putting a scale on the costs, HSE has assumed that there is 100% compliance with the regulations which captures the full potential cost of CAR 2012 and errs to an increased estimate. However, in reality full compliance with the regulations is not always achieved and HSE regularly takes enforcement action as detailed in HSE's written submission to the Work and Pensions Committee³⁶ published in November 2021. If any estimate of actual compliance was to be made, significant assumptions would be required to do this because HSE does not inspect all jobs involving asbestos. Any compliance data is a snapshot in time but may not be representative across the industry. Therefore, we have used the conservative assumption of 100% compliance.

COSTS: Regulations 5 to 24 - Licensed work and NNLW

93. This section considers costs associated with licensed work and notifiable-non licensed work. The costs of non-notifiable work are considered from paragraph 184 onwards.
94. CAR 2012 regulates all work with asbestos including controlled removal of asbestos on a commercial basis. Regulations 5 to 24 are analysed for costs incurred by employers when reducing risk to as low as reasonably practicable for employees who are carrying out this work, and members of the public or other workers. These costs ultimately pass on to those who have commissioned the asbestos work. This is frequently the dutyholders for rented accommodation, public sector organisations, private landlords, local authorities, schools, hospitals, and commercial/business owners.
95. In 2017, analysts were not confident that the evidence gathered allowed for detailed cost estimation. This section sets out cost estimates for notifiable work (licensed or non-licensed) as analysed in 2017 with several improved estimates developed from our 2021 survey. As described in paragraph 3232, all regulation cost estimates were adjusted for this 2022 PIR, regulations with large total annual costs were re-estimated and those with low annual total cost were inflated with the GDP Deflator. GDP deflator inflation is detailed in paragraph 230 as an additional analysis. Initial estimates in 2017 were developed from responses to 5 questionnaires from various organisations. Each regulation presents an average of high and low responses to form a best estimate. In 2017 most responses were from 5 medium sized businesses and organisations (including a local authority) who on average employed 47 staff.
96. Within the regulations relevant to notifiable work only regulations 6, 7, 13, 18, 19, and 24 have been reviewed.

³⁶ <https://committees.parliament.uk/writtenevidence/39390/pdf/>

Figure 11: Percentage of 2017 PIR cost lines that survey respondents thought remained 'about right'

NNLW and Licenced Regulations	Percentage of cost estimates that Survey respondents thought were 'About right' in the 2017 PIR
6	50%
7	33%
13	100%*
18	100%**
19 and 20	50%
24	100%
Total	70%

*Survey design flaw detailed in paragraph 143

**Survey design flaw detailed in paragraph 98

97. Where about 70% of survey respondents thought 2017 estimates were 'about right', and free text responses did not suggest any need of an adjustment, figures were unchanged. Estimates for regulations 13 and 24 have been validated by the online survey.
98. Regulation 18 - as stated above the figures from 2017 were 'about right' according to the 2021 survey responses. However, one estimate required an adjustment due to a survey design flaw. For the cash costs per job, respondents were validating a figure of £112 per job rather than £130 per job estimated in 2017.
99. All other regulations have retained the 2017 PIR estimates and are unchanged. These include regulations 5, 8, 9, 10, 11, 12, 14, 16,17, 21, 22, and 23. In paragraph 230230 these regulations are updated to a 2021 price year through application of the GDP deflator.

Regulation 5 – Identification of the presence of asbestos

100. All figures used in regulation 5 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
101. This regulation requires employers to identify the presence of asbestos and its type and condition before starting any maintenance, demolition, or other work. It also sets out the requirement to arrange a survey if existing information on the presence of asbestos in the premises is incomplete or appears unreliable.
102. This estimate has retained the 2017 PIR figures as it has a relatively small impact on the total annual cost of CAR 2012. The range of costs provided per job to identify asbestos is from £50 per job (2 hours of work at £25 an hour) up to £140 (4 hours of work at £35 per hour). We will use a best estimate of £95 per job. Assuming 37,500 licensed jobs a year, the total cost is between a low of £1.88m to high of £5.25m, with a best estimate of **around £3.56m per annum for licensed work**.
103. Due to a low number of responses on NNLW costs in the survey, HSE made estimates. The costs of Regulation 5 will be much lower for NNLW work than licensed work. It was expected that variation in the cost would be driven by the time

taken to complete identification rather than the wage. As such, HSE estimated that it would take 15 minutes per job at £25 an hour. Assuming 28,400 NNLW jobs a year, this leads to single cost estimate of **£178k per annum for NNLW**. No range was developed for this estimate in the 2017 PIR.

Regulation 6 – Risk assessment

104. This regulation requires employers to carry out an assessment to identify the risks of exposure to asbestos. It sets out the requirements to record any significant findings and put in place steps to prevent, or reduce, exposure to asbestos.
105. The average cost of writing a risk assessment for working with asbestos was estimated to be between £140 (4 hours at £35 an hour) and £210 (6 hours at £35 per hour). The average cost per job is therefore estimated to be £175. No disagreement with this estimate arose during 2021 survey verification as respondents agreed this cost was 'about right'. Assuming 37,500 jobs per year, the total cost to the licensed sector of this regulation is estimated to have a low cost of £5.25m and a high cost of £7.88m, resulting in a best estimated total **cost of £6.6m per annum**.
106. Considering the nature of the jobs covered under NNLW, in 2017 HSE experts advised that the costs of Regulation 6 for those engaged in NNLW would be much lower than for licensed work and the estimates reflected this. The 2021 survey respondents were split in their agreement with the 2017 PIR estimate so an improved estimate was made. With a low estimate informed by the 2017 PIR of 15 minutes and a high estimate of 42 minutes informed by responses to the 2021 survey, we get an average best estimate of 29 minutes per job. At £35 an hour and assuming 28,400 NNLW jobs per year, we estimate a low total cost of £248k and a high of £704k with a total best cost estimate of **£476k per annum for NNLW**.
107. Respondents to the 2017 stakeholder engagement reported there would be other costs associated with regulation 5 and regulation 6 for licensed work, and these ranged between £150 per job and £250 per job. No further details of the type of costs were obtained. Other costs could include travel and accommodation when reviewing a site or desk research completed before winning a contract. The average estimate is therefore a best estimate of £200 per job. Assuming 37,500 jobs per year the low total cost is estimated to be £5.63m with a high of £9.38m and a best estimate for total cost of **£7.5m per annum**. Based on advice from HSE experts, we would not expect there to be other costs for NNLW.

Regulation 7 – Plans of work

108. This regulation requires employers to prepare a written plan before work on asbestos is carried out, including details of the work, and the appropriate actions to control risk and prevent harm.
109. The cost of plans of work can be split into cash costs and staff costs. Cash costs of preparing written plans could include additional site-specific considerations, for example, completing work around a factory assembly line or in a school to avoid work stoppages or impacting children. Respondents reported that cash costs range between £350 and £450 per job, with a best estimate of the average of £400 per job.

Assuming 37,500 jobs per annum, the total cost best estimate is **£15m for licensed work**, with a low estimate of £13.1m and a high estimate of £16.9m.

110. A majority of the 2021 survey respondents thought the 2017 PIR estimated staff costs were too low for both wages and hours taken. The 2017 PIR estimated 5 hours to complete written plans, while the midpoint of those who thought the PIR estimate was too low preferred an estimate of 7 hours. The time to prepare a written plan was best estimated to be an average of 6 hours since respondents were split by the proportion who thought the PIR 2017 figure was about right and those who thought it was too low. A best estimate for the wage of those who prepare written plans was informed by all responses as over 60% of respondents thought the wage estimated in the 2017 PIR was too low. A median of all responses to this question produced a best estimate of £35 per hour. A reasonable range of high and low cost was selected from a low estimate from the 2017 PIR of £23 per hour and a high estimate based on responses to the 2021 survey of £40 per hour. An average of the high and low was not considered appropriate as it erred toward a lower cost.
111. Staff costs range from a low of £115 per job (5 hours per job at £23 per hour estimated in the PIR 2017) to £280 per job (7 hours per job at £40 per hour estimated as a high range from 2021 survey responses that disagreed with 'about right' estimate). The best estimate is £210 per job (6 hours at £35 per hour). The high, low, and best costs per job were multiplied by the number of licensed jobs to aggregate a total annual cost. The total costs for 37,500 jobs are estimated at a low of £4.31m to a high of £10.50m with a best estimate of around **£7.88m per annum for licensed work**.
112. Considering the nature of the jobs covered under NNLW, HSE experts have advised that the costs of Regulation 7 for NNLW will be much lower than for licensed work and cash costs are not expected, only staff costs. Costs are lower because NNLW should be more routine, and businesses are likely to have sample plans available. The 2017 PIR estimated between 15 minutes and 45 minutes per job, with a best estimate of 30 minutes. Wages are estimated at between £23 and £40 an hour, with a best estimate of £31.50. When multiplying through, the cost per job had a low of £5.75 and a high of £30.00 with a best estimate of £15.75 per job. Assuming 28,400 NNLW jobs per year, this leads to a low total cost of £163k and a high of £852k with a best estimate of **£447k per annum for NNLW³⁷**.

Regulation 8 – Obtaining a licence for work with asbestos

113. This regulation requires employers to obtain a licence from HSE before they can carry out any licensable work with asbestos. The one-off cash cost of a licence payable to HSE was a fee of £3.365k as of September 2016.
114. All figures used in regulation 8 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
115. Evidence was gathered in the 2017 PIR through focus groups which estimated that the staff costs of applying for a licence for the first time were between £2k (point

³⁷ Aggerated high and low do not average to the aggregated best estimate due to the product of averages of a series not equalling the average of a product of the constituent series.

estimate) and £4k (100 hours at £40 per hour) with a best estimate of £3k. Very similar estimates were made by respondents for the staff costs of renewing a licence. These were estimated to be between £1.8k (40 hours at £45 per hour) and £4.2k (the higher end was a more complex estimate, including different amounts of time spent on the task by a number of people). The best estimate is therefore **£3k** every time the licence is renewed.

116. On average, licenses are renewed every 3 years and for simplicity, we retained the 2017 assumption that the total number of license holders will remain constant. Historically HSE's policy was to issue licences for periods of up to 3 years but now experienced asbestos license holders are usually granted licences for the full 3-year period. We assume that any firm that leaves the market and doesn't renew their licence will be replaced by a new business entering the market. However, administrative data has shown a decline in licences from 434 in 2016 to 392 in 2021. Due to the impacts of Covid-19 we cannot be certain if this is an ongoing decline in asbestos removal or a consequence of reduced economic activity generally. We do expect the total number of licences to decrease as the remaining stock of asbestos-containing materials decreases, but this will be accounted for by the adjustment described in paragraph 6565. The figure of 434 has been retained for the current estimate as Covid-19 has made evidence of change inconclusive.
117. HSE holds data on the number of new licences issued each year but this information only recently came to the notice of the economist team. New licences cost the same fee as renewing licences however they are only issued for 1 year. At this time, it has not been considered proportionate to incorporate this data as it is expected to have a low impact on the overall total aggregated costs of CAR 2012. This represents a relatively small underestimate of these costs.
118. With a total of 434 licences at present, we can assume a third (145 licences) will renew or be issued for the first time every year. Thus, the yearly cash costs of this are £487k per annum. This estimate is a point estimate as licence costs are fixed, and the estimated proportion of renewals is a point estimate assumption not suited to a range. Staff costs for the renewal process are estimated to be around **£434k per annum**, with a low estimate of £260k and a high estimate of £608k.
119. This cost is not applicable to NNLW, as licences are, by definition, not required. All figures for regulation 8 have been retained from the 2017 PIR estimate due to the relatively low total cost.

Regulation 9 – Notification of work with asbestos

120. This regulation requires employers to notify the appropriate enforcing authority of proposed work which is either licensable or NNLW. It also outlines the requirements to notify any material change which might affect the particulars of the original notification. Notifications are based on the risk of the type of asbestos being worked on and the method of work being completed.

121. All figures used in regulation 9 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
122. Respondents in 2016 estimated that the staff costs for completing a notification are between £20 and £50, with a best estimate of £35. HSE receives approximately 37,500 notifications for licensed work and 28,400 for NNLW per annum. The cost of notifications for licensed work and NNLW is estimated **to be around £2.3m per annum**, with a low estimate of £1.3m and a high estimate of £3.3m.
123. No issues were identified with these estimates during the 2017 PIR verification process and these figures have not been updated for the 2022 PIR as they are relatively low total costs.

Regulation 10 – Information, instruction, and training

124. This regulation requires employers to make sure that anyone liable to disturb asbestos during their work, or who supervises such employees, receives the correct level of information, instruction, and training to enable them to carry out their work safely and minimise risks to themselves or others.
125. All figures used in regulation 10 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
126. Existing employees receive a combination of in-house and external training each year that has been assessed on a per-operative basis rather than by the cost or frequency of training. Respondents to 2017 PIR focus groups initially estimated cash and staff costs of external and in-house asbestos training on a per annum basis per employee. However, during the verification process respondents agreed that the cash and staff costs of training would be better calculated per operative and as a single figure. Although figures are estimated in annual costs per employee, this does not necessarily mean that training takes place at annual intervals.
127. Respondents to the 2017 PIR estimated the cost of in-house training to be between £75 per employee and £250 per employee annually. A best estimate of the average cost is therefore £162.50 per employee. Given that the total number of employees working for license holders is around 2,072 the total cost is estimated **to be £337k per annum**, with a low estimate of £155k and a high estimate of £518k.
128. For external training, this was estimated at around £360 per operative per annum, which we understand to include both the staff cost and cash cost. Due to low cost impacts, these figures were not reviewed in 2021. Using the figure of around 2,100 operatives in the industry, the total costs per annum are estimated to be **around £746k per annum**.
129. For in house training, this was estimated at around £860 per operative per annum. Using the figure of around 2,100 operatives in the industry, the total costs per annum are estimated **to be around £1.78m**.

130. Respondents in 2017 estimated that the staff costs of employees providing information to other employees about asbestos is between £70 per annum and £200 per annum. These figures were not reassessed for this PIR. Focus group discussion suggests 2 to 8 hours to complete this work which could be the product of £35 or £25 per hour. The average of these costs informs a best estimate of £135 per annum. The total per annum costs are estimated using the total number of licence holders of 434, thus the total estimated cost per annum of providing information to other employees **is about £58.6k** with a low estimate of £30.4k, and a high estimate of £86.8k.
131. The costs of information, instruction and training are considered to cover both licensable work and NNLW, as whatever training is required to be able to undertake the former, will be enough to undertake the latter.
132. All figures for regulation 10 have been retained from the 2017 PIR estimate due to a relatively low total cost. As stated above, these estimates then include an inflation adjustment completed with the GDP deflator in paragraph 230230.

Regulation 11 to 14 – Preventing exposure, use and maintenance of control measures and provision of protective clothing

133. Figures used in regulation 11, 12, and 14 have been retained from the 2017 estimates. These sections were not updated as they were relatively low cost and estimates were not considered likely to have substantially changed at this time.

Regulation 11 - Measures to control exposure

134. This regulation requires employers to prevent employees being exposed to asbestos or, if this is not possible, to put in place the measures and controls necessary to reduce exposure to as low as reasonably practicable.
135. Respondents in 2017 estimated that on-going cash costs of control measures for a licence holder were between £950 per annum and £45k per annum. This large range was investigated, and it was found the £45k estimate had been based on actual expenditure over the year. Due to such a small number of respondents, (just 5 returned questionnaires for licensed work) it is not possible to say whether the range is due to different types of licence holders having different compliance costs, or underestimates. For proportionality, and these estimates being retained from 2017, this was not investigated further. The midpoint of the range is used, being an average cost, which allows for the fact some of the businesses might have higher costs while some might have much lower ones, as was used and approved for the 2017 PIR. The average on-going cash costs of the control measures inform the best **estimate of £23k**. There is some uncertainty about this estimate, due to the range of possible cash costs, despite the verification process carried out in 2017 with focus group participants. However, if extrapolated over all 434 licence holders, the total cost per annum of this provision is **estimated to be £9.97m**. The low estimate is £412k and the high estimate is £19.5m. These costs would cover both licensed work and NNLW undertaken by the firm.
136. Respondents in 2017 estimated that on-going staff costs would be between £2k per annum and £4k per annum. The average on-going staff costs inform the best

estimate of £3k per annum. Extrapolated over all current licence holders, this gives a best estimate for total **costs per annum of £1.3m**, with a low estimate of £868k and a high estimate of £1.7m. These costs would cover both licensed work and NNLW undertaken by the firm.

Regulation 13 – Inspection and maintenance of control measures (external competent person)

137. This regulation requires employers to carry out regular inspection and maintenance of control measures to make sure they are kept in good efficient working order. It also requires a competent person to test and examine exhaust ventilation and respiratory protective equipment (RPE) at suitable intervals and for records of examinations and tests to be kept for at least five years. In this group of regulations only regulation 13 prices have been updated in the 2021 survey.
138. Respondents in 2017 estimated that the cash costs of a competent person examining exhaust ventilation equipment is between £200 and £3k per annum, this range could be explained by variation in size of the equipment. Average cost per annum is taken as a best estimate of £1.6k. Extrapolated across all licence holders, the best estimate of total cost is £694k per annum, with a low estimate of £86.8k and a high estimate of £1.3m. These costs would cover both licensed work and NNLW undertaken by the firm.
139. Estimates of the staff costs of a competent person examining exhaust ventilation equipment range between £120 per annum and £3.4k. These estimates were retained despite a wide range as a proportionate use of resources due to the low cost of the regulation, and as it was accepted in 2017. An average staff cost per annum **of £1.76k** is taken as a best estimate from the range. Extrapolated across all licence holders, this gives a total cost best **estimate of £764k per annum**. The low-cost estimate is £52.1k, the high estimate is £1.48m. These costs would cover both licensed work and NNLW undertaken by the employer.
140. Respondents in 2017 estimated that the cash costs of keeping records of examinations is around £960 per annum (£80 a month). Extrapolated over all licence holders gives a **cost per annum of £417k**. No range of costs is provided to inform low and high estimates. These costs would cover both licensed work and NNLW undertaken by the firm.
141. Respondents in 2017 estimated that the staff costs of keeping records of examinations is between £80 per annum (4 hours at £20 an hour) and £1k (no breakdown provided), with a best estimate of £540. No issues with these estimates were noted during the verification in 2017 and they are not re-estimated due to low costs. Extrapolated across all licence holders gives a best estimate of total **per annum costs of £234k**, with a low estimate of £34.7k and a high estimate of £434k. These costs would cover both licensed work and NNLW undertaken by any employer.

Regulation 13 - Regular inspection and maintenance of other control measures (in-house competent person)

142. Respondents in the 2017 PIR estimated that the cash costs of inspecting control measures were around £5k per annum and staff costs were between £160 (8 hours

at £20 per hour) and £46.7k (2,000 hours at various wage rates). In 2017 an average of £160 and £46.7k was used to form a best estimate of staff cost of **£23.4k per annum** and this was taken as the best estimate for the 2021 survey. No description of cash cost was provided in the 2017 PIR and this PIR did not have the opportunity to review these estimates further with stakeholders.

143. In the 2021 survey a design error resulted in cash costs and staff costs questions for regular inspection and maintenance of control measures being swapped. Respondents were asked if the staff costs of £5k per licence holder to complete regular inspection and maintenance of control measures was about right instead of the £23.4k reported in the 2017 PIR. The same respondents were asked if the cash costs of £23.4k per licence holder to complete regular inspection and maintenance of control measures was about right, instead of £5k. Both questions received majority agreement that the costs were 'about right'. We acknowledge this survey error and with the agreement of HSE experts have accepted the 2021 survey responses. We have made this decision since the swapped cost lines are reasonable even though they are the opposite of the 2017 PIR assessment. In any case, the errors cancel each other out in total.
144. It is the current HSE expert opinion that the £160 low estimate of staff costs in the 2017 PIR was not a reasonable low range figure to use for the swapped cash costs. We have adjusted the low cash costs estimate by the average of the minority of respondents that disagreed with the cash costs of £23.4k per licence holder which provides a low estimate of approximately £18.5k. Adding the point estimate of £5k per licence holder of staff costs range we have a combined low of £23.5k and high of £51.7k per licence holder with a best estimate of £28.4k. Extrapolated across all licence holders gives a **best estimate of a total cost of staff and cash costs of £12.3m**, with the low estimate of £10.2m and a high estimate of £22.4m. It is HSE experts' view that these costs would cover both licensed work and>NNLW undertaken by the firm.

Regulation 14 - Requirements for employers to provide employees with personal protective clothing

145. This regulation requires employers to provide employees with adequate personal protective clothing appropriate for the work they will be doing. It also sets out the requirement for proper cleaning, maintenance, and storage of the clothing.
146. Respondents in 2017 estimated that the cash costs of protective clothing are between £200 and £4.5k per employee. Therefore, an average cost of clothing per employee per year **is £2.35k** at best estimate. The estimate was discussed with HSE experts. They explained that protective clothing for licensed work can be very costly. Licensed workers usually wear 2 disposable Tyvek type high-density polyethylene full hooded overalls per 4-hour shift. So, if they do more than 1 shift per day, each worker uses 4 sets of overalls which are then thrown away. Workers might also wear reusable rubber boots, and gloves for set up and dismantling work. Using the number of employees in the industry (2,072), the best estimate of total cost for all employees per annum is **estimated to be £4.87m per annum**. The low estimate is £414k and the high estimate £9.3m. These costs are expected to cover protective clothing that would be used both for licensed work and>NNLW undertaken by the firm.

147. Respondents in 2017 estimated that the staff costs of protective clothing are between £850 per annum (1 hour per week at £16 an hour) and £5.5k (3 hours per week at £35 per hour). Average staff costs are therefore the **best estimate of £3.18k**. Extrapolated across all licence holders gives a best estimate of total **cost of £1.38m** with a low estimate of £369k and a high estimate of £2.4m. These costs are expected to cover items that would be used both for licensed work and>NNLW undertaken by an employer.
148. Respondents estimated that the cash costs of cleaning protective clothing are between £0 and £15k per annum. A zero-cost interpretation is based on understanding that a large amount of it will be disposed of after use. The average cost of cleaning is taken as the **best estimate at £7.5k** per annum. Extrapolated across all 434 licence holders gives a best estimate of **annual cost of £3.26m**, with a low estimate of £0 and a high estimate of £6.5m. These costs are expected to cover items that would be used both for licensed work and>NNLW undertaken by the firm.
149. Respondents estimated that the staff costs for cleaning protective clothing are **around £160 per annum**. This cost is low due to much of it being disposable. No issues were noted with this estimate during the verification and total cost estimates per annum for all licence holders is **estimated to be £69.4k**. There was no range estimated in these costs so no low and high estimates can be provided. These costs are expected to cover items that would be used both for licensed work and>NNLW undertaken by the employer.
150. It is possible that there is some overlap between the costs of control measures and the costs of protective clothing. If so, this will lead to an overestimate of the costs.

Regulation 16, 17 and 23 – Duty to prevent or reduce the spread of asbestos, cleanliness of premises and plant, and provision of washing and changing facilities

151. Regulation 16 requires employers to prevent or reduce the spread of asbestos anywhere work is being carried out under their control.
152. Regulation 17 requires employers to make sure that work areas, plant and equipment used for asbestos work are kept clean. It also requires the employer to make sure the area is thoroughly cleaned after work is finished.
153. Regulation 23 requires all employers to provide suitable and sufficient washing, changing and storage facilities for employees who are exposed to asbestos. The Approved Code of Practice further outlines the specific requirements for hygiene facilities for licensable work.
154. Figures used in regulation 16, 17, and 23 have been retained from the 2017 estimates. These sections were not updated as it was relatively low cost and was not considered proportionate to explore further.
155. Respondents in 2017 estimated that the cost of using work methods that reduce the risk of disturbance of asbestos as described in regulation 16 are approximately £600 per annum for cash costs and staff costs, respectively. Respondents estimated that the cost of keeping work areas clean is around £100 in cash costs and £500 in staff

costs per annum. Extrapolating all these costs across the total number of licence holders, the cost impacts are estimated to **be around £781k**. The cost estimates from the 2017 PIR do not have a range, so the total cost is a point estimate. These costs would cover both licensed work and NNLW undertaken by the firm.

156. Respondents estimated that the cash cost of providing washing and changing facilities to be between £250 and £1.2k. The average cost provided the **best estimate of £725 per annum**. No issues were identified with this estimate during the verification process. Extrapolating all these costs across the total number of licence holders, the cost impacts are estimated to be around **£315k per annum**. The low-cost estimate is £109k and the high estimate £521k per annum. These costs would cover both licensed work and NNLW undertaken by the firm.
157. It is possible that there is some overlap between these costs and those for control measures required for regulations 11 to 14. If so, then this will lead to an overestimate of costs.

Regulation 18 – Demarcated work areas, eating and drinking facilities

158. This regulation requires employers to make sure that areas where asbestos work is being carried out are separated, clearly marked, and restricted to those required to work in the area. It also requires the employer to provide suitable facilities for employees to eat and drink.
159. The annual cost of identifying and demarcating areas where work is carried out ranges from a low of £20 (approximately 1 hour at £20 per hour) to a high of £240 (approximately 7 hours at £35 per hour) estimated in the 2017 PIR. The best estimate determined by the 2021 survey estimate was £112 per job. Respondents thought 4 hours at £28 per hour was about right for time and wages to identify and demarcate areas. The total costs for 37,500 jobs per annum are estimated to **be £4.2m for licensed work**, with a low estimate of £750k and a high estimate of £9.0m.
160. HSE experts estimated, and the 2021 survey confirmed, costs of around £1k per job for barriers and fencing. Plastic sheets are commonly used and these items are disposable. The total costs for 37,500 jobs per annum are estimated to be **£37.5m for licensed work**. This is a point estimate as no range was estimated in costs for barriers and fencing.
161. Considering the nature of the jobs covered under NNLW, experts in HSE advised for the 2017 PIR that the costs of Regulation 18 for NNLW will be much lower than for licensed work. Respondents to the 2021 survey validated the previous expert view and suggested that 15 minutes per job, at £23 per hour was reasonable for the typical NNLW job, and no additional cash costs for barriers and fencing were expected by HSE experts in 2017 or in 2022. NNLW is routine lower risk work which usually requires simple barriers to separate people from work areas which could include signage, reusable fencing, or warning tape. Assuming 28,400 NNLW jobs per year, this leads to a point estimate of costs of **£163k per annum for NNLW**.

Regulation 19 and 20 – requirements for employers to provide air monitoring, standards for air testing and site clearance certification

162. Unless the control limit will not be exceeded, regulation 19 requires employers to arrange regular monitoring of airborne asbestos fibres and keep records of the results. It sets out how long the records should be kept and that they should be made available to employees, or the regulator as required.
163. Regulation 20 requires employers performing their own air testing to do it in a way that meets the criteria as set out in ISO 17025. It also requires employers to make sure that any person they engage to perform asbestos air testing and site clearance is competent and accredited by the appropriate accreditation body.
164. Respondents in 2017 estimated that the annual cash cost of monitoring the exposure of employees to airborne fibres is **around £450**. Respondents also estimated that the staff cost of monitoring airborne fibres is between around £4.9k and £9k per annum. No issues were noted with this range during the verification and so an average cost has been used as a best estimate of **£6.95k per annum**. Extrapolated across all licence holders, the total cost of the monitoring of fibres is estimated to be **around £3.21m**, with a low estimate of 2.32m and a high estimate of £4.1m.
165. Respondents in 2017 estimated that the cash costs of engaging a competent person to test the air is between £250 per job and £560 per job. Each licensed asbestos job requires clearance air testing at the completion of work to ensure that the site is safe for reoccupation. Once safe levels are achieved, the workers remove the asbestos containment measures. The average cash cost therefore informs the best estimate of £405 per job. Respondents to the survey undertaken in this PIR agreed with this cost. Extrapolated over the industry using the number of licensed jobs of 37,500 the total costs are **estimated to be £15.2m**, with a low estimate of £9.38m and a high estimate of £21.0m.
166. Respondents estimated that the staff costs of engaging someone to test the air is around £17 per test. Assuming that the tests are performed on a per job basis, the total costs per annum **are estimated to be £638k**. No range was estimated in these costs based on survey agreement on the staff costs. No issues were noted during the verification.
167. Based on HSE expert opinion, an estimated zero to 1% of NNLW jobs required the testing of air, with a best estimate of 0.5%. NNLW jobs will only require air testing in cases where their client requests it is done, as it is not a requirement of the regulation. This is applied across a total of 28,400 NNLW jobs. The same estimated cash costs and staff costs of engaging someone to test air as in licensed work - £405 in cash costs and £17 in staff costs per job – were used as survey respondents agreed that these were about right for NNLW. The total cash costs per annum are **estimated to be £57.5k**, with a low estimate of £0 and a high estimate of £164k. and the total staff costs are **an estimated £2.41k**, with a low estimate of £0 and a high estimate of £4.83k. These costs were not estimated in the 2017 PIR and it is HSE expert view that the costs are not required by the regulation. This cost has been left in as it has relatively low impact on the overall model net present value or total aggregate costs.

Regulation 21 – standards for analysis

168. This regulation requires employers performing their own analysis of material to check for asbestos in a way that meets the criteria set out in ISO 17025. It also requires employers to make sure any person they engage to perform analysis is accredited to the same ISO standard by the appropriate body.
169. Figures used for regulation 21 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
170. Respondents in 2017 estimated that the total cash costs are between £10 and £25 per job. Average cost provides the best estimate of £17.50 per job. HSE experts advised that this estimate was also reasonable for NNLW. Extrapolated by the 37,500 licensed jobs and 28,400 NNLW jobs, this gives a total **best cost estimate of around £1.15m**, with a low estimate of £659k and a high estimate of £1.65m. The respondents also provided staff cost estimates of around £90 per job (4 hours at £22.50 an hour), which was also deemed a reasonable estimate for NNLW jobs. No low or high estimates were provided for these costs. When extrapolated by the number of licensed and NNLW jobs, this gives a best estimate of total cost of **£5.93m per annum**.

Regulation 22 – Health records and medical surveillance

171. The regulation requires employers to arrange appropriate medical examinations for any employees who carry out licensable or notifiable non-licensable work. It also sets out what health records employers must keep and for how long.
172. Figures used for regulation 22 have been retained from the 2017 estimates. This section was not updated as it was relatively low cost and was not considered proportionate to explore further.
173. Respondents in 2017 estimated that the cash costs of maintaining a health record for each employee is between £250 and £300 per annum. The best estimate is £275 per employee per annum. Extrapolated by the 2,072 employees in the industry, **total costs are estimated to be £570k** with a low estimate of £518k and a high estimate of £622k. These costs would cover both licensed work and NNLW undertaken by employers.
174. Respondents estimated that the staff costs of maintaining a health record for each employee is between £240 per annum (16 hours a year at £15 per hour) and £1.82k per annum (1 hour a week at £35 per hour). Average cost estimate informs a best estimate of around £1.03k per annum per employee. Extrapolating across the number of employees in the industry **the best cost estimate is £2.13m**, with a low estimate of £497k and a high estimate of £3.77m. These costs would cover both licensed work and NNLW undertaken by employers.
175. Respondents in 2017 estimated that the cash cost of a medical examination per employee is between £85 per person and £180 per person. Average cash cost estimate is therefore a best estimate of around £133 per person. Extrapolating across the number of operatives employed in the industry, total costs per annum are a **best estimate of £275k**, with a low estimate of £176k and a high estimate of

£373k. These costs would cover both licensed work and NNLW undertaken by employers.

176. Respondents in 2017 estimated that the staff cost of a medical examination is between £40 and £100. The average staff costs of a medical examination therefore inform a best estimate of £70 per person per annum. Extrapolating based on number of operatives, gives a **total cost per annum of £145k** with a low estimate of £82.9k and a high estimate of £207k. These costs would cover both licensed work and NNLW undertaken by employers.

Regulation 24 – storage, distribution and labelling of raw asbestos and asbestos waste

177. This regulation requires employers to make sure that asbestos and asbestos waste is properly packaged, labelled, stored, and transported.
178. Respondents in 2017 estimated that the cash cost of ensuring asbestos is properly packed, labelled, stored, and transported is between £1k and £1.4k per job. Average costs are therefore calculated as a best estimate of £1.2k per job. Respondents to the survey carried out for this PIR agreed with this estimate. Extrapolated over the 37,500 licensed jobs, **total costs per annum are estimated to be £45m** for licensed work, with a low estimate of £37.5m and a high estimate of £52.5m. Considering the nature of the jobs covered under NNLW, HSE's view is that the costs per job under Regulation 24 will be much lower than for licensed work. We have estimated a cost per job equating to 10% of the cost for licensed work, £120 per job, with a low estimate of costs at £100 per job and a high estimate of £140 per job. This is also an estimate that respondents to the survey for this PIR agreed with. Extrapolated over the 28,400 NNLW jobs, total costs per annum are estimated to be **£3.41m for NNLW**, with a low estimate of £2.84m and a high estimate of £3.98m.
179. Respondents in 2017 estimated that the staff costs of ensuring asbestos is properly packed, labelled, stored, and transported are approximately £2.4k per annum. Extrapolated using a total number of licence holders of 434, total costs are **estimated to be £1.04m**. These costs would cover both licensed work and NNLW undertaken by employers and are a point estimate as survey respondents strongly agreed with the cost estimate, so no appropriate range was drawn from the responses.
180. Respondents in 2017 estimated that other costs will be between £80 and £3k. The average estimate is therefore a best estimate of £1.54k per annum per licence holder. Extrapolated using total number of licence holders, total costs are **estimated to be £668k** with a low estimate of £34.7k and a high estimate of £1.30m. These costs would cover both licensed work and NNLW undertaken by employers.

Total costs of licensed work and notifiable non-licensed work (NNLW)

181. Presented above is the estimated cost of each regulation, as provided and verified first by respondents for licensed work in 2017, and then, in cases with uncertain or high costs, checked again in 2022 with a larger survey. They are presented firstly as either the per annum cost, the per job cost or the per employee cost. These figures have been converted to total costs for the industry per annum by extrapolating by

the number of licence holders, the number of notifications received for licensed work (and therefore jobs) and the estimated number of employees in the industry. These costs have also been used to estimate the costs of NNLW.

182. Adding together all the totals gives an estimate of the total cost of licensed work and NNLW of between £141m and £270m with a **best estimate of £205m per annum**.
183. Ultimately, the cost of the CAR 2012 regulations for licensed and NNLW falls on a range of stakeholders, from public sector organisations to commercial and domestic clients who need asbestos made safe or removed as costs will be passed through from asbestos contractors to their customers through the prices charged.

COSTS: Regulations 5 to 24 - Non-notifiable work

184. This activity is one where the work is sporadic and of low intensity, the control limit will not be exceeded and one of four conditions in regulation 3(2) is met. Examples of non-notifiable work can be found on the HSE website³⁸. They include careful handling of largely intact low risk asbestos cement products and other materials where the fibres are held within a binding matrix. In very limited circumstances some short duration work with asbestos insulating board (AIB) and asbestos insulation (AI) may also be non-notifiable work.

Risk Assessments

185. Undertaking and writing up risk assessments for asbestos incurs costs on many construction projects (both domestic and commercial). To determine the total cost of these assessments it is necessary to consider the proportion of existing building stock that contains asbestos, the number of construction projects per year, and the costs of writing an asbestos risk assessment for non-notifiable work.
186. The number of projects that might require an asbestos risk assessment for non-notifiable work can be estimated from the total number of construction projects carried out each year. In the 2017 PIR, an estimate was gathered from the Impact Assessment (IA) for the Construction (Design and Management) Regulations 2015 (CDM 2015)³⁹. This was estimated to be 250k commercial projects and 3.3m domestic projects, totalling around 3.5m construction projects. Included within these projects were licensed and notifiable non-licensed asbestos work, totalling 37,500 and 28,400 respectively. Removing these jobs from the estimation, the 2017 PIR settled on 3.5m construction projects a year.
187. In the 2022 PIR, we recalculated the CDM 2015 IA report estimate with available data to determine which households had recently completed improvements. In the CDM 2015 IA, approximately 20% of surveyed households had completed work that year and 64% of these were owner-occupied domestic residences. We have not commissioned follow up research to verify this estimate for the CAR 2022 PIR. Using these proportions and the number of domestic homes in 2016⁴⁰ eligible for council tax in England and Wales of approximately 25m, there are estimated to be over 3.2m domestic buildings that have had construction work carried out.

³⁸ <https://www.hse.gov.uk/asbestos/licensing/non-licensed-work.htm>

³⁹ <http://www.legislation.gov.uk/ukxi/2015/51/impacts>

⁴⁰ VOA - Table CTS0P1.0_2016 <https://www.gov.uk/government/statistics/council-tax-stock-of-properties-2016>

188. In the 2017 PIR, the number of commercial construction projects was estimated to be 250k. This figure was estimated by doubling the construction notifications received by HSE to account for additional projects that do not meet the requirements for notification. Doubling the construction notifications figure was justified on the grounds that there were at least as many small construction projects not meeting the requirements to be notified, as there were large notifiable projects. This estimate is low quality and uncertain. Reviewing HSE administrative data⁴¹ from 2015/16 to 2017/18, the average number of annual construction project notifications were lower than estimated in the 2017 PIR with a little over 67k projects and if doubled would be almost 134k projects (116k projects fewer than estimated in the 2017 PIR). The CDM 2015 IA used this figure to estimate a business cost saving or benefit to society and erred toward lower benefits. Given the high level of uncertainty and erring toward a lower count in the CDM 2015 IA, HSE recommends maintaining the original 2017 PIR estimate of 250k projects as it errs toward increased costs.
189. The estimate of the number of construction projects is not a direct measure for non-notifiable asbestos work and should be considered a high estimate as it is not anticipated that workers would encounter asbestos during all projects.
190. A further adjustment to the figure would be to consider the proportion of construction projects that require workers to interact with asbestos. Since this evidence is not proportionate to collect at this time, this analysis looks to adjust the count by the proportion of properties that could contain asbestos in GB. A central record of buildings with ACMs within them is not maintained by HSE or any other body within GB. The precise number of buildings that have ACMs in GB is unknown and can only be estimated e.g. by identifying a building's date of construction. In future we are expecting an Ordnance Survey Database to provide an improved indication of buildings with ACMs based on date of construction.
191. In the 2017 PIR, it was assumed that properties built between 1945 and 1983 were more likely to contain asbestos than in any other period. Some buildings from this period will not have ever contained asbestos, some may have had all asbestos removed and there could be buildings before and after this period that do contain asbestos. It was thought that this approach overestimated buildings that contain asbestos for the period 1945 – 1983 but this would be more or less offset by any underestimate from excluding all buildings before and after that period. Using data from the Valuation Office Agency (VOA)⁴² on the stock of council tax properties, the proportion of 25.2m domestic properties in England and Wales that were built between 1945 and 1983 is 38% and 36% in England and Wales respectively (2016). Public sector housing data for Scotland has come from the Scottish Government⁴³, which shows 70% of the 320,000 public sector buildings were built between 1945 and 1983. The weighted average of domestic and public sector properties that were built between 1945 and 1983 in GB is around 37%. Although this average is calculated from council housing and public sector buildings, it was assumed to be a reasonable proxy for all buildings in GB. Thus, the 3.5m construction projects per annum is adjusted by 37% to 1.3m projects per annum, which reflects the more likely number that might involve the disturbance of ACMs. Estimates produced for ACM removal projects are not directly comparable to removal jobs by building

⁴¹ <https://www.hse.gov.uk/forms/notification/f10.htm>

⁴² Valuation Office Agency Data on council tax properties, Table CTSOP4.0. Available at: <https://www.gov.uk/government/statistics/council-tax-stock-of-properties-2016>

⁴³ Scottish Government, see <https://www.gov.scot/publications/housing-statistics-local-authority-housing-stock/>

demolition discussed in paragraph 83- 84. This is a high estimate as it includes all construction projects, and it assumes that all the buildings constructed with asbestos still have asbestos within them.

192. The 2017 PIR produced a reasonable high estimate for the proportion of construction projects with asbestos, but the 2022 PIR has sought to revise the estimate with a review of the available evidence. The approach for this PIR has been to apply the natural attrition rate to buildings from when they were built to estimate the proportion of buildings remaining that contain asbestos. The natural attrition rate includes buildings that are renovated (effectively removing some or all asbestos) or demolished, guaranteeing all asbestos is removed.
193. Estimates of the original commercial and domestic buildings containing asbestos was published by the Department of the Environment, Transport, and the Regions (DETR) in 2002⁴⁴. We recognise that this report is based on research work that was undertaken over 20 years ago and was written at a time when the language used was reflective of that period. Given that there hasn't been a definitive study since the DETR report was published, we considered it appropriate to use this data as a reference given that asbestos use has been banned since 1999 and we can reasonably expect there are no new buildings with asbestos since the prohibition came into force. More recent estimates of buildings with asbestos are not available as the data is not routinely collected and the precise knowledge of where asbestos was installed is unknown. To precisely identify all buildings in GB with ACMs would be prohibitively expensive as it would require destructive sampling of all buildings older than 2002 and has not been undertaken. Since this data is not routinely collected, estimates of total building stock containing asbestos are pulled from DETR 2002 which assumed all commercial builds pre-dating 1975 contained some form of asbestos.
194. DETR 2002 commercial estimates counted properties such as shops, offices, warehouses, stores, storage depots, storage land, restaurants, and cafes in the UK built before 1975 using figures from the VOA. The natural attrition rate (as detailed in paragraph 65) is applied to the commercial stock and domestic stock from a central estimate of the build periods to estimate the remaining building stock as of 2016.
195. DETR assessed that domestic building stock containing asbestos is low risk but most of the higher risk asbestos was installed in flats and non-traditional homes. Conventional homes' low-risk asbestos included fittings such as ironing boards, gaskets in stoves and backing for vinyl flooring but no estimate was published for this figure. Due to lack of domestic data, we have chosen to err toward the commercial estimates for the proportion of domestic properties impacted. This approach tends toward overestimating the prevalence of asbestos in domestic building stock in 2016 but lowers the estimate published in the 2017 PIR.
196. To develop an estimate of the proportion of commercial buildings with (non-notifiable) asbestos work we take an estimate of commercial buildings that installed asbestos. Commercial estimates from DETR are based on use of the most common ACMs in commercial buildings and the period of use. We expect these figures to have some underestimation but that they account for most commercial asbestos

⁴⁴ <https://environotec.com/wp-content/uploads/2017/12/5.-DETR-Asbestos-and-man-made-mineral-fibres-in-buildings.pdf>

use. A mid-point year is taken of the period of construction⁴⁵ to set an initial year to apply a natural attrition rate from to estimate how many buildings remain with asbestos in 2016. Any estimate of buildings containing asbestos in GB is highly uncertain as precise identification would require destructive sampling of all buildings constructed before 2000.

Figure 12: Construction period of commercial buildings

Construction Period	Commercial Buildings with Asbestos	2016 Commercial buildings after natural attrition
Pre 1918	515,007	26,000
1919-1939	107,333	8,000
1940-1980	230,159	62,000
1980-present	163,022	110,000
Total of varying start dates. (Low estimate)	1,015,521	210,000
1970 midpoint all (High estimate)		410,000
Best estimate		310,000

*Figures may not sum due to rounding

197. Pre-1918 buildings have the initial year set at 1918 to err to increased building stock as we don't have a period to inform a mid-point. This results in the following outcomes: pre-1918 buildings with asbestos have 98 years of natural attrition applied; 1919 to 1939 buildings have 87 years of attrition applied; 1940 to 1980 buildings have 56 years of natural attrition applied; and 1980 to the present have 26 years of natural attrition applied. This approach reduces some of the impact of buildings that would face higher attrition from early build dates with lower attrition rates from later build dates. The varying initial date forms a low estimate while a high estimate is estimated from a 1970⁴⁶ start date for attrition of all commercial buildings with asbestos. The estimate of common ACMs in commercial buildings is a low of 210k, a high of 410k, and a best estimate of 310k. This results in a high of 40% and a low of 20% of the stock of commercial buildings retaining their asbestos in 2016, with an average of the two forming the best estimate of 30%.

198. The 2017 PIR estimate of the proportion of homes with asbestos (37% obtained from local authority tax records) was known to be an overestimate but an adjustment to the new commercial estimate here of 30% continues to err towards increased cost. A future improvement to this estimate could be obtained through surveys of trade workers to determine their annual encounters with domestic asbestos and actions taken, but it is not proportionate at this time to undertake this additional research.

⁴⁵ For the 'pre-1918' period, this is set to 1918.

⁴⁶ Assessment of asbestos health impacts in the 2017 PIR demonstrated that annual exposures began reducing rapidly in 1970. So, 1970 is used to form a convenient start date for a midpoint of all buildings with ACMs and will produce a high estimate of the building stock that remains with ACM. A peak installation date of 1960 could have been used but 1970 errs toward increased costs.

199. As detailed in paragraphs 187 & 188 we estimate there are 3.2m domestic and 0.3m commercial construction projects giving a total of around 3.5m construction projects. Using the proportions of projects with asbestos estimated in paragraph 197, we estimate a high of 1.3m and a low of 0.7m, with a best estimate of 1.0m which will need risk assessments to comply with CAR 2012. In 2017, the best estimate of cost was £7 per risk assessment per job. Survey respondents in 2021 disagreed with this estimate, suggesting it was too low. Instead, a cost estimate of between £7 and £40 was provided, with £23.50 per risk assessment per job as a best estimate. In many cases businesses will not have to do a risk assessment from scratch for the sorts of tasks involved here. In the view of HSE experts they would re-use previous ones and/or use HSE's Asbestos Essentials guidance⁴⁷, which provides task sheets for the different types of work, so this is likely to be an overestimate.
200. Using the above assumptions, the annual cost of risk assessments that involve asbestos are a high of £55.6m and a low of £4.9m with a **best estimate of £24.6m**. This is modestly lower than the 2017 PIR estimate of around £30.5m.

Training

201. Based on the estimates received in 2017 and agreed in the survey for this PIR, the cost of an online training course for asbestos awareness is around £25. This will have to be undertaken by all workers who are liable to be exposed to asbestos. For example, electricians, plumbers, general maintenance staff etc. It is assumed that all current workers in the industry will have done this initial awareness training course and will only require a refresher, when necessary, assumed to be every other year. Those workers whose work would knowingly disturb asbestos, i.e., those who carry out non-licensed work, will have to undertake a more detailed task-specific training course, estimated by HSE experts to be approximately £300 per course in 2017 and agreed to be about right by survey respondents in 2022. Similarly, it is assumed that relevant current workers who need to will have done this detailed course already and will be simply refreshing it.
202. It was estimated in the 2017 PIR that there were 2.22m workers⁴⁸ in the construction sector who could come across asbestos in their work⁴⁹. Each year approximately half, or 1.14m, of these workers are estimated to undergo refresher training, estimated to take 2 hours of time. A clear majority of responses to the 2021 survey agreed that 2 hours was about right. Health and safety guidance is that this should take no less than half a day or 3.7 hours, so a best estimate is an average of the guidance and survey responses of 2.9 hours with 2 hours and 3.7 hours taken as low and high estimates respectively. The estimated cost of time for a construction worker in 2021 is £18.65⁵⁰ per hour. This wage estimate is a small decrease in cost from the 2017 PIR due to a methodological change, despite wage costs otherwise increasing since then. Rather than calculating an average of relevant construction wages, a weighted average is calculated accounting for the number employed in each role, which produces a slightly lower estimate due to greater numbers of workers at lower wage rates. At this wage rate the annual cost of this refresher

⁴⁷ <https://www.hse.gov.uk/asbestos/essentials/>

⁴⁸ Data taken from the Annual Population Survey, 2015.

⁴⁹ Upon reviewing ONS statistics since then, this estimate is considered reasonable. As of September 2021, there were 2.169m construction working in GB which rebounded from a low of 2.09m in December 2020 during the pandemic caused by Covid-19. Adjusting for CV-19 by excluding data after 2019 the average for the industry was 2.27m workers. Employment in this sector rises and falls annually but has remained stable on average.

⁵⁰ Data from the Annual Survey of Hours and Earnings 2021, table 4.5a gives the average gross hourly wage rate in various construction roles with a weighted average of £15.57. This is grossed up by 20% to reflect the full costs of employing the person, such as tax and NI contributions and overheads.

training is a low cost of £42.4m and a high of £78.4m with a best **estimate of £60.4m.**

203. New entrants to the workforce each year have been estimated using tenure data from the Annual Population Survey (APS). Tenure data for the construction industry from 2005 to 2015 shows that the average number of workers during this period, who had been in their current job less than 12 months, is around 317k. Some of the estimated moves will have been from another construction job during the 12-month period, and so the figure overestimates the number of workers who are completely new to the construction industry and so require asbestos training. However, the estimate provides a top limit on the number of new workers in construction in any year who might be require asbestos training. This estimate, in turn, enables us to estimate a top end of the range for training costs, which is in line with erring toward increased costs applied in this analysis to avoid underestimating the scale of the costs.
204. Using the assumptions for the costs of awareness training (online), the more detailed task specific course “working with asbestos” (full day) and the estimate of 317,000 new workers per annum, HSE experts advise that 50% of these new workers will only do an online awareness-raising course while the other 50% will do the more detailed task specific course. HSE experts for the 2022 PIR have suggested a 50% proportion as it errs towards increased costs. The **total cost of these courses is estimated to be £3.96m for awareness raising and £47.6m for the more detailed task specific course per annum.** A clear majority of responses to the 2021 survey agreed that estimates for awareness training and “working with asbestos” training for new entrants were ‘about right’. A range could not be formed from the available evidence, so a point estimate has been used for these cost lines.
205. An additional cost of the asbestos training is staff wages for new workers covering the time taken for them to complete full day courses and awareness courses, which was a new cost added in the 2022 PIR. We have used existing guidance⁵¹ describing training requirements for licensed work as a proxy for calculating training costs for non-notifiable work. This will overestimate the costs incurred given that training for non-notifiable work will take less time. Using this guide, new entrants training will take between 2 and 4 days with 3 days being the best estimate at the same wage as refresher training. Taking half of the new workers per annum, at a wage of £18.65 per hour, this cost estimate is £65.7m per annum, with a low estimate of £43.8m and a high estimate of £87.5m. Additionally, new entrants who are not expected to work with asbestos but may come across asbestos will undertake the online awareness training which, based on the previously referenced guidance, will take between 3 and 4 hours, with the average of 3.5 hours informing the best estimate of the length of the training. This training is undertaken by the other 50% of new entrants as per HSE expert view. The estimate for the staff cost of completing the new entrant’s awareness course is £10.4m per annum, with a low estimate of £8.9m and a high estimate of £11.8m. The inclusion of the total additional staff costs of completing training results in an £76.0m cost increase over the 2017 PIR.

⁵¹ HSG p.71 <https://www.hse.gov.uk/pubns/priced/hsg247.pdf>; <https://www.arca.org.uk/page/arca-training--operative-courses>

206. Total costs of training per annum are estimated to be around **£188m (best estimate)** in the 2022 PIR.

Control measures

207. Based on discussion with HSE experts and responses from the survey, it is understood that measures for the sorts of tasks analysed here will mostly comprise specified methods of work and fibre suppression supplemented by respiratory protective equipment and items such as dust sheets and waste bags. Market research in 2017 revealed that the cost of a full asbestos protection kit was £47.40. This was agreed as about right by the 2021 survey response for this PIR. Control measures are required for each of the construction projects that are likely to require a risk assessment, which is a low of 0.7m and a high of 1.3m per annum for a best estimate of 1.0m (see paragraph 199). In 2017 it was estimated that only 1 worker per project will be required to wear PPE. However, most respondents surveyed for this PIR felt this was too low. To form a range the estimate from the PIR 2017 of 1 worker was retained as a low estimate. To form a high estimate an average of all responses that did not select 2 was used to form a high estimate of 3.42 PPE kits. The median of all responses of 2 workers per construction project was selected as the best estimate which was also 76% of all responses. Total cost estimates are calculated by multiplying the number of kits by the cost of the PPE, and the number of construction projects. Therefore, the total costs per annum of control measures are estimated to be between a high of £225.7m and a low of £33.3m, with a **best estimate of £99.2m per annum.**

Total costs of non-notifiable work

208. Adding together all the totals gives an estimate of the total cost of adjusted work with asbestos of between £185m and £511m with a best estimate of approximately **£312m per annum.**

Regulation 4: Duty to manage asbestos in non-domestic premises

209. This regulation covers the duty to manage asbestos in non-domestic premises. It requires duty holders to identify the location and condition of asbestos in non-domestic premises and to manage the risk to prevent harm to anyone who works on the building or to building occupants.

210. This regulation triggers removal activities on the basis that dutyholders are required to produce a written plan setting out their arrangements for managing the risk. Dutyholders must ensure that the plan is prepared and put into effect to make sure that:

- any material known or presumed to contain asbestos is kept in a good state of repair.
- any material that contains or is presumed to contain asbestos is, because of the risks associated with its location or condition, repaired and adequately protected or, if it is in a vulnerable position and cannot be adequately repaired or protected, it is removed.

211. The regulation requires information on the location and condition of the ACM is given to anyone who is liable to disturb it or is otherwise potentially at risk. The actual costs associated with the removal of asbestos incurred by dutyholders (those with the duty to manage) are not included in this PIR. The costs of asbestos removal

are expected to occur in the counterfactual and are not considered an additional impact of the regulations (see introduction for further discussion of counterfactual starting on paragraph 23). Those with a contract or tenancy agreement which allocates to them the maintenance of non-domestic, pre-year 2000 premises will be dutyholders. If there is no legal agreement in place, then all parties who have control over maintenance to any extent will need to cooperate to comply with the duty.

212. Dutyholders are required to find out if there is asbestos in the premises, identify its location and what condition it is in. If there is asbestos present, they must make a record of the location and condition of the asbestos, assess the risk from it, and prepare a plan that sets out in detail how they are going to manage the risk from this material. They must also set up a system for providing information on the location and condition of the material to anyone who is liable to work on or disturb it e.g. maintenance staff or contractors.
213. For all buildings containing asbestos, this requirement should have been actioned when the duty came in more than 15 years ago but, in reality, not all buildings will have been surveyed at this time. In addition, when buildings change hands a survey report may not be available, and the new owner may need to commission an up-to-date asbestos survey or a refurbishment and demolition survey for renovation work. However, we expect this would be a small proportion of costs relative to the costs of the ongoing duty to manage requirements.
214. The requirements to keep an up to date record of the location and condition of the asbestos in the premises will be generating ongoing costs. As a minimum, the management plan, including records and drawings, should be reviewed every 12 months. It should also be reviewed if there is a reason to believe that circumstances have changed. This will involve updating the record if any work is done that alters the condition of the asbestos and to annually check that it is in the condition that it was the last time it was checked (in most cases, this will involve a simple visual check to see if ACMs have deteriorated or been damaged or disturbed in any way).
215. The types of dutyholder we are considering for the duty to manage element of this PIR are those who manage non-domestic buildings. This will include schools, public buildings, hospitals, and commercial premises. Additionally, those who manage common areas of multi-occupancy domestic buildings, management companies or others are considered. For several of the estimates, the numbers of buildings have been adjusted by the proportion of buildings thought to contain asbestos. This provides a best estimate of 30% (see paragraph 197).

Schools

216. In this PIR we used an estimate provided by the Department for Education (DfE). DfE contacted all bodies responsible for school estates including local authorities (LAs), academies, and others (non-LA or independent schools). From their research⁵², 83.5% of schools were estimated to contain asbestos, suggesting there were approximately 21.9k schools with asbestos in GB⁵³ in 2016, which is almost

⁵² Source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906343/AMAP_Report_2019.pdf

⁵³ Source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906343/AMAP_Report_2019.pdf; <https://stats.wales.gov.wales/Catalogue/Education-and-Skills/Schools-and-Teachers/Schools-Census/Pupil-Level-Annual-School-Census/Schools/schools-by-localauthorityregion-type>; <https://www.gov.scot/publications/summary-statistics-schools-scotland-9-2018/pages/6/>. 2018 figures were taken for England that calculated

double the 2017 PIR estimate of 11k schools⁵⁴. Survey respondents suggested that the responsibility for managing asbestos often falls on either the head teacher or a governor. Survey responses also indicate that the time spent on duty to manage in schools is between 1 day and 5 days per year, with a best estimate of 3 days per annum. This includes time spent checking the condition of existing asbestos (themselves or a caretaker), as well as time spent updating plans and records. From the 2021 stakeholder survey we determined a best estimate of the annual salary associated with those completing the duty to manage asbestos including⁵⁵ headteachers, governors, caretakers, estate and facility managers, and health and safety managers. The best estimate is formed from an average of these weighted by the number of responses identifying them as the dutyholder, with head teachers as a high estimate of approximately £75k and a low of governors, who are volunteers at zero wage. This provides a best estimate of the average of £45.7k per annum. Over an assumed 220 working days per year, this is a high of £340 per day and a low of £0, with a best estimate of £190 per day. This gives us a best estimate of annual **costs of £13.6m per year for schools**, with a low estimate of £0 and a high estimate of £372m.

Local Authorities

217. The 2017 PIR stated there were 380 LAs in GB. A re-evaluation of this figure found it to be an underestimate, with the true figure being 407 LAs in GB in 2016⁵⁶. According to the Institute of Employment Studies (IES) 2011 evaluation of the duty to manage asbestos⁵⁷, 98% of LA respondents stated asbestos was present in the buildings they manage. We will therefore assume that 100% of LAs are incurring costs from managing asbestos.

218. The independent IES evaluation found LAs were very likely to have in-house maintenance departments. Information gathered during the qualitative research phase for the 2017 PIR, together with the HSE data, gives an assumption that LAs will have on average, 2 full-time members of staff tasked with managing asbestos across their estate. This figure was agreed by survey respondents for this PIR. Assuming a yearly cost of a nominated responsible person or health and safety officer in 2021 of approximately £42.3k⁵⁸ (a small decrease on the £43.7k cost from 2015 used in the 2017 PIR), this leads to a total annual estimated **cost for LAs of £34.4m**. There is no range for this estimate as no higher or lower estimates were appropriate for the elements of this area of regulation.

Hospitals

219. There were estimated to be 504 hospitals in GB⁵⁹ in 2016, 407 (83.5%) of which have been assumed to contain asbestos. This is more than double the 2017 PIR estimate. In the 2017 PIR it was assumed that 37% of hospitals contained asbestos which was informed by HSE estimates of the proportion of domestic buildings constructed during high asbestos use. We have taken the view that hospitals are more like schools than private residences and would likely have similar levels of

the proportion of building with asbestos. 2016 figures were kept for Scotland and Wales erring toward increased estimates as official estimates of schools modestly decreased from 2015 to 2018.

⁵⁴ The 2017 PIR estimated that there were 24,000 schools in GB and of them 37% of school buildings were likely to contain asbestos. This resulted in an estimate of approximately 11 thousand schools with asbestos.

⁵⁵ <https://www.gov.uk/government/publications/school-teachers-pay-and-conditions>, ASHE 2021, mean annual gross pay updated 19.8%

⁵⁶ England (353 LAs): <http://web.archive.org/web/20160924110004/https://www.gov.uk/guidance/local-government-structure-and-elections>; Wales (22) since

<https://www.legislation.gov.uk/ukpga/1994/19/contents>; Scotland (32) since <https://www.legislation.gov.uk/ukpga/1994/39/contents>

⁵⁷ <https://www.hse.gov.uk/research/rrhtm/rr783.htm>

⁵⁸ Source: Annual Survey of Hours and Earnings (ASHE) 2021, mean annual gross pay, SOC code 3567, updated by 19.8% to account for non-wage costs.

⁵⁹ Source: The number of trusts has been taken from NHS digital (<https://digital.nhs.uk/services/organisation-data-service/file-downloads>), Scotland

Audit (https://www.audit-scotland.gov.uk/uploads/docs/report/2016/nr_161027_nhs_overview.pdf), and NHS

Wales (<http://www.wales.nhs.uk/documents/The%20Annual%20Quality%20Statement%20for%20NHS%20Wales%202016.pdf>)

asbestos as identified by the Department for Education in paragraph 216. Both schools and hospitals are often government operated, predominantly built in the same post-war period with similar construction methods and will face similar budget constraints.

220. Additionally, we are uncertain how the estimate of hospitals has differed from the 2017 PIR by 43 hospitals but believe it is due to an underestimate of the number of independent (private sector) hospitals. Independent sector estimates were informed by expert opinion in 2017 and inputs were not presented in the available data for the final estimate. We have applied NHS digital figures for NHS trusts and other organisation trusts in the 2022 PIR update.
221. The PIR in 2017 assumed that managing asbestos will take up approximately 10% of the time of a nominated person/ health and safety officer, however respondents recommended that this was a low estimate. A high estimate was provided at 21%, with the best estimate of the proportion of time taken for a person managing asbestos being 15.5%. Assuming an annual cost of £42.3k for a health & safety officer, this leads to a high total annual estimated cost for hospitals of £3.74m and a low of £1.78m, with a **best estimate of £2.76m per annum**.

Industrial/commercial buildings

222. To estimate the costs of regulation 4 duty to manage asbestos in industrial/commercial buildings, we have made separate estimates for different sizes of businesses in terms of numbers employed. We are using the numbers employed as a proxy for the size of the estate those businesses may own. The 2017 PIR used business population figures from 2015. These figures were re-evaluated and updated to the 2016 figures as 2016 forms the start point for the analysis. The number of businesses in all categories was slightly higher in 2016, however the re-evaluation revealed a data input error for the number of small and medium sized companies in the previous PIR which should have been 259k in 2015 not 51.5k as recorded. Adjusting to the 2016 figures, leads to a roughly five-fold increase to **259k businesses categorised as small and medium sized with between 10 to 249 employees**.
223. For the **9,670 companies employing 250+ workers**⁶⁰, we will assume that, similarly to LAs, it is likely that at least some of their buildings will contain asbestos due to the likely large size of their estates. The PIR 2017 assumed that, on average, the management of asbestos will take up 10% of the time of a nominated manager. However, our survey response suggested this was an underestimate and that 16.9% was more accurate. This was the average response since large responses were considered possible by HSE experts, in which case both the median and mode suggest a lower estimate. However, these were considered reasonable as questions were asked on a per business basis and some large businesses could have multiple sites spread across the country, requiring more time to be devoted to this aspect by a person carrying out a health and safety role. Selecting the average of 16.9% of nominated managers time errs toward increased costs as the median analysis suggested that asbestos management was 5% of nominated managers time. As a result, any range taken would be arbitrary, so a point estimate is used. Assuming the costs of a person performing a health and safety role of £42.3k per annum, this

⁶⁰ Source: Business Population Estimates 2016

leads to a total annual estimated cost for companies with 250+ employees of **£69.1m**. There is no range for this estimate as low and high estimates were not suitable for the elements of this cost line.

224. There are approximately **259,000 companies employing from 10 to 249 workers**. As estimated in paragraph 193, between 20% and 40% of buildings are likely to contain asbestos, with a best estimate of 30%. This results in a high of 103,610, a low of 52,460 and a best estimate of 78,000 small and medium businesses managing asbestos. The previous PIR assumed this will on average take approximately one day of a health and safety officer's time. However, our survey response suggested between 1 and 4.5 days, with 2.75 a best estimate. With costs of £23 per hour⁶¹, this leads to a total annual best estimate **for companies with 10-249 employees of £36.6m**, with a low estimate of £8.94m and a high estimate of £79.4m.

225. The number of **companies employing 9 people or fewer is 5.33 million**, some 1.77 million of whom are self-employed⁶². This includes home-workers and those who do not have a duty to manage asbestos as determined by the analysis in the HSE self-employed exemptions IA 2015⁶³. In the previous PIR, a reduction was applied for homeworkers of just 932,000 businesses. A further reduction could be possible as many micro businesses may not be dutyholders for their premises if they are not owner-occupiers or depending on the terms of their tenancy. However, detailed information on this is not available so we cannot omit these and must assume businesses take on dutyholder responsibility.⁶⁴

226. Applying the self-employed exemption of 1.77m businesses leaves 3.56m businesses, of which we assume between 20% and 40%, with a best estimate of the average, 30% (or 1.07m), could have asbestos on their premises. We will assume the duties regarding asbestos are undertaken by an individual, with the cost of £23 per hour. All of this will mainly be done as part of general maintenance of the premises. These businesses are likely to have a very small estate, where any changes to the condition of any asbestos present would be more easily visible.

227. The previous PIR assumed an average of 1 hour per company at around £23 per hour, to fulfil these requirements. Respondents to our survey suggested this estimate was too low and 2.5 hours per annum was found to be more accurate. This is a median point estimate which was deemed reasonable by HSE experts. Several outlying responses were provided which were deemed unreasonable, resulting in the absence of high and low estimates. We may consider this to be an overestimate, as there is likely to be a much lower level of compliance in this segment. Based on these assumptions, a low estimate of total annual cost for companies with 9 or fewer employees is £41.5m and a high estimate £81.9m. The **total annual best estimate of cost for companies with 9 or fewer employees is £61.7m**.

Common areas of managed domestic buildings

228. Domestic buildings which are likely to have common areas are those dwellings which include 2 or more household spaces e.g. flats. There are some 21,700 such

⁶¹ Source: Annual Survey of Hours and Earnings (ASHE) 2021, mean hourly gross pay SOC code 3567, uprated by 19.8% to account for non-wage costs.

⁶² Approximately 4.66m self-employed as of 2015. Source: ONS

⁶³ https://www.legislation.gov.uk/ukia/2015/267/pdfs/ukia_20150267_en.pdf

⁶⁴ Self-employed home workers will not have a duty to manage but self-employed workers who have non-domestic premises may well have a duty to manage, depending on who is responsible for maintaining their building.

buildings in GB⁶⁵, and we assume between 20% and 40%, with a best estimate of the average, 30% or 6.5k buildings, contain asbestos. These will mostly be managed by either a management company, housing association or similar. We have assumed fulfilling asbestos management duties will take 4 hours per year of a health and safety person's time, with costs of £23 per hour. These assumptions lead to a total annual **best estimate of cost for common areas of domestic buildings to be £603k** with a low estimate of £405k and a high estimate of £801k.

Summary for duty to manage asbestos

229. Adding together all the totals gives an estimate of the total ongoing costs for the duty to manage asbestos of between £156m and £307m, with a best estimate of **approximately £219m per annum.**

Gross Domestic Product (GDP) deflator uplift

230. As stated in paragraph 24 we did not produce a new estimate for costs of all the regulations in CAR 2012. For those that we did not (5, 8-12, 14, 16, 17, 21-23) we applied the GDP deflator⁶⁶ to produce an estimated increase in costs of a little over 12%. These regulations were of low total annual cost impact and were disproportionate to reassess in the 2022 PIR. The 12% was applied to the total aggregated cost impact of these regulations. When added together this gives a low uplift of £2.2m, a high of £8.6m and a **best estimate of £5.4m.**

231. A minor overestimate has not been corrected for regulation 8. HSE fees for asbestos licences have not increased since 2016 but are uplifted by the GDP Deflator in these estimates, along with the rest of the cost line. The estimate for this cost impact is low and below £1m so it will have limited impact on total aggregate costs per annum or the net present value of the CAR 2012 regulations.

Summary of Total Annual Costs

232. If we are to sum the costs detailed above for licensed work,>NNLW (including the GDP deflator uplift to prices), non-notifiable work and those associated with the duty to manage asbestos, the updated estimate for the total annual compliance cost under CAR 2012 is **approximately £741m.** The low estimate is £493m and a high estimate of £1,096m. The model best estimate is an annual cost increase of approximately £254m from the 2017 PIR estimate of near £490m. In this comparison we are comparing the nominal costs in the 2017 PIR with the nominal costs in the 2022 PIR. The differences between these two will be driven by improved evidence, changes to the modelling approach, and general inflation, as discussed throughout this report.

⁶⁵ Source: Census 2011. Table KS401EW for England and Wales and table KS401SC for Scotland. As of publication there is no update for this figure.

⁶⁶https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fassets.publishing.service.gov.uk%2Fgovernment%2Fuploads%2Fsystem%2Fuploads%2Fattachm ent_data%2Ffile%2F1044826%2FGDP_Deflators_Qtrly_National_Accounts_December_2021_update.xlsx&wdOrigin=BROWSELINK

Figure 13: Summary of indicative total annual cost differences from 2017 PIR

Regulation category	Cost Item	Total annual costs difference 2017 and 2022 (best estimate, £m)
Non-Notifiable work	Refresher training	£16.2
Non-Notifiable work	Cost per risk assessment	£15.5
Non-Notifiable work	New entrants training - task specific, full day course	£65.7
Non-Notifiable work	New entrants training awareness course	£10.3
Non-Notifiable work	PPE costs	£37.7
Duty to manage	Schools	£10.0
Duty to manage	Large companies managing asbestos	£28.4
Duty to manage	Medium-sized companies managing asbestos	£33.4
Duty to manage	Micro companies managing asbestos	£26.2
Licensed and>NNLW	Assessment of work which exposes employees to asbestos	£1.9
GDP deflator uplift to licensed &>NNLW	Regulations: 5, 8, 9, 10, 11, 12, 14, 16 & 17 & 23, 21, and 22. GDP deflator uplift.	£5.4
Total annual cost of significant differences	Significant differences	251*
Total annual costs	All difference	£254**

*Figure may not sum to above table due rounding.

**Figures may not sum to above table as there as additional cost lines have not been included

233. These eleven cost lines make up almost 99% of the difference between the total annual costs of the 2017 and 2022 PIRs, accounting for £251m⁶⁷ of a £254m per annum increase in costs. Most of the cost estimate increases apply to non-notifiable work and duty to manage asbestos. Non-notifiable costs increased by approximately £145m per annum while the duty to manage cost increased by approximately £101m per annum⁶⁸. A relatively small total cost increase of £1.9m is attributed to the licenced and>NNLW work regulations as a result of cost estimate changes, with a further £5.4m increase in this category due to the general price uplift of 2016 prices to 2021 prices where re-estimation did not take place. The hundred-year present value breakdown of these annual costs is presented in paragraph 239.

234. **Non-notifiable** work annual cost increases are driven by improved evidence. Evidence improvements that facilitated this change are set out below:

- A large increase in workers' training costs for new entrants to the construction industry caused by the omission in the 2017 PIR of staff costs of this training.

⁶⁷ Figure may not sum to above table due rounding.

⁶⁸ Figures may not sum to above table as there are some cost lines that have not been included in the table.

Accounting for the time taken and wage rate of those undertaking either the full training for actively working with asbestos or awareness training caused a combined £76.0m increase.

- The increase in cost of refresher training for workers in construction was primarily driven by a revised estimate of the time this training takes, from 2 hours to 3 hours.
- Estimated PPE costs increased due to the revised estimate of the number of workers wearing PPE per project, from 1 to 2. A reduction in the estimated number of projects requiring PPE countered the increase by almost half its cost.

235. **Duty to manage** total annual costs also increased through improved modelling assumptions. The areas of greatest significance in driving this change include:

- Updating the number of schools with asbestos from 37% to 83.5%⁶⁹ and an increase in the best estimate of time required to manage asbestos in each school per year from 1 hour to 3 hours. These increases were moderated by halving the wages of the dutyholder who managed this task. Survey evidence in 2021 shifted the duty to manage solely from headteachers to include volunteer governors, caretakers, and estate managers.
- Large, medium, and small/micro businesses' total annual costs all increased due to improved estimates of time per annum managing asbestos. For large businesses, the estimated proportion of health and safety officers time spent on asbestos increased from 10% to 17% per annum. For medium sized businesses, estimates increased health and safety officer time managing asbestos from 7.4 hours to 20.4 hours per annum. Small/micro businesses increased their staff time from 1 hour to 2.5 hours per annum. This was mitigated by a small reduction in the estimated proportion of buildings containing asbestos for medium and small/micro businesses as described in paragraphs 197, 224 and 225.
- A large proportion of the increase in costs for medium-sized companies was through a data input adjustment in the 2017 PIR. Counts of medium-sized companies were incorrectly averaged instead of being summed in 2017, increasing this group from 51.5k to 259k in this PIR.

236. **Licensed work and notifiable non-licensed work (NNLW)** experienced a relatively small increase to the total annual cost from the 2021 survey and GDP deflator. Most of the cost lines impacted by increases due to adjustments in the model were below £1m. Of the total £2.5m increase, £1.9m was due to changes to estimates of "other cash costs" per job for assessing licensed work. These costs increased from a 2017 best estimate of £150 per job to £200 per job across 37,500 projects. Our GDP deflator cost adjustment described in paragraph 230 resulted in an increase of about £5.4m per annum, representing the largest annual cost increase for these regulations although still a relatively low cost for CAR 2012.

⁶⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906343/AMAP_Report_2019.pdf

237. In the current analysis many of the total cost best estimates are improved, however some remain uncertain. Combining the previous analysis with the recent survey data demonstrates that the 2017 PIR's 'generous' estimates were in the right order of magnitude. We are now more confident with the available evidence. Inputs for the number of construction projects affecting non-notifiable work and duty to manage estimates for micro businesses remain uncertain. Non-notifiable work estimates are completed indirectly through construction work and could be improved through assessing quantities and proportions of those workers in skilled trades impacted by CAR 2012. Uncertainty in the duty to manage estimates are related to the likely overestimate of the number of small/micro businesses who must manage asbestos. It has not been considered proportionate to determine the number of small/micro businesses whose tenancy agreement would allow us to exclude them from counts. Stakeholder engagement with trade representatives was undertaken but no response was provided in the time available to complete this analysis.

Present value of costs

238. Value in economic analysis is expressed in terms of an initial price year to evaluate preferences over time. This present value captures the preference of generally valuing today over the future. Discount rates are applied to costs and benefits to convert them into comparable values which are added together forming the present value. Discounting is completed after excluding inflation which describes changes in the purchasing power of money rather than time preference.

239. The total annual costs of complying with the requirements of CAR 2012 is a best estimate of £741m, with a low cost estimate of £493m and a high estimate of £1,096m. Prior to discounting, both the total annual costs of work with asbestos and duty to manage were estimated annually for 100 years from 2016 to 2115. Of the £741m best estimate of annual cost of complying with CAR 2012, £523m per year is adjusted annually by a jobs rate of change (described in paragraph 76) and £219m duty to manage costs are revised by the adjusted natural building attrition rate (described in paragraph 65). In the 2017 PIR both costs are adjusted by the natural attrition rate. These 100 years of annual total costs are then discounted to present values.

240. In the 2017 PIR model the use of the Microsoft Excel net present value function understated the estimated net present value, and an adjustment is required. The 2017 PIR used a single discount rate for different portions of the estimation (3.5% for <30 years; 3% for 31-75 years and 2.5% for 76-100 years) as that was built into the modelling software. This approach overstates the present value of a future impact for both a cost and a benefit as it failed to compound higher discount rates (such as the 3.5% before years 30) into later years.

241. The 2022 PIR applies HM Treasury Green Book discount rates from Annex 6⁷⁰ to estimate the present value of costs and benefits from 2016 to 2115. The total annual costs are discounted at a decreasing compounded rate starting at 3.5% for 30 years or less, 3% for between 31 and 75 years, and 2.5% for 76 years or more. The compounded discount rate adjustment decreased costs relative to the method applied in the 2017 PIR.

⁷⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf

242. Due to this modelling flaw the estimated social value of CAR has narrowed since 2017 as benefits are reduced more than costs.

Figure 14: Present value of cost modelling and survey adjustments

	Best estimate 2017 (bn)	Best estimate 2017 - cost using 2017 discount rate (bn)	Best estimate 2022 - costs using compound discount rates (bn)
Net present cost over 100 years	£10.3	£8.2	£12.4
Difference from 2017 PIR best estimate	-	-£2.0*	£2.1*

*Figures do not necessarily sum due to rounding

243. This report estimates the net present value costs have increased by an additional £2bn compared to the 2017 estimate. About £4.1bn of the increase is associated with annual costs which are partly derived from the improved evidence base collected for this PIR. Changes to the modelling reduced estimated costs by approximately £2.0bn, largely due to the adjustment of the start point of the natural attrition rate as detailed in paragraph 73. Therefore, the estimated 100-year present value of the cost of compliance with the CAR2012 regulations is £12.4bn. These estimates represent approximately a 20% increase in the net present cost of complying with CAR 2012. Aside from improvements to the evidence base, other influences on the costs since 2017 could include guidance changes, behaviour change, staff turnover, inflation, increased awareness, and increased compliance amongst dutyholders. Guidance on plans of work, for example, or external campaign groups may have increased business awareness and initiated positive actions around asbestos, increasing cost. Behaviours around asbestos, a high-profile risk, may have changed regardless of the regulations. Inflation, which is normally removed from a CBA, could also be influencing the survey responses relative to the 2017 PIR estimate, and we cannot fully isolate the effect of general inflation on cost estimates versus changes in equipment/working practices that could also be influencing the changes in costs.

Sensitivity of present value costs

244. As noted in paragraph 70 & 71, we have adjusted the natural attrition rate of buildings from the 2017 PIR. The natural attrition rate has a large systematic cost reduction on the 2022 PIR model making it a key modelling input. As a key input it is appropriate to comprehensively assess the impacts of the natural attrition rate on this CBA. If the 2022 PIR maintained the 2017 PIR natural attrition rate, the best estimated net present cost would be nearly double at approximately £14.8bn over 100 years and with a best estimate of societal value of CAR 2012 of about £13.9bn.

245. If we were to further assume no building suffers attrition over time, the best estimate of net present cost would be £22.1bn and CAR 2012 would retain a positive social value of about £6.6bn. This extreme assumption should not dictate policy, as all buildings can be expected to deteriorate through natural wear and tear over 100 years. The comparison of attrition rates demonstrates the 2022 PIR model is not

sensitive to this key input and that CAR 2012 remains of social value even if removed.

Summary present value of costs

246. Present values and proportions of overall cost for each cost category in CAR 2012 have changed due to the improved modelling and evidence. These changes are summarised in Figure 15 below.

Figure 15: Breakdown of 2017 and 2022 PIR present value cost differences by regulation categories

Regulation Category	Best estimate of present value of costs 2017 (bn)	% of 2017 Costs*	Best estimate of present value of costs 2022 (bn)	% of 2022 Costs*	Difference 2017 and 2022 (bn)
Licensed and NNLW	£4.2	41%	£3.6	29%	-£0.60
Non-notifiable work	£2.6	25%	£5.4	43%	£2.8
Duty to manage	£3.5	34%	£3.4	27%	-£0.10
Total Present Value*	£10.3		£12.4		£2.1

* Figures do not necessarily sum due to rounding.

247. Licensed and NNLW categories saw little increase in their annual costs. After modelling differences across the 100-year horizon had been applied the result was a decrease in the present value of these costs. Furthermore, largely due to increased cost in non-notifiable work, there was a sizable fall in the proportion of costs that fall on licensed work resulting in that category no longer being estimated to be the largest cost of CAR 2012 regimes.

248. There has been a large increase in the estimated annual cost of non-notifiable work compliance leading to a sizable increase in the present value of these costs. As other cost areas did not see present value cost increases, non-notifiable work moved from being the smallest cost area to the largest.

249. The estimated present value of costs over 100 years of duty to manage requirements has decreased slightly. This occurred despite large annual cost increases in this area. Modelling adjustments were responsible for this effect as the shift in the year of application of the attrition rate resulted in a more rapid reduction in costs. This effect was felt more strongly for duty to manage costs because the attrition rate was applied directly to these costs whereas the asbestos removal jobs were adjusted by the estimated jobs rate. This modelling change is sensible as attrition of buildings with asbestos will directly reduce duty to manage responsibilities while creating an initially increasing number of asbestos removal or maintenance

jobs. This means that despite greater annual costs being estimated, the proportion of the present value of costs of CAR 2012 attributed to duty to manage has fallen.

g) Benefits

250. The benefits of CAR 2012 are assessed through considering scenarios of avoided health costs of asbestos-related cancer. This analysis is dominated by mesothelioma, which is an asbestos-specific cancer that killed on average 2400⁷¹ people per year between 2016 and 2018 in the UK. Due to the long latency with which the cancer emerges, recent deaths are due to exposures many decades ago. Epidemiological evidence is based on the recent burden of disease and does not directly assess exposure rates. The exposure rates assessed in the 2017 PIR have been retained for the benefits analysis in the 2022 assessment as new epidemiological analysis will not be updated in the time allowed to complete the 2022 PIR.

Time Horizon

251. A time horizon of 100 years has been selected in this PIR to incorporate the health benefits of the control of asbestos, supported by HSE epidemiologists. This time horizon has been applied to cost and benefits. Mesothelioma has a long latency period, which can be 30 years or more from the date of exposure. Despite natural attrition of the asbestos-containing building stock, asbestos can be expected to remain in GB for over 50 years, so avoided cases of mesothelioma may be experienced from this regulation over 100 years. This appraisal period allows for an assessment of the benefits of health cost savings of reduced exposures to asbestos and has been endorsed by HSE epidemiologists.

Discount Rate adjustment

252. As detailed in paragraph 240240, the 2017 PIR used a flawed application of discount rates, which overstated both costs and benefits. Due to the different timing of the costs and benefits over the 100-year appraisal period (costs are borne immediately, while the benefits of averted cancers are delayed due to latency), the 2017 PIR discount rate application overstated benefits more than it overstated costs.

253. The 2022 benefits analysis uses a decreasing and compounded discount rate as recommended by the Green Book⁷² in Table 7, Annex 6. Separate discount rates are applied to health and financial impacts following this guidance.

Health Cost Savings

254. In the 2017 PIR, we used HSE epidemiologists' exposure scenarios to estimate the benefits arising from the actions required in the regulations (which are the actions costed in the previous section). We would compare a scenario (A) where individuals and businesses continued to take the actions indicated in the regulations with another scenario (B) where individuals and businesses stopped taking all of these actions.

255. In scenario B, population asbestos exposures are assumed to rapidly return to the long-term trajectory previously developed to represent a plausible worst-case

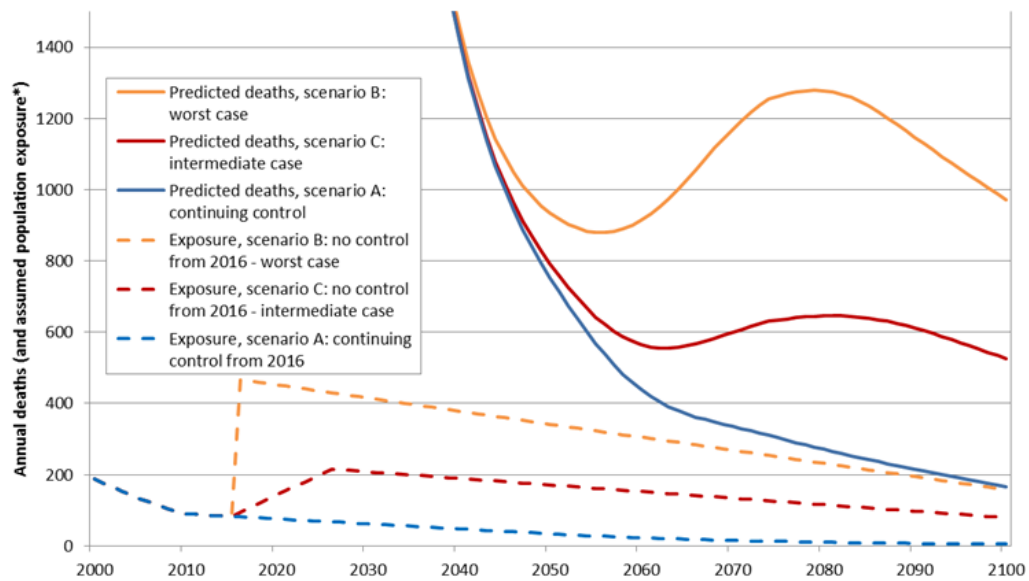
⁷¹ <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/mesothelioma - heading-One>

⁷² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf

scenario where no proactive management or control of asbestos was in place. The mesothelioma projections models provide strong evidence that average annual population asbestos exposures reduced rapidly during the 1970s but are uninformative about more recent exposures due to mesothelioma latency. The most recent reliable value of the exposure index derived from projections modelling occurs around 1980 and scenario B assumes a linear decline from this level to a value of half of this by 2050. In scenario A, exposures follow a previously described much lower long-term exposure trajectory based on high compliance with the existing controls – including the duty to manage asbestos – in which annual population exposures decrease in proportion to the number of asbestos-containing buildings remaining.

256. The total number of deaths prevented by the existing regulations is estimated from the difference between the mesothelioma projections based on scenarios A and B over the next 100 years and allowing for additional deaths due to asbestos-related lung cancer.
257. Note that the population asbestos exposure rate applied in the epidemiological modelling and the asbestos work rate are estimated differently. The historic profile of population asbestos exposure is determined by the national mesothelioma mortality rates by age and sex, and assumptions about the long-term relationship between mesothelioma risk and time since the start of asbestos exposure. The population exposure in scenario A is then assumed to follow a future track which is proportionate to the remaining number of asbestos-containing buildings (derived from an assumed building attrition rate). Asbestos work activity including removal jobs are directly calculated from building attrition rate.
258. Figure 16 shows predicted deaths and exposures in scenarios A and B, as well as an intermediate scenario C (described in 2017 PIR paragraphs 178 & 179). The blue lines ('continuing control') represent scenario A, while the orange lines ('worst case') represent scenario B. The red lines represent scenario C.

Figure 16: Predicted annual Mesothelioma deaths and exposures from different scenarios



**Relative changes in annual population asbestos exposure are used to predict subsequent mesothelioma mortality in the HSE model; the absolute scaling of the exposure profile is arbitrary in this chart.*

Source: HSE Mesothelioma Projections Model

259. Scenario B (without the risk-control actions prescribed in the regulations) results in some 50,500 additional cancer deaths compared to scenario A (with the risk-control actions prescribed in the regulations) in the period 2016 - 2115. Nearly 40,800 are from cases of mesothelioma, while approximately 9,700 are from cases of lung cancer. As can be seen in the Figure 16, due to the latency periods involved, it is only in the mid-2040s that the additional deaths start to occur (the blue and yellow non-dotted lines begin to really diverge). A proportion of the work-related asbestos exposures will lead to disease experienced 10 to 30 years later.

260. HSE has published estimates of the monetary burden to society of work-related cancer for 2010 data in a 2013 price year⁷³. This includes costs to business, government and taxpayers, as well as costs to the individuals affected, both in terms of financial costs and the impact on quality of life and loss of life. This research also includes appraisal values, including the average costs to society of a fatal case of work-related cancer. This is estimated to be approximately £1.27m per case in 2013 prices.

261. We have updated the estimate in the 2022 PIR to align the price year of the benefits with the updated costs year from the 2021 survey. In nominal terms the price year of the costs validated in the survey is 2021. Additionally, the costs impacted by the 2021 survey updates impact 99% of the costs in this model. In nominal terms the costs are in 2021 prices as they have been validated as remaining broadly correct as per 2021 stakeholder experience, or stakeholders have suggested updates to make them so. The burden of occupational cancer has been updated using the GDP deflator and our new estimate is a £1.48m value of a prevented fatality (VPF) of cancer. HSE's uplifted VPF estimate of occupational cancer is considered appropriate as it specifically values the prevented fatality of occupational cancer

⁷³ HSE Costs to Britain

which includes mesothelioma. Assessing this estimate against other government estimated VPF of road accidents produced annually by the Department for Transport (DfT) of £2.2m in 2021 price year we are erring toward a lower benefit with our approach.

262. We applied this appraisal value to a yearly profile of the number of additional cases of cancer expected in each of the years from 2016 to 2115 (this was an output of the model provided by HSE epidemiologists). We then discounted those values. We note that because 93% of the appraisal value is composed of “human costs” (the costs arising from the impact on the individual’s quality of life and their loss of that life), we used a health discount rate⁷⁴ starting at 1.5% for periods 1-30 years, reducing to 1.29% for periods 31-75 years, and reducing to 1.07% on year 76 onwards. The cost of a case of cancer is mostly human costs but HSE estimates about 7% of costs are financial. Financial benefits are discounted at the standard discount rate as detailed in paragraph 241.

Figure 17: Comparison of 2017 PIR and 2022 PIR present value benefits

	Best estimate 2017 PIR (bn £2013)*	Best estimate 2022 PIR (bn £2021)
Net Present Benefit		
100 Years	£28.8	£28.7
Difference 2022 PIR- 2017 PIR	-	-£0.1

* Figures do not necessarily sum due to rounding.

263. Figure 17 shows the estimated benefits to society of preventing asbestos-related cases of cancer is £28.7bn in the 2021 price year. A financial discount rate was not applied to 7% of VPF in the 2017 PIR and this mitigates the increase in the net present value of benefit by £1.4bn in the 2022 PIR. The discount rate adjustment to the 2017 PIR estimated the cost saving of avoided occupational cancer would have been a benefit reduction of about £3.1bn. The increase from the price year shift to 2021 is approximately £4.4bn relative to the benefits with the adjusted discount rate if it had been applied in the 2017 PIR. It could be suggested that this is inflating the benefits, but we believe that a consistent price year is appropriate and follows Green Book guidance as the updated survey costs are in a 2021 price year and the VPF remains lower than the widely accepted VPF maintained by the DfT noted in paragraph 261. Overall, the difference in the adjustments to the net present benefits in 2022 PIR is a modest reduction of £0.1bn from the 2017 PIR estimate.

264. The increased exposures in scenario B would also lead to other ill-health conditions (not resulting in cancer) which are not included in the Mesothelioma Projections Model. This would lead to additional benefits from avoided cases of exposure indicated in the regulations. However, the monetised impact of those benefits would be relatively minor compared to that of preventing fatal cases of cancer. This approach underestimates the benefits of CAR 2012 regime.

265. We acknowledge that scenario B is not a very plausible one for a real situation in which the regulations were removed. It is likely that individuals working with

⁷⁴ The HM Treasury Green Book advises a discount rate of 1.5% is conventionally used for health impacts in UK government analyses

asbestos would continue to take some of the precautions indicated in CAR 2012 or other precautions (as we state in the body of the PIR report, we are not able to claim all of the reduction in exposures since 1980 was due to the regulations), and therefore exposures would not increase as much as estimated. However, this is the appropriate scenario to contrast with the costs calculated in this PIR, which are simply the ongoing costs of taking the prescribed actions in the regulations, as it simply represents the impact of stopping taking those actions.

266. For illustrative purposes, HSE epidemiologists have also created what they consider is a more realistic scenario C (Figure 16). This demonstrates outcomes for a world in which the regulations are removed, where businesses and individuals working with and managing asbestos gradually change their practices and stop taking some of the actions required in the regulations over the first 10 years. Exposures reach half of what they were in 1980 by year 10 and remain level thereafter (all with adjustments for the reducing stock of ACMs).
267. Scenario C, when compared to scenario A, leads to approximately 19,300 additional deaths over the 2016 to 2115 period. The cost to society of those additional deaths is estimated (applying the same methodology described above) at £10.5bn. We stress that this figure cannot be compared to the costs calculated earlier, as in this scenario businesses and individuals would continue to take many of the actions generating these costs. Since we cannot estimate what costs businesses may have incurred to achieve scenario C we have not presented a cost estimate for reference.

h) Qualitative Benefits and Costs

268. **Qualitative benefits** of CAR 2021 identified in the 2021 survey included more awareness training, clearer guidance, and improved public protection from asbestos exposure. All these benefits are challenging to monetise and demonstrate the societal value of CAR 2012.
269. Benefits of awareness training and clearer guidance could both result in cost savings, increased compliance with asbestos controls, and lower asbestos exposures. Evidence of these changes would be challenging to demonstrate independently of current benefits modelling. They would also be minor cost savings when compared to the regulations.
270. Improved public protection from asbestos exposure is a monetisable benefit that we have assessed in these regulations, but the specific impact of public protection has not been separated from the occupational impacts. All the benefits of CAR 2012 are driven by avoided health costs of cancers including mesothelioma and lung cancer in GB. A proportion of the CAR 2012 regulations will inevitably benefit the wider public by avoiding health costs of mesothelioma and associated cancers as well as those occupationally exposed. For the purposes of this analysis, the qualitative benefits are noted but it is not considered proportionate to assess this impact separately to determine the societal value of wider public avoided fatalities or productivity savings from improved guidance.
271. **Qualitative cost** impacts have not been assessed in the economic case further than acknowledging 4-5% of 2021 survey respondents indicated negative impacts. Reviewing these responses suggests that the majority of the increased costs

described qualitatively by respondents are already captured by other costs quantified throughout this analysis, such as increased training, increased surveys and increased costs of asbestos removal.

272. We cannot directly attribute any identified increases in costs to actual changes in asbestos controls or to improved evidence on cost between the 2017 and 2022 PIRs.

273. A suggestion of increased fly-typing of asbestos waste has been noted and although this is outside HSE's vires we have not found evidence that supports the claim. As stated elsewhere in this PIR, the statistics on asbestos waste 'fly-tipping' have remained stable since 2017. It is not for HSE to review fly tipping, this is a matter for other regulators. We consider it out of scope of the CAR 2012 regulations.

i) Conclusions

2022 Update of Social Value of CAR 2012

274. As a result of modelling adjustments and improved assumptions in the 2022 PIR, the estimated social value of CAR 2012 has narrowed modestly since the 2017 PIR. Estimated costs and benefits have increased due to modelling enhancements and improved evidence. Overall, the social value remains beneficial with an **estimated value of £16.3 bn**.

Figure 18: Net Present Value 2016 to 2115

	Best Estimate 2022 PIR (bn)*	Best Estimate 2017 PIR (bn)*	Difference 2017 PIR and 2022 (bn)*
Present Benefit of Avoided Cancers Cases	£28.7	£28.8	-£0.1
Net Present Cost to Business	£12.4	£10.3	£2.1
Net Present Value to Society	£16.3	£18.6	-£2.2

* Figures do not necessarily sum due to rounding.

Summary

275. The updated annual costs for complying with CAR 2012 are estimated to be approximately £741m, with a low estimate of £493m and a high estimate of £1,096m. This results in a **present value estimate of costs of £12.4bn** between 2016 and 2115, with a low estimate of £8.2bn and a high estimate of £18.3bn. Per annum benefits over the same period vary, but their **present value is approximately £28.7bn**. Uncertainty surrounding cost estimates has been reduced in the 2022 PIR, which has allowed us to report a detailed cost estimates that were not reported in 2012. The net present value of CAR 2012 has narrowed from approximately £18.6bn in 2017 **to £16.3bn in 2022** due to improved estimates that increased costs more than benefits. The low estimate of costs informs a net present

societal value of CAR 2012 of £10.4bn, with the high-cost estimate informing a net present value of £20.5bn.

276. This PIR demonstrates that the impact of CAR 2012 has a large social value and the case for maintaining the regulations remains strong. This cost benefit assessment allows us to conclude that the benefits of CAR 2012 outweigh the costs and will continue to do so for the foreseeable future, so long as exposures continue to be effectively controlled.