

August 2019

Survey of the views of industry stakeholders on the effectiveness, issues and impacts of the initial operation of the ban in England on combustible materials in the external walls of buildings

***Prepared by the Adroit Economics Consortium
(Adroit Economics and PRP)***

For and on behalf of MHCLG

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1. Introduction

- 1.1 This report sets out the findings from a survey of the views of industry stakeholders of initial operation of the 'Ban on Combustible Materials in External Wall Systems' in England.
- 1.2 The ban was announced by MHCLG on 29 November 2018.
- 1.3 The survey and analysis were undertaken by the Adroit Economics Consortium (Adroit Economics and PRP).
- 1.4 MHCLG commissioned the survey in order to gain an early understanding of the effectiveness of the ban, key issues and the impact.

2. Executive Summary

2.1 A total of 34 responses have been received and are analysed in this report. The key findings are:

Understanding, Clarity and Interpretation

2.2 The majority (65%) of respondents' report that they think it is clear which buildings the ban applies to. However, a proportion consider that it is either ambiguous (24%) or that it requires improvement (12%).

2.3 Only a quarter (26.5%) consider that it is clear which parts of the external walls the ban applies to. A little less than half of respondents (44.1%) stated the ban had too many grey areas or "unclear" statements of which parts of external walls it applied to. The remainder of the respondents consider that it is ambiguous (29.4%)

2.4 Half of respondents (50%) reported a degree of confusion regarding the intentions of the list of excluded items. A number of contradictions were noted by those that felt the exclusions were ambiguous (29.5%), and the remainder asked for a general clarification (20.5%).

2.5 Almost all (94%) of respondents reported that the wording of the ban and/or associated guidance needs to be amended to improve clarity.

Impact

2.6 All but one of the respondents (97%) reported that the legislation is causing technical specification problems.

2.7 The majority thought that construction detailing has become more complex as a result of the legislation (79.5%) A proportion think this will be a temporary issue though (11.8%).

2.8 Most respondents reported that products normally available are no longer acceptable and that alternatives are hard to find (79.5%). A small proportion of respondents argued that the legislation had been introduced too soon, such that compliant materials are not yet readily available (8.7%). A small proportion of respondents said either that they were not affected (5.9%). A similar proportion said that they had no opinion (5.9%).

2.9 Circa half of the respondents reported notable impacts in delivery times on new projects (52.9%), a third thought it was too soon to tell if the legislation would adversely impact delivery times (32.3%) and one felt it had not affected delivery times.

2.10 A third of respondents felt it was possible to quantify the extent of delays, estimating delays of 1-3 months as a result of the ban; the remainder felt that it was not yet possible to quantify the extent of delays (75%).

2.11 Just under half of respondents (47%) are unsure whether the problems will be temporary or permanent. A third (35%) believe that the problems will be permanent and only 18% think that the impacts are temporary.

2.12 A third of respondents believe that the ban has increased costs by over 15%. The remainder said it was too soon to tell.

Products

2.13 The majority of respondents said that the ban will have impact on buildability and sequencing of projects (68%), reporting a wide range of product issues.

2.14 The majority of respondents do not manufacture or supply materials/ products and are therefore reliant on the supply chain and just under a quarter said that they were collaborating with suppliers, including over design (23.5%)

- 2.15 A quarter of respondents (26.5%) suggested that there are some exemptions that should be withdrawn.

Performance standards

- 2.16 Just under a quarter of respondents (23.5%) believe that the ban has made determining compliance clearer. However, the majority (62%) feel that it ban requires improvement.
- 2.17 Just over half of respondents (53%) suggested that Building Control Officers/Inspectors do not seem to fully understand the legislation and therefore have issues with giving guidance.

Benefits

- 2.18 Two thirds of respondents (65%) believe that the ban has provided benefits.
- 2.19 However, 18% of respondents reported that the detriments outweigh any benefits of the ban.

Other issues

- 2.20 Other findings to emerge from the analysis are:
- A high proportion of responses to individual questions covered multiple issues, often relevant to other questions. The degree of overlap of issues appears high.
 - Of those that support the ban, a significant proportion report concern regarding lack of clarity.
 - The most commonly cited instances of lack of clarity and resulting uncertainty were:
 - = Definition of what components are defined as “external” in specific situations
 - = Lack of availability of advice/answers from Building Control
 - = Difficulty in identify material/ product compliance, compounded by the overlapping nature of British/EU standards
 - = Some exempted items are/could be identified as at risk by Safety Case Reviews
- 2.21 As a result, much of the industry appears to be taking a risk-adverse approach until there is more clarity from MHCLG on critical aspects of the legislation and guidance.

3. Survey process and response

Survey process

- 3.1 An online survey process was used, in order to make it as easy as possible for organisations to respond to the survey.

Structure of the questionnaire

- 3.2 A concise but comprehensive questionnaire was developed by the consultants, based on 18 broad ranging questions, covering key themes ranging from clarity of the new legislation, the inclusions in the exemptions list and product development plans (see a list of questions at Annex A), The questionnaire was reviewed by MHCLG before it was issued.
- 3.3 The questionnaire was piloted to ensure it worked smoothly.
- 3.4 The 18 questions were designed to explore views and issues round five themes:
- Clarity and interpretation
 - Impact
 - Products
 - Performance standards
 - Benefits

Initial target audience

- 3.5 100 organisations were invited to undertake the survey. The list of organisations was assembled by the consultants and reviewed by MHCLG.
- 3.6 The list included a broad range of organisations in the industry. Invitations were first sent out by email. Follow-up reminders were sent out via email or by phone.
- 3.7 (see list of types of firm/organisation/stakeholder invited to respond at Annex A)
- 3.8 Respondents were given two weeks to respond.

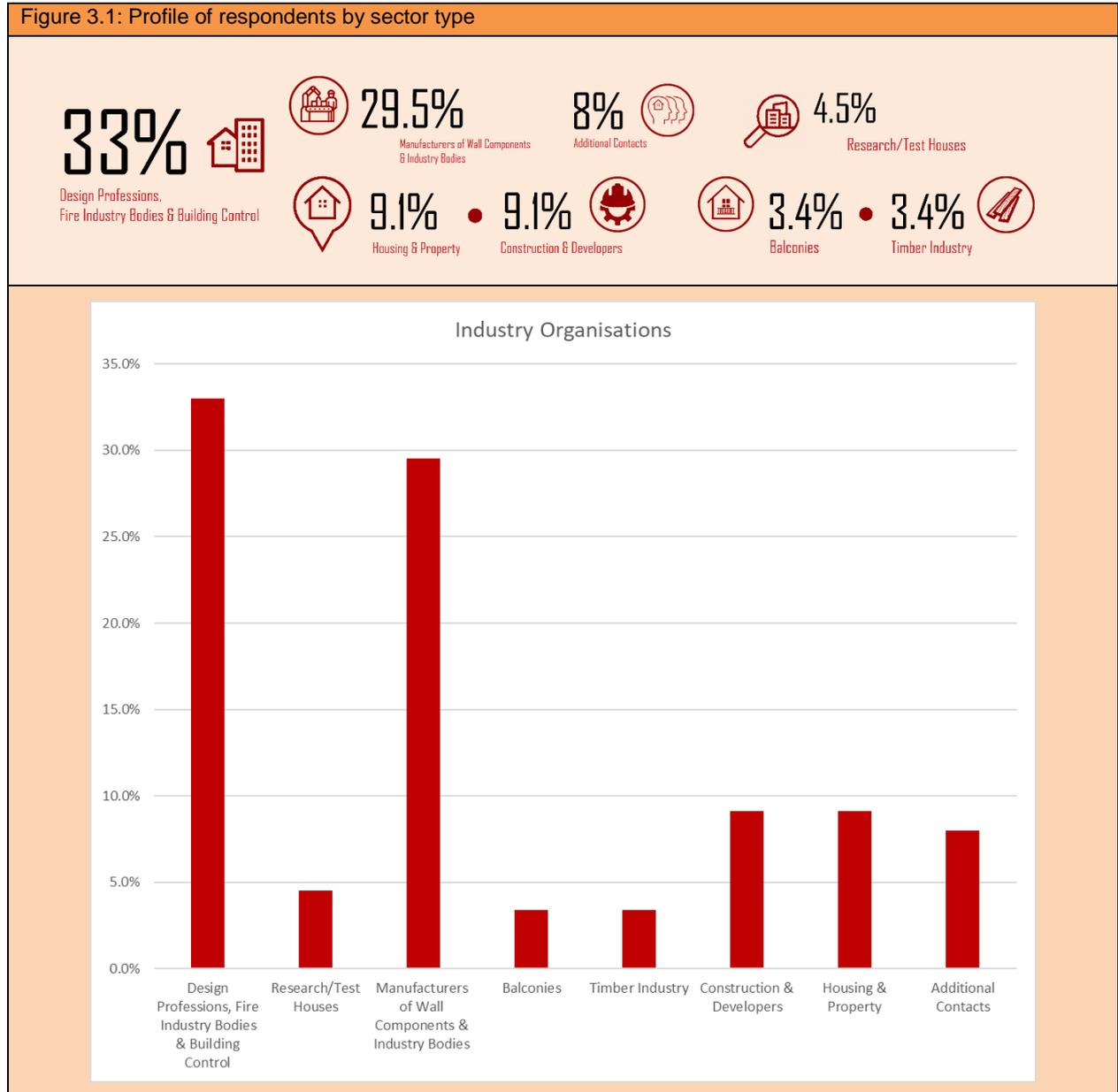
Wider promotion of the survey opportunity

- 3.9 Although every attempt had been made to invite all potentially interested parties to respond to the survey, inevitably not all interested organisations were identified at the outset. The survey process however had been designed to both allow for, and encourage, a wider range of participants to respond. The opportunity to respond was promoted to a wider audience through:
- Inviting initial respondents to send the survey link to other potentially interested parties
 - Requests to key industry/trade bodies to identify other potential interested parties.

Responses

- 3.10 A total of 34 organisations responded to the survey, representing a response rate of 34%.
- 3.11 The responses encompassed a wide range of technical comment through to non-technical observations.
- 3.12 Figure 3.1 shows the profile of respondents.

Figure 3.1: Profile of respondents by sector type



Analysis of the responses

3.13 Two methods were used to analyse the response:

- All 18 questions invited open-ended text responses. The responses varied from short and concise to substantial responses covering several issues. The responses were reviewed and synthesized by a team of three consultants, with different types of expertise, with the aim of identifying concise summaries of the main points being made. This was in itself a qualitative process (rather than quantitative) and is necessarily subjective in nature. Ensuring that the responses were reviewed by three different consultants, who then cross-referenced their conclusions (compared notes), enabled the team to arrive at a consensual interpretation of each response, reducing any extent of interpretation error. Illustrative examples of the more comprehensive responses to questions are provided at Annex D.
- The responses were also translated into quantitative results through a scoring process, illustrated in Figure 3.2 below.

Figure 3.2: Illustration of how responses to questions were scored

		It is clear	Requires improvement	Unknown
Q2	Is what the ban applies to clear with regard to buildings that are covered by the legislation?	22	4	8
Q3	Is what the ban applies to clear with regard to the parts of external walls that are covered?	9	15	10
Q4	Is what is included in the exclusions clear?	7	17	10
Q14	Do you feel that the legislation wording and/or associated guidance needs to be amended to aid clarity?	0	32	2

3.14 The scores for all questions are provided at Annex C.

4. Understanding, Clarity and Interpretation

4.1 This section focuses on analysis of the responses regarding extent of understanding and clarity coupled with ease of interpretation. These issues are covered by questions 2, 3, 4 and 14 of the survey:

- Q2 Is what the ban applies to clear with regard to buildings that are covered by the legislation?
- Q3 Is what the ban applies to clear with regard to the parts of external walls that are covered? If not, please state why not?
- Q4 Is what is included in the exclusions clear? If not, why not?
- Q14 Do you feel that the legislation wording and/or associated guidance needs to be amended to aid clarity? If so, how?

Summary

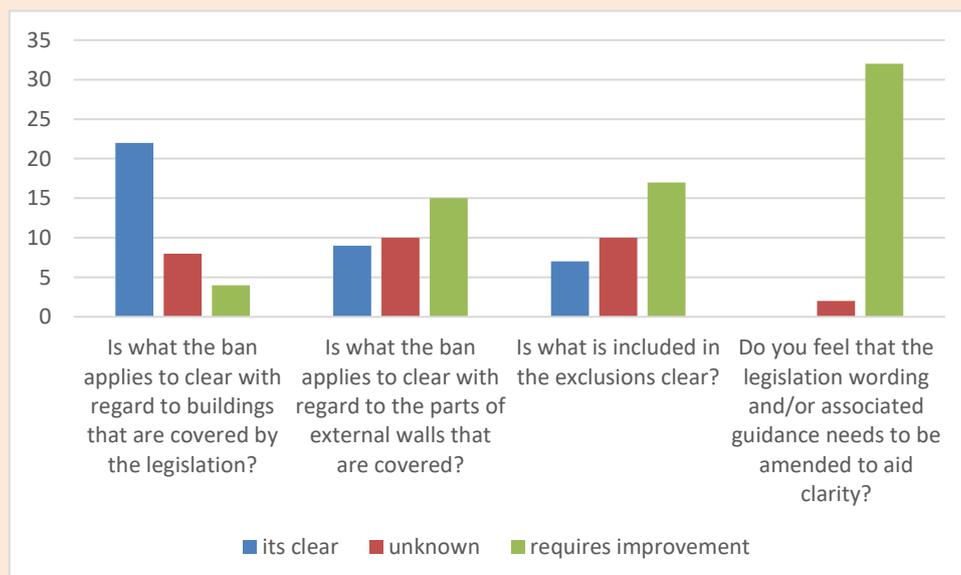
4.2 In response to Q2, the majority (65%) of respondents reported that they think it is clear which buildings the ban applies to. However, a significant proportion consider that the ban is either ambiguous (24%) or that it requires improved clarity (12%).

4.3 In response to Q3, only a quarter (26.5%) considered that it is clear which external walls the ban applies to. Just under half (44.1%) stated the ban had too many grey areas or “unclear” statements regarding which external walls it applied to. The remainder considered the ban ambiguous in this regard (29.4%)

4.4 In response to Q4, half of respondents (50%) were confused regarding the pupose of the excluded components list. Certain contradictions were mentioned amongst those that felt the exclusions were ambiguous (29.5%), and the rest asked for a general clarification (20.5%).

4.5 In response to Q14, almost all (94%) argued that the wording of the ban and/or associated guidance needs to be amended to improve clarity.

Figure 4.1: Survey responses to questions about the clarity of the ban



Key Issues Raised

- 4.6 There was general support for the objectives of the ban to increase human safety, but some concerns were expressed regarding the extent to which it would achieve these aims given the clarity issues identified.
- 4.7 Most respondents stated that they understood the legislation in the round, that it is clear what it applied to, but subject to the following caveats/ questions/ issues:
- Is EDPM a membrane or a sealant?
 - What is a 'fixing', sealant, membrane, etc? Respondents requested that definitions be provided.
 - Clarity needed on insulation clips, washers, packers etc
 - Are blinds and shutters included?
 - Does the ban include interstitial blinds?
 - Are all balcony formats 'specified attachments'?
 - Are glazed doors exempt like windows are?
 - Are spandrel panels coupled to windows included?
 - Do the requirements apply to adjacent podiums and walkways?
 - The situation with fringe construction such as parapets, separate but contiguous walls, roof interfaces, etc is unclear, are they included?
 - Clarity required as to why spandrel panels are in the ban
- 4.8 Within the range of these responses there was a call for amended guidance to aid clarity. The majority of respondents stated that they understood what buildings the ban applied to but also questioned why it did not cover other types of buildings with sleeping accommodation.
- 4.9 One of the most significant concerns to come through was with regard to the impact of clarity issues on compliant product availability. This issue was raised in particularly by respondents involved in manufacturing/designing products.

5. Impacts

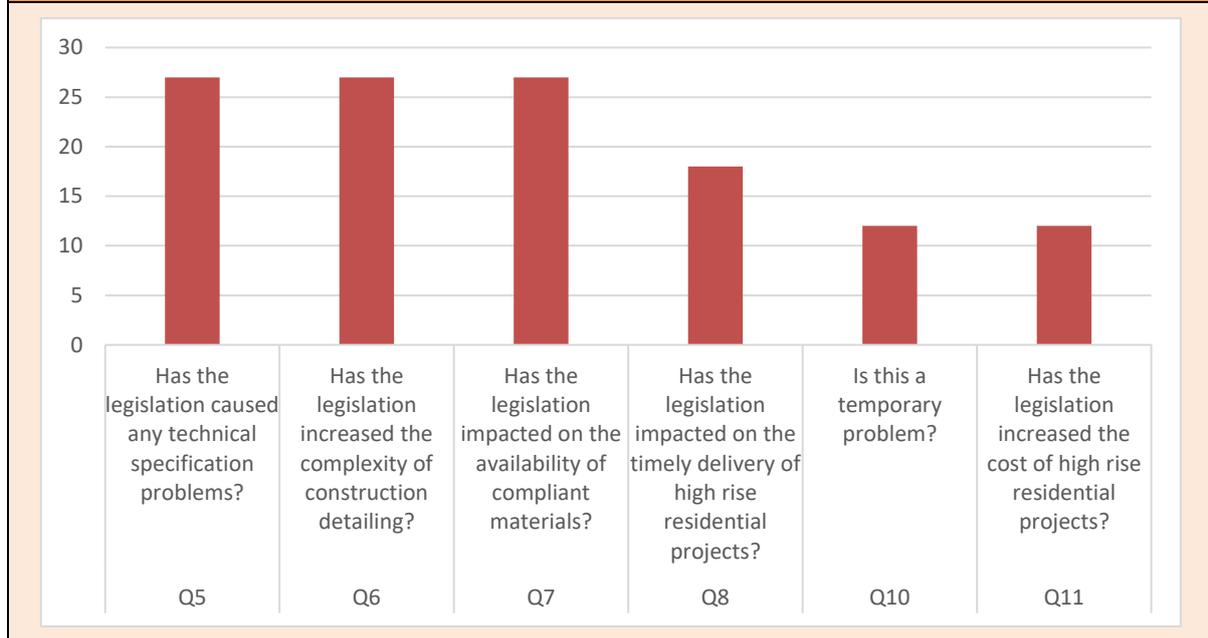
5.1 This section focuses on analysis of the responses regarding extent of impact of the ban. These issues are covered by questions 5-11 of the survey:

- Q5 Has the legislation caused any technical specification problems?
- Q6 Has the legislation increased the complexity of construction detailing?
- Q7 Has the legislation impacted on the availability of compliant materials?
- Q8 Has the legislation impacted on the timely delivery of high-rise residential projects?
- Q9 If so, by how many months on average?
- Q10 Is this a temporary problem?
- Q11 Has the legislation increased the cost of high-rise residential projects? If so by how much (% of total cost)?

Summary

- 5.2 Regarding Q5, all but one of the respondents (97%) reported that the legislation is causing technical specification problems.
- 5.3 Regarding Q6, the majority suggested that construction detailing has become more complex due to the legislation (79.5%). A small proportion think this will be a temporary issue (11.8%).
- 5.4 Regarding Q7, most respondents (79.5%) said that readily available products will no longer be acceptable and that alternatives will be hard to find. A small proportion suggest that the legislation had been introduced too soon for compliant materials to be readily available (8.7%). A small proportion of respondents said that they were not affected (5.9%)
- 5.5 Regarding Q8, circa half of the respondents reported notable impacts in delivery times on new projects (52.9%), a third thought it was too soon to tell if the legislation would adversely impact delivery times (32.3%) and one felt it had not affected delivery times.
- 5.6 A third of respondents felt it was possible to quantify the extent of delays, estimating delays of 1-3 months as a result of the ban; the remainder felt that it was not yet possible to quantify the extent of delays (75%).
- 5.7 Regarding Q9, the majority of respondents say it is too difficult to quantify the impact in terms of delays to projects yet (75%), the remainder believe the ban is resulting in delays of 1-3 months or more (Q9).
- 5.8 Regarding Q10, just under half of respondents (47%) are unsure whether the problems will be temporary or permanent. A third (35%) believe that the problems will be permanent and only 18% think that it is a temporary problem.
- 5.9 Regarding Q11, the majority of respondents' state that it is too difficult to quantify if the legislation increased the cost of high-rise residential projects (65%), although almost a third (30%) believe that it has increased costs by over 15%. (Q11)

Figure 5.1: Number of respondents answering yes to questions about impact



Key Issues Raised

5.10 Respondents confirm that the requirements have had a significant impact on the following:

- Design, detailing and specification
- Design of simple and sound solutions
- Procurement of suitable products (e.g. cavity trays, laminated glass for balustrades)
- Arbitrary prohibition of commonly used robust products
- Impossibility of alternatives in respect of some components (e.g. some membranes such as EPDM)
- Extended time delays in design and construction programming
- Increased cost
- No current improvement to the compliance trail and Building Control process due to getting up to speed & approach to risk by inspectors
- Some confusion, uncertainty and inability to sensibly satisfy all aspects of the legislation
- Some aspects are seen as counter productive
- Some impacts with regard to compliance with Part C and L, as well as general safety and building durability (such as the below DPC zone, roof parapets and stainless steel cavity trays)
- Whilst the responses show an accurate reflection of the current situation there was not much hard data submitted in support of the time and cost aspects but some stating delays to a high rise buildings being 6-12 weeks as a consequence.

- There was some uncertainty in the responses as to whether the impacts might be a temporary state or not.

6. Products

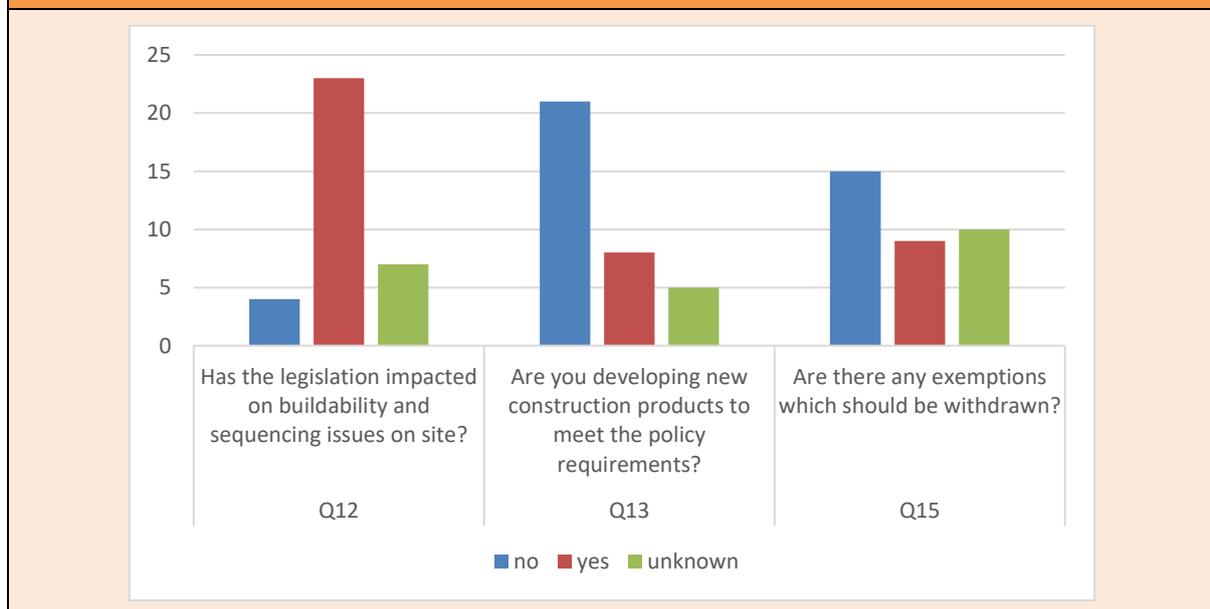
6.1 This section focuses on analysis of the responses regarding extent of impact of the ban. These issues are covered by questions 12,13 and 15:

- Q12 Has the legislation impacted on buildability and sequencing issues on site?
- Q13 Are you developing new construction products to meet the policy requirements?
- Q15 Are there any exemptions which should be withdrawn, e.g. where there are now products available which achieve the A2-s1,d0

Summary

- 6.2 Regarding Q12, the majority of respondents said that the ban will have impact on buildability and sequencing of projects (68%), reporting a wide range of product issues.
- 6.3 Regarding Q13, the majority of respondents do not manufacture or supply materials/ products and are therefore reliant on the supply chain and just under a quarter said that they were collaborating with suppliers, including over design (23.5%)
- 6.4 Regarding Q15, a quarter of respondents (26.5%) suggested that there are some exemptions that should be withdrawn.

Figure 6.1: responses to questions about products



Key Issues Raised

- 6.5 The analysis of responses suggested a varied mix of concerns, such as:
- That some inclusions have not been justified

- There are Research and Development programmes ongoing to develop compliant products but no specific examples were provided
- There are some inclusions where it is felt that the reaction to fire requirements unduly prohibit the use of eminently suitable existing products and that any forced move to non-combustibility will adversely affect the products' performance, buildability and/or safety
- Could plastic products be non-extinguishing rather than non-combustible to help small products to e continued to be used?
- Laminated glass for balustrades – toughened is deemed by some to be unsafe when panels break
- Cavity trays – very difficult to install metal on site and how is it sealed?
- Insulation retention discs, cavity weeps, anti-roosting spikes, periscopic ducts and vent grilles should all not be exempt
- Boiler flues cannot achieve the performance requirement and as consequence that
- Below DPC conditions – membranes cannot achieve B-s3, d0 as per the guidance ; concerns about the use of some insulation in the wet zone below DPC
- Green walls cannot be achieved anymore due to dry planting
- The requirement for balcony decking should be revised to A2fl-s1 from A-s1, d0.

7. Performance Standards

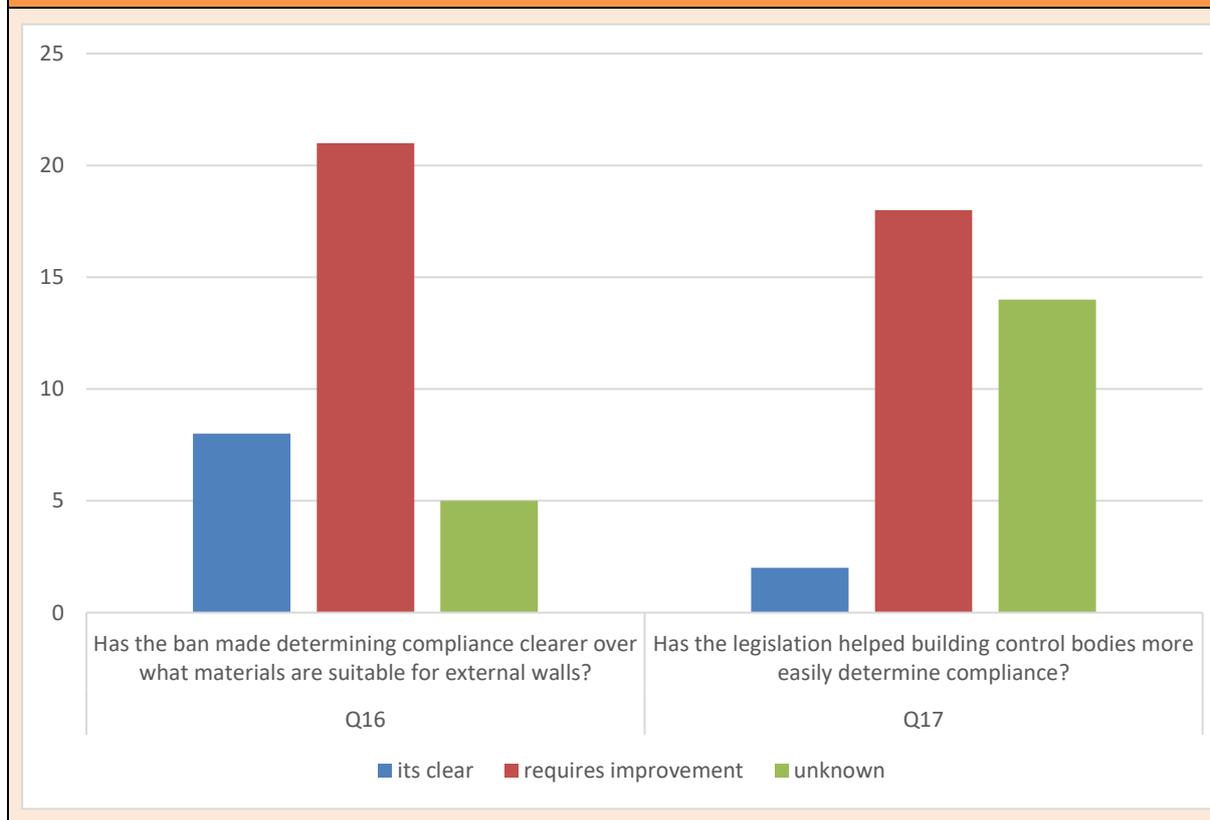
7.1 This section focuses on analysis of the responses regarding extent of impact of the ban. These issues are covered by questions 16 and 17:

- Q16 Has the ban made determining compliance clearer over what materials are suitable for external walls?
- Q17 Has the legislation helped building control bodies more easily determine compliance?

Summary

- Just under a quarter of respondents (23.5%) believe that the ban has made determining compliance clearer. However, the majority (62%) feel that it ban requires improvement.
- Just over half of respondents (53%) suggested that building control officers/inspectors do not seem to fully understand the legislation and therefore have issues with giving guidance.

Figure 7.1: responses to questions about performance standards



Key Issues Raised

7.2 Many responses indicated that it was believed that the legislation includes some unnecessary constraints and that there are also unintended consequences involved both of which are prohibiting the use of sound and no, or very low, risk components, these include:

- Laminated glass for balcony balustrading. Whilst it cannot satisfy the test requirements it is not felt to present any fire risk and is an overall safer solution than other glazing.
- Cavity Trays. Similarly, these are not believed to offer a fire risk and non-combustible materials do not flexibly lend themselves to the necessary construction configurations, water transmittance detailing and durability that tall buildings require.
- EDPM. Is this a risk? It is unlikely that there are non-combustible alternatives.
- Membranes. Not all membrane uses can achieve the stated allowance and they are not considered an undue risk, e.g. vapour barriers.
- Small plastic items. Some may be termed 'fixings' but all of this is uncertain. They do not constitute a risk and it is felt that a suitable performance requirement could be included so as to allow their continuing beneficial use.
- Boiler Flue penetrations. These are banned because of their plastic inner flue lining which does not present a risk in itself. They should be excluded or codified into certain allowable penetration details.
- Concrete Sandwich Panels. The necessary use of plastic insulants will preclude their use, but of a very low fire risk nature.
- Thermal Breaks. There is some uncertainty as to the limits of use and attendant sound detailing.

7.3 Many responses were specific to their own industry sectors. An example is as follows – *'it is unclear why certain products have been excluded when they could pose a combustibility risk and yet others are included in the ban when there is no such risk'*. The respondent notes the previous year's reports on several fires being caused by the sun's rays refracting from mirrors or glass, and noting that *'maybe if external blinds, awnings or shutters had been fitted and operated, then these could have prevented such fires'*.

7.4 A few respondents mentioned that they felt there should still be allowance of other walling formats where proven by engineered design and testing.

8. Benefits

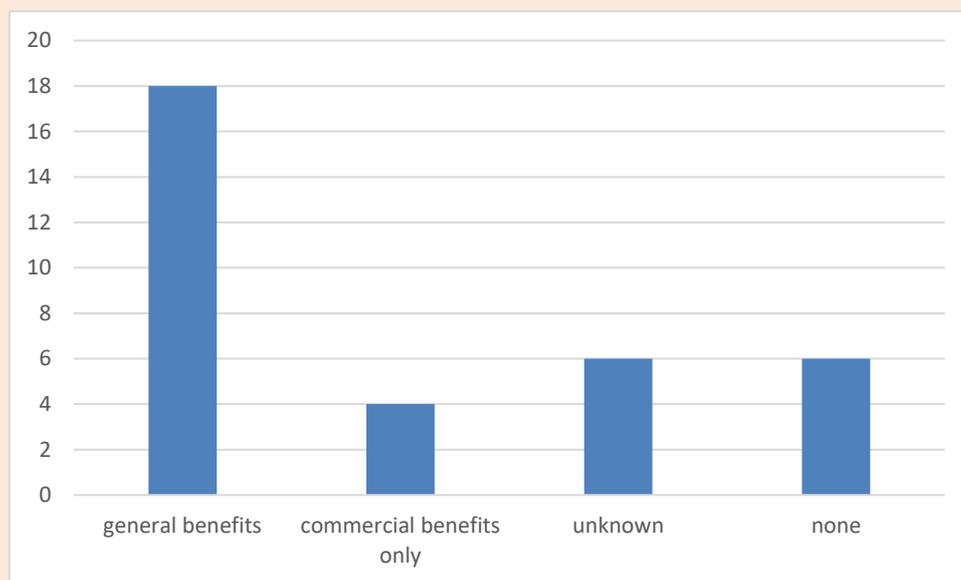
8.1 This section focuses on analysis of the responses regarding extent of impact of the ban. These issues are covered by questions 18:

- Q18 Do you believe the ban has provided benefits? If so, please state what they are.

Summary

- Two thirds of respondents (65%) believe the ban has provided benefits.
- However, 18% of respondents report that the detriments outweigh any benefits of the ban.

Figure 8.1: responses to question about whether the ban has provided benefits



Key Issues Raised

- 8.2 Recognition of the benefits accruing from the ban included:
- Inherently safer construction will help inhibit the number of façade fires
 - Believed to help a wider and safer approach to fire safety across design, construction and product industry generally
- 8.3 There were some dissenting voices that believe the ban only benefits traditional non-combustible suppliers, yet most thought that the ban benefits overall industry awareness, and clarity to determine compliance.

9. Conclusions

9.1 Key points from the analysis are:

Understanding, Clarity and Interpretation

- The majority (65%) think it is clear which buildings the ban applies to
- Only a quarter (26.5%) consider that it is clear which parts of the external walls the ban applies to
- Half are confused regarding the intentions of the list of excluded items. A number of contradictions were noted
- Almost all (94%) felt that the wording in the ban and associated guidance needed to be amended to improve clarity.

Impact

- All but one of the respondents (97%) reported that the legislation is causing technical specification problems.
- The majority thought that construction detailing has become more complex. A proportion think this will be a temporary issue though (11.8%).
- Most respondents reported that products normally available are no longer acceptable and that alternatives are hard to find (79.5%).
- Circa half of the respondents reported notable impacts in delivery times on new projects; A third estimated delays of 1-3 months
- A third believe that the ban has increased costs by over 15%.

Products

- The majority felt that the ban will have impact on buildability and sequencing of projects (68%), reporting a wide range of product issues.
- Just under a quarter said that they were collaborating with suppliers, including over design (23.5%)
- A quarter of respondents (26.5%) suggested that there are some exemptions that should be withdrawn.

Performance standards

- Just under a quarter of respondents (23.5%) believe that the ban has made determining compliance clearer. However, the majority (62%) feel that it ban requires improvement.
- Just over half of respondents (53%) suggested that Building Control Officers/Inspectors do not seem to fully understand the legislation and therefore have issues with giving guidance.

Benefits

- Two thirds of respondents (65%) believe that the ban has provided benefits.
- However, 18% of respondents reported that the detriments outweigh any benefits of the ban.

10. Annex A: Types of organisation responding

10.1 MHCLG sought views from industry bodies; manufacturers; developers; designers and beyond. Industry bodies that were organized include:

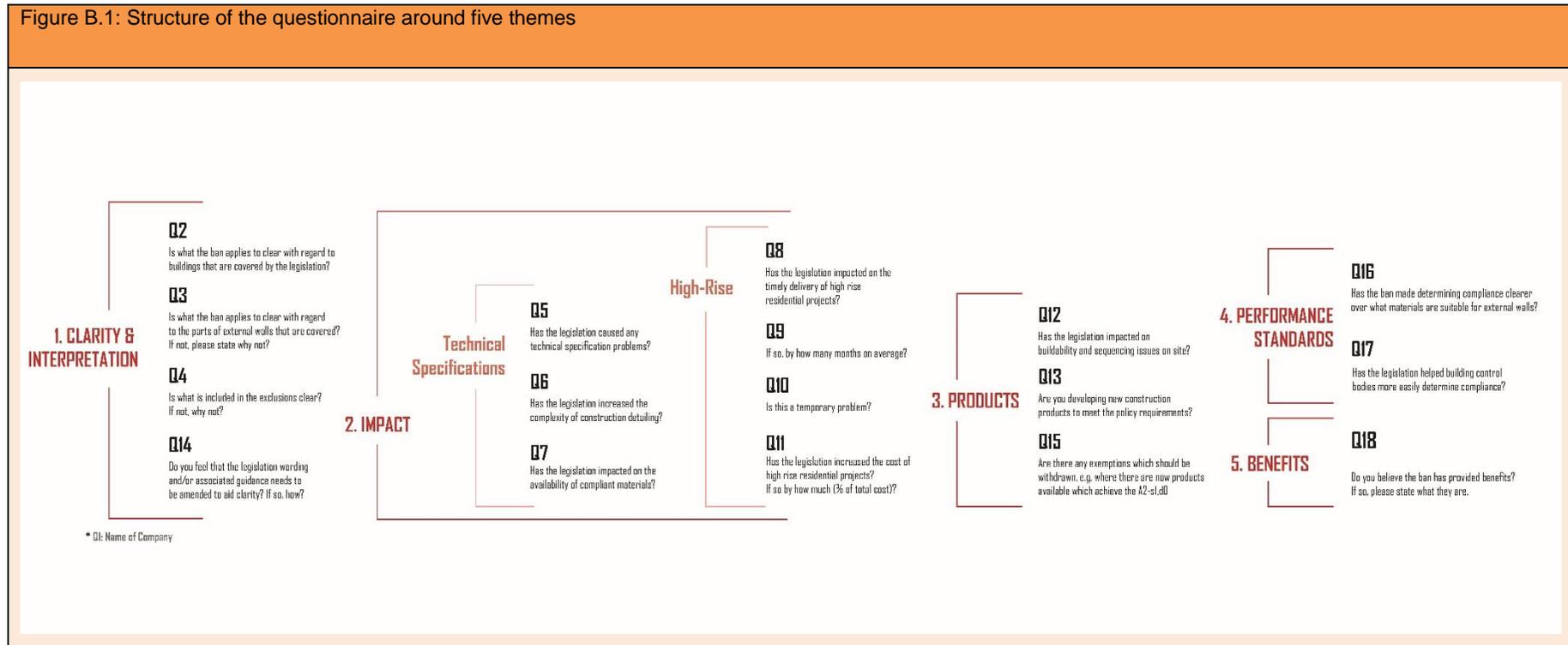
- Design Professions, Fire Industry Bodies & Building Control
- Manufacturers of Wall Components & Industry Bodies
- Construction & Developers
- Housing & Property
- Additional Contacts
- Timber Industry
- Balcony system or component suppliers
- Research/Test Houses

11. Annex B: The Questionnaire

11.1 The questionnaire comprised 18 open questions designed to explore views and issues around five themes

- Clarity and interpretation
- Impact
- Products
- Performance standards
- Benefits

Figure B.1: Structure of the questionnaire around five themes



The specific questions included were:

Q1 Name of your company/ organisation

Q2 Is what the ban applies to clear with regard to buildings that are covered by the legislation?

Q3 Is what the ban applies to clear with regard to the parts of external walls that are covered? If not, please state why not?

Q4 Is what is included in the exclusions clear? If not, why not?

Q5 Has the legislation caused any technical specification problems?

Q6 Has the legislation increased the complexity of construction detailing?

Q7 Has the legislation impacted on the availability of compliant materials?

Q8 Has the legislation impacted on the timely delivery of high rise residential projects?

Q9 If so, by how many months on average?

Q10 Is this a temporary problem?

Q11 Has the legislation increased the cost of high rise residential projects? If so by how much (% of total cost)?

Q12 Has the legislation impacted on buildability and sequencing issues on site?

Q13 Are you developing new construction products to meet the policy requirements?

Q14 Do you feel that the legislation wording and/or associated guidance needs to be amended to aid clarity? If so, how?

Q15 Are there any exemptions which should be withdrawn, e.g. where there are now products available which achieve the A2-s1,d0

Q16 Has the ban made determining compliance clearer over what materials are suitable for external walls?

Q17 Has the legislation helped building control bodies more easily determine compliance?

Q18 Do you believe the ban has provided benefits? If so, please state what they are.

Q19 Any other comments/thoughts on the ban?

12. Annex C: Scoring of the Responses

Figure C:1 Scoring of responses

		It is clear	Requires improvement	Unknown
Q2	Is what the ban applies to clear with regard to buildings that are covered by the legislation?	22	4	8
Q3	Is what the ban applies to clear with regard to the parts of external walls that are covered?	9	15	10
Q4	Is what is included in the exclusions clear?	7	17	10
Q14	Do you feel that the legislation wording and/or associated guidance needs to be amended to aid clarity?	0	32	2
		No	Yes	Unknown
Q5	Has the legislation caused any technical specification problems?	1	27	6
Q6	Has the legislation increased the complexity of construction detailing?	2	27	4
Q7	Has the legislation impacted on the availability of compliant materials?	2	27	3
Q8	Has the legislation impacted on the timely delivery of high-rise residential projects?	1	18	11
Q10	Is this a temporary problem?	6	12	16
Q11	Has the legislation increased the cost of high-rise residential projects?	0	12	22
		1-2 months	2-3months+	Unknown
Q9	If so, by how many months on average?	1	7	26
		No	Yes	Unknown
Q12	Has the legislation impacted on buildability and sequencing issues on site?	4	23	7
Q13	Are you developing new construction products to meet the policy requirements?	21	8	5
Q15	Are there any exemptions which should be withdrawn?	15	9	10
		It is clear	Requires improvement	Unknown
Q16	Has the ban made determining compliance clearer over what materials are suitable for external walls?	8	21	5
Q17	Has the legislation helped building control bodies more easily determine compliance?	2	18	14
		General benefits	Commercial benefits only	Unknown
Q18	Do you believe the ban has provided benefits? If so, please state what they are.	18	4	6

13. Annex D: Examples of the nature of individual responses

13.1 Below are three examples of responses made, illustrating the style or response and the range of topics addressed.

Example 1

13.2 On behalf of the BS8579 (Balcony) committee, we have debated the use of laminated glass balustrading at length, and unanimously agreed at our meeting this week that we should include a recommendation in the draft shortly to be published that laminated toughened glass balustrades should be included in the list of exemptions in clause 7.3.

13.3 There are many reasons we have identified to justify this decision including;

- This standard is for use throughout the UK and does not simply follow the precedent set against laminated glass for balconies in England;
- Glass for balconies, when acting as a guarding, is performing the same function as that of a full height window acting as the same, all component parts of which are exempted from Regulation 7(2) in England;
- The guidance in the Commission Decision (and Glass for Europe) is contradictory and therefore clarification is needed;
- The writing panel has found no evidence yet of laminated glass on a balcony leading to the spread of fire across a building or to another building;
- Glass has a place in the guardings of balconies as it can mitigate wind effects whilst at the same time allowing essential daylight into, and views out of, interior spaces;
- Where monolithic glass is used in guarding, the predominant industry opinion and evidence available is that the risks of injury and death from fragment impact after breakage are far higher than the safety risks associated with fire spread in laminated glass guardings;
- The same standards should be set in terms of laminated glass for windows, doors, glazed spandrels, enclosed balcony weather screens, open balcony guardings and Juliet balconies regardless of whether the glass guarding is part of the window assembly or fixed to the opening reveals.

Example 2

13.4 The ban of combustible materials applies to buildings over 18m in height unless they comprise double-skin masonry construction (brick & blockwork). But no building over 18m would ever have blockwork as its inner skin anyway - loadbearing masonry only works up to about 4 storeys. The ban exempts windows & doors (including those with timber and uPVC frames) which collectively account for a far greater percentage of the external facade than the small-but-vital envelope sundries which are non-contiguous, and which have no known role in any cases of residential fires. The ban confirms that balconies and canopies are considered part of the external wall. This has the unintended consequence of banning laminated safety glass (because the nylon inter-layer is theoretically combustible). Instead, glass balustrades will now have to be made from toughened glass - which shatters when broken; causing a sudden and total failure of the panel and the real risk of laceration to people below. We fear the effective ban on laminated safety glass (which has never been known to have played any role in a fire) will actually lead to injury and possible death as a direct consequence of this legislation.

Example 3

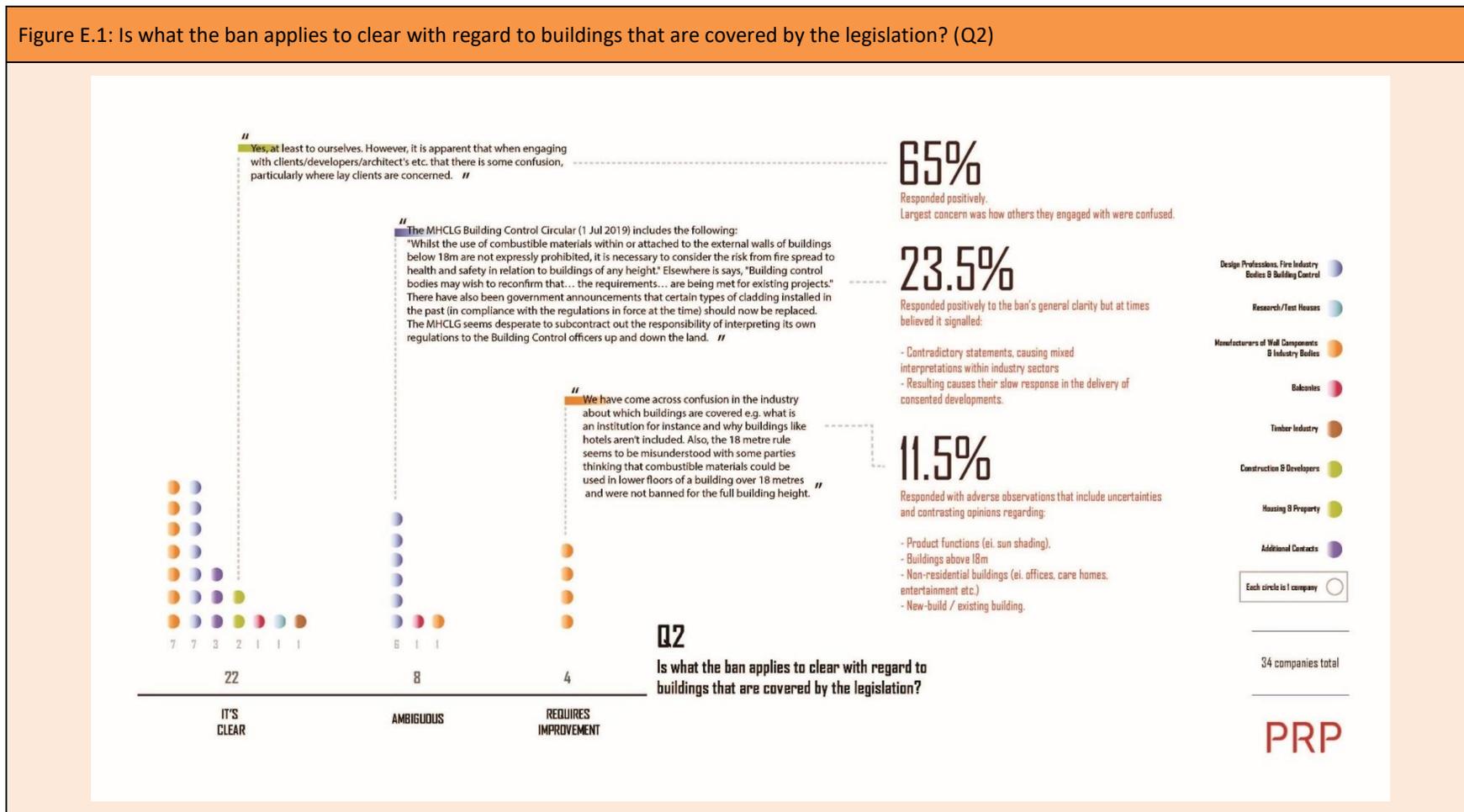
13.5 In an ideal world all products in a building would be fire-proof but for perfectly practical reasons that is not possible. There has to be a balance of risk with lifestyle, otherwise, clothing, consumable gas and electricity etc. would not be permitted. The balance is crucial, and we

would submit that the government did not take into account the benefits of blinds, awnings and shutters holistically. In fact, external shading is an effective solution rather than the problem and in any balanced assessment should be encouraged rather than negated.

- 13.6 The latest Committee on Climate Change Report (February 2019) highlights that some 4.5 million homes are overheating whilst only 1.8 million are in areas where there is a flood risk. Nearly 700 more deaths than average were recorded during the 15-day peak of the heat wave in June and July last year in England and Wales, according to official statistics. External shading is recognised as one of the most effective means of controlling overheating by preventing the solar gain from reaching the windows. It is not a new technology but one where, because of over-insulation, the importance is only beginning to be recognised in the United Kingdom but it has been extensively used in continental Europe. We would submit that the health risks from overheating are overwhelmingly greater than the possibility that the Amended Regulations seek to prevent

Annex E:

Figure E.1: Is what the ban applies to clear with regard to buildings that are covered by the legislation? (Q2)



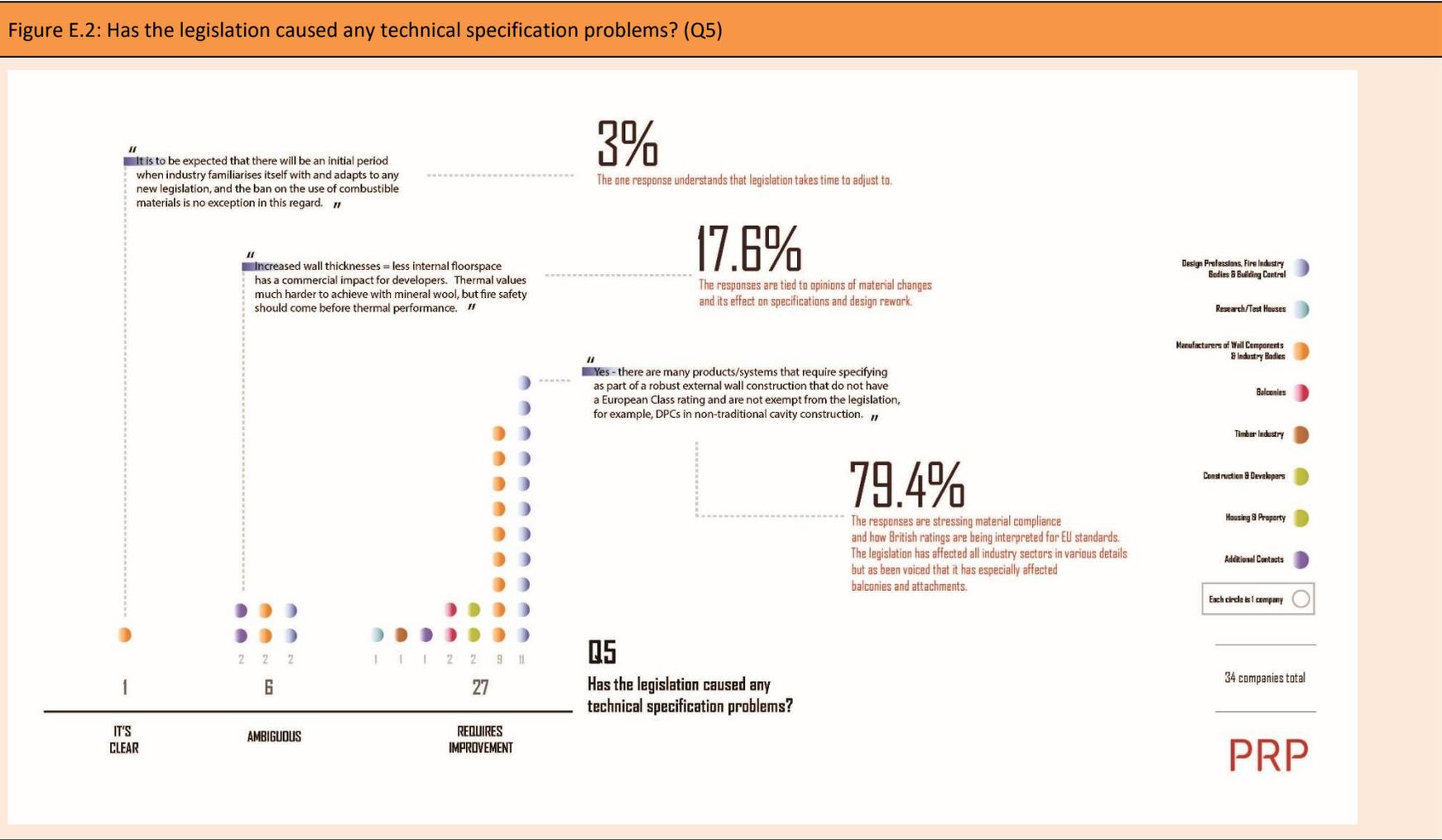


Figure E.3: Are there any exemptions that should be withdrawn? (Q15)

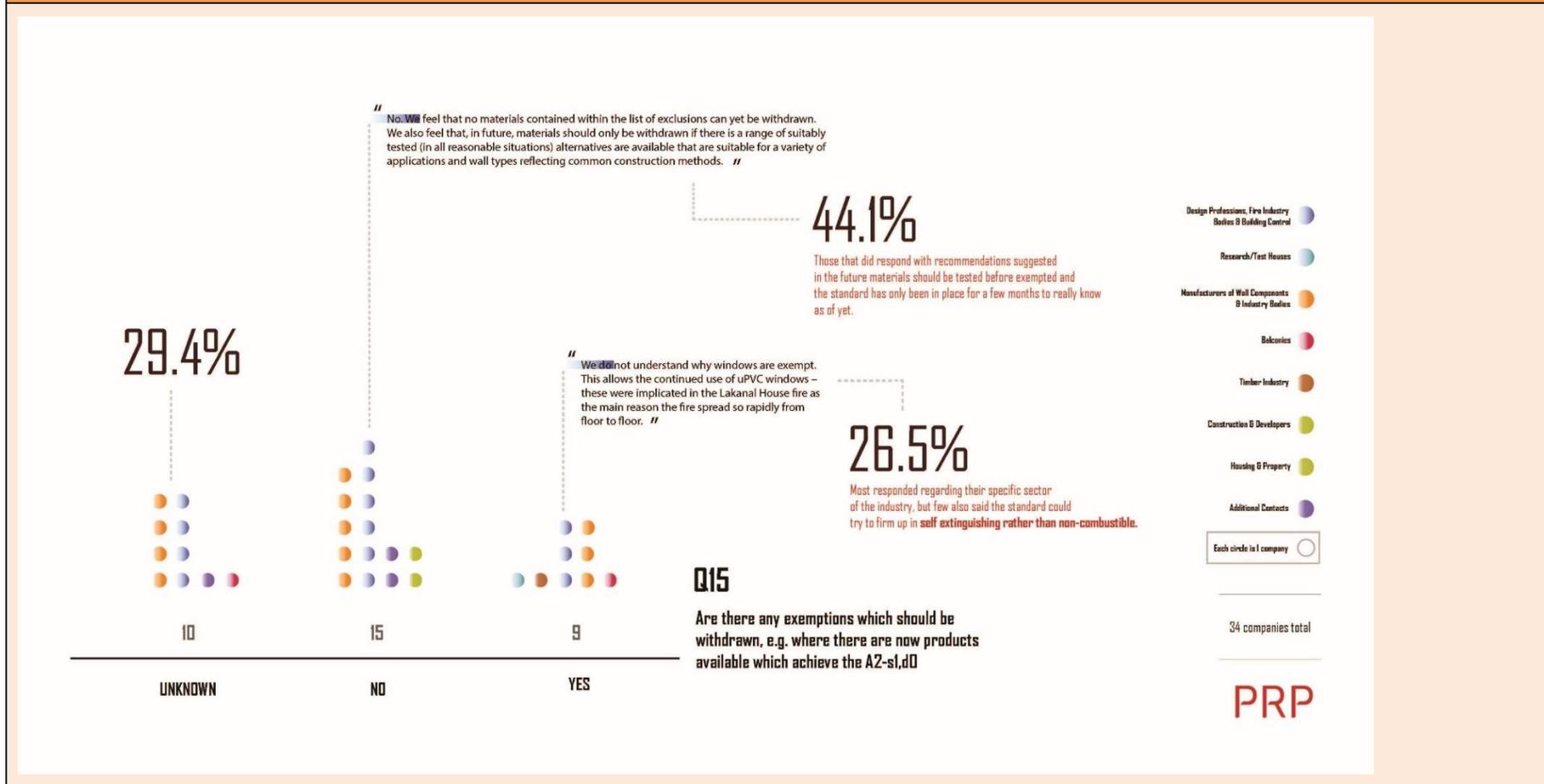


Figure E.4: Are you developing new construction products to meet the policy requirements? (Q13)

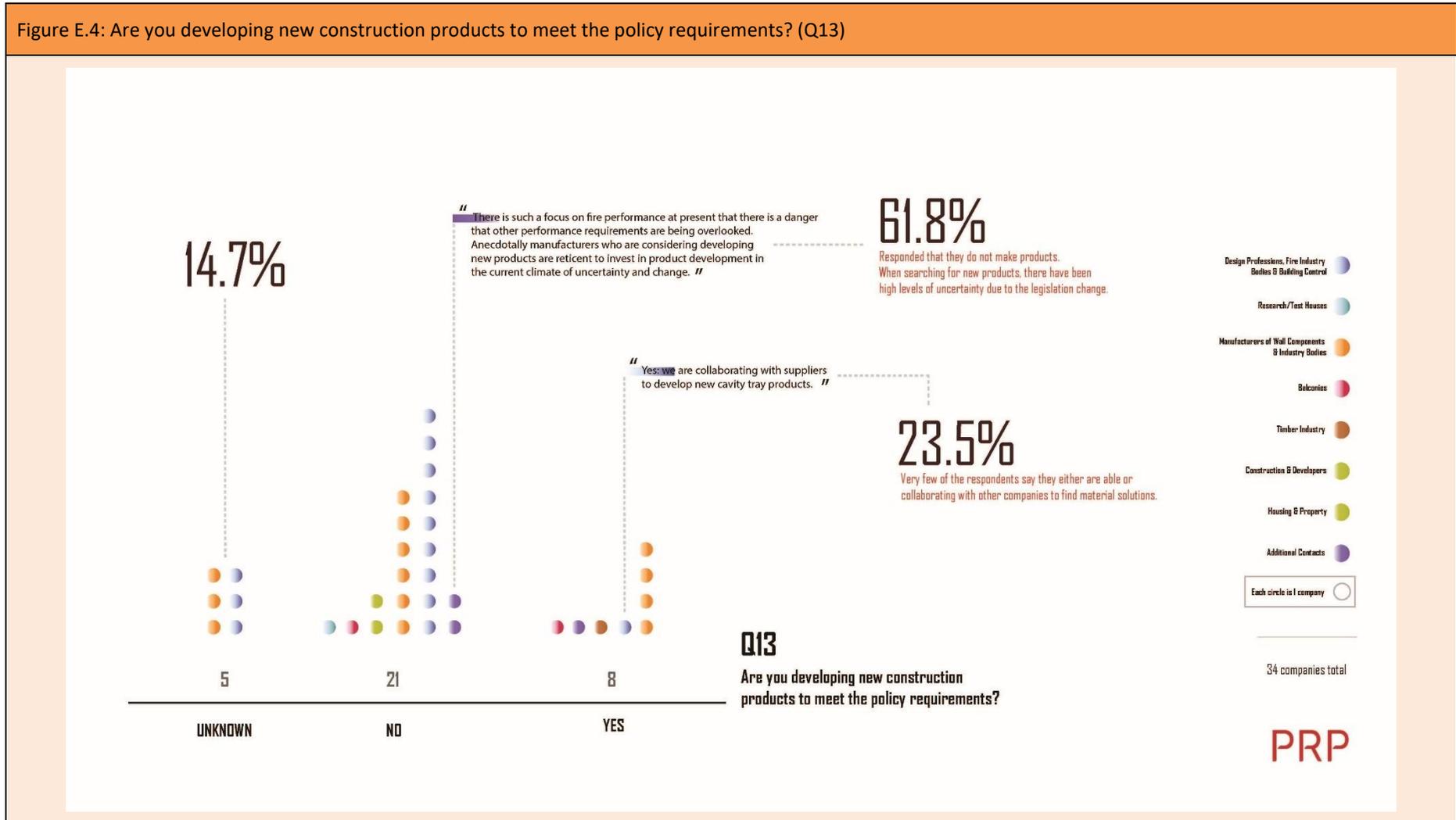


Figure E.5: Has the ban made determining compliance clearer? (Q16)

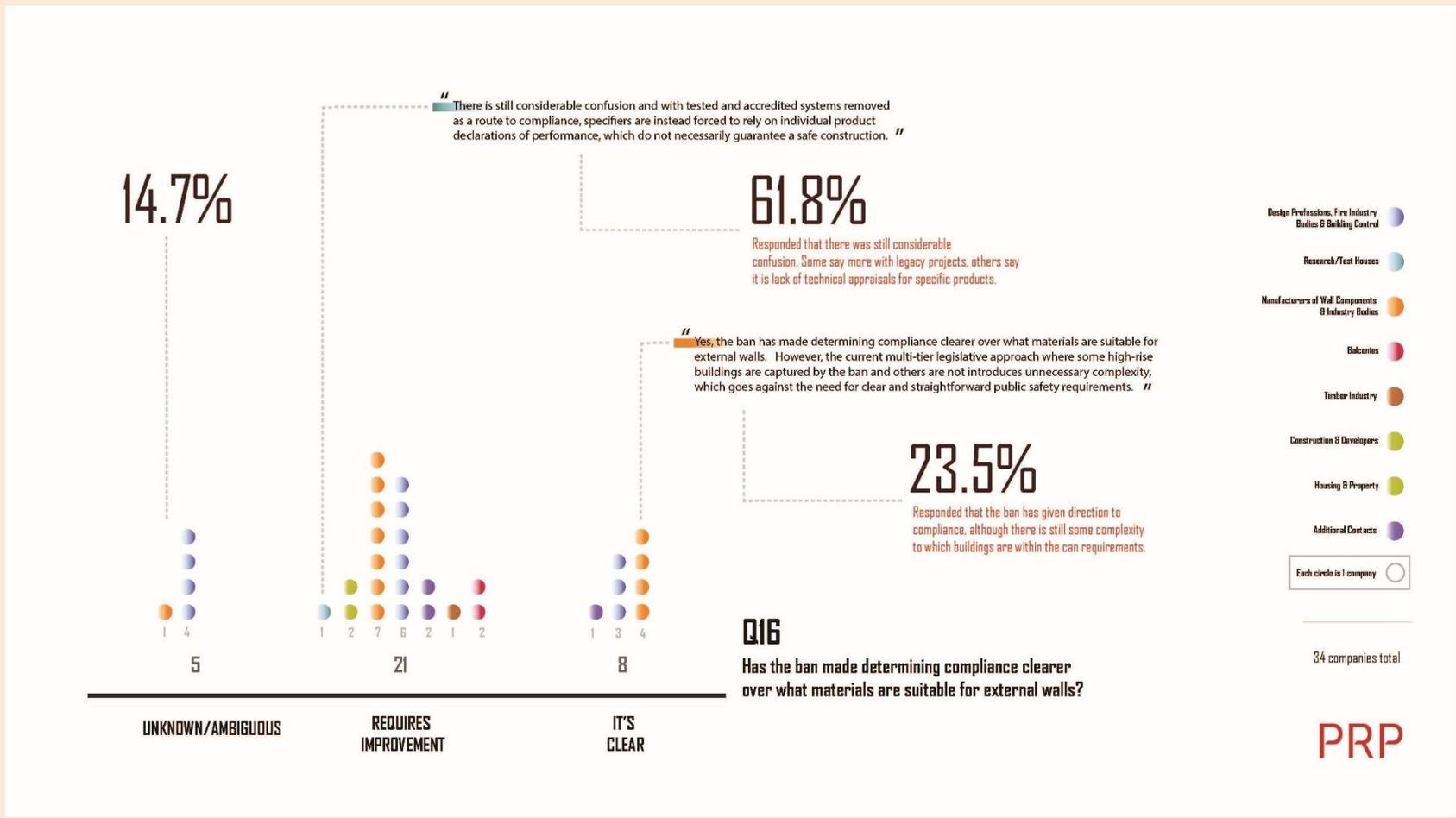


Figure E.6: Question 18 and percentage of respondent's answers under headline theme #5.

