

Reviewing Approved Document B (Fire safety)

Fire Sector Federation

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Final report by NBS Research

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1 Introduction

In March 2017, the Fire Sector Federation (FSF) commissioned NBS Research, an independent research organisation, to carry out a survey into Building Regulations Approved Document B (Fire safety). This is the final report, providing findings from that survey. It follows an interim report submitted in October.

NBS Research carried out an online survey, collecting survey responses between 15 July and 20 September 2017. The FSF and its member organisations invited their members to take part. Responses were received from across the construction and fire sectors, as well as from FSF members. These included design professionals, local authority building control, fire safety specialists, building contractors and manufacturers. The FSF also undertook public relations activity to drive professionals to the survey.

1.1 Survey respondents

At the beginning of the questionnaire, respondents were asked to confirm whether they were a professional who, in their role, contributes to *'making sure our buildings are constructed in accordance with the fire safety requirements of the Building Regulations in England.'* Anyone who answered 'no' to this was routed out of the survey. Those answering 'yes' continued; there were 531 professionals who did so and provided valid responses to the survey. This is a large and robust sample, representing professionals involved in ensuring that buildings are safe with respect to the fire safety aspects of the Building Regulations in England. Many are heavy users of the Building Regulations Approved Document Part B.

The survey represented a wide range of professionals (Table 1). The largest numbers of respondents came from Local Authority Building Control, fire safety consultants, the Fire and Rescue Service, and architects.

Table 1 - Organisation type of business

Type of business	Number of responses
Building Control Officers	215
Fire Safety Consultants	61
Fire and Rescue Service	58
Architects	56
Manufacturers	22
Multi-disciplinary	17
Approved Inspectors	17
Building surveyors	10
Insurers / reinsurers / insurance brokers	9
Engineers	8
Sub-contractors	8
Professional bodies	7
Large contractors / developers	4
Small / medium contractors	4
Other	33
Did not specify	2
Total	531

Respondents were from organisations of one or two people up to those with over 500 employees (Figure 1).

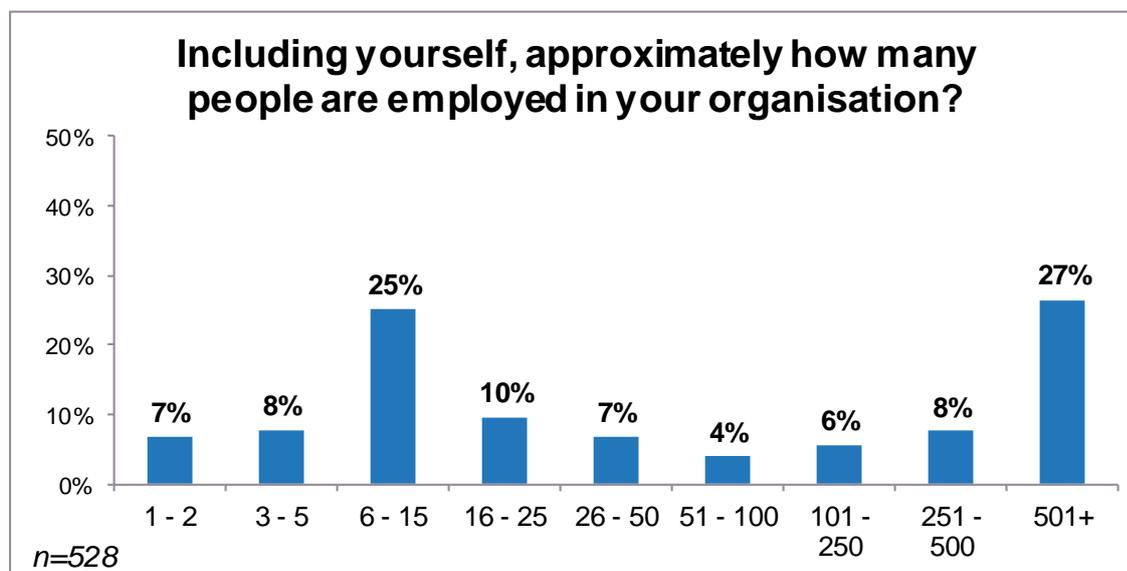


Figure 1 - Organisation size (number of employees)

There were respondents from all regions of Great Britain, though there was none from Northern Ireland (Figure 2).

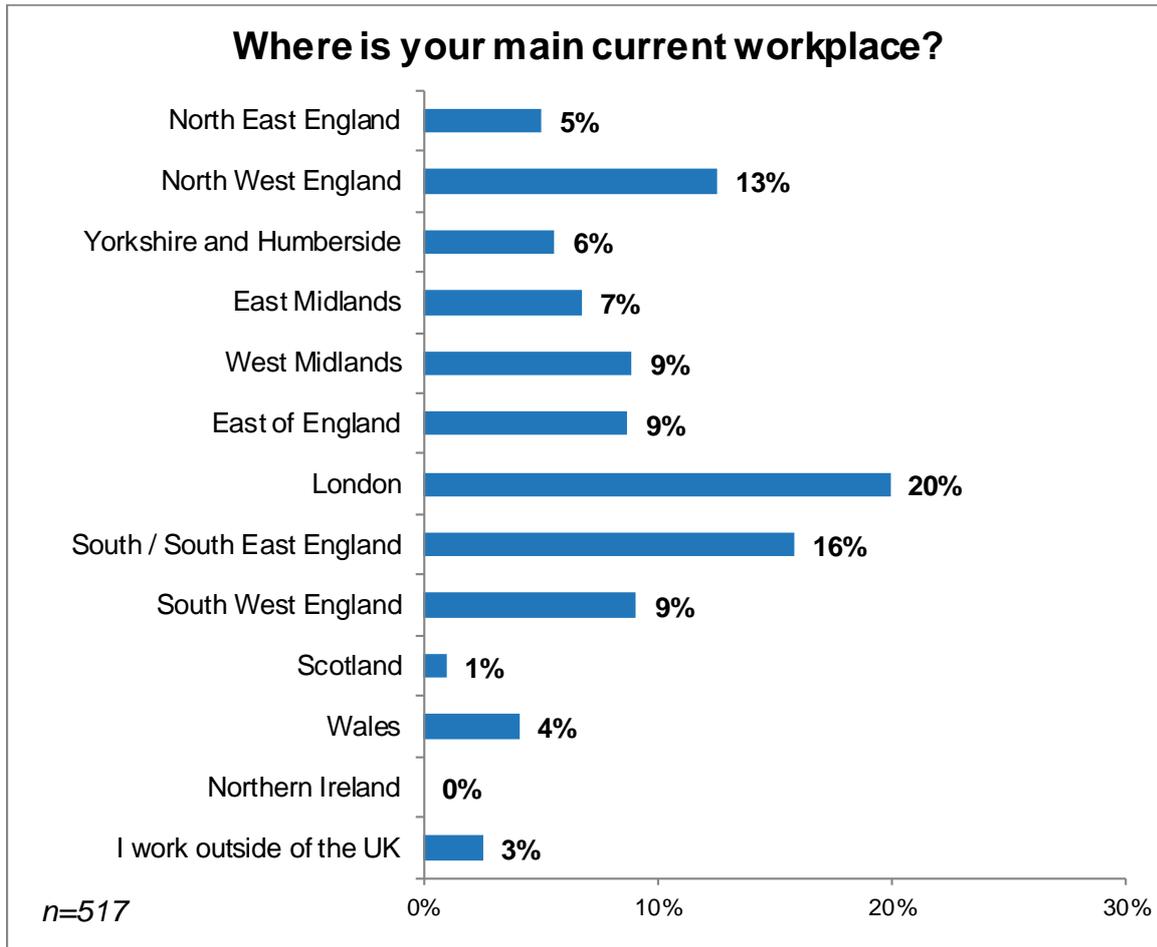


Figure 2 - Location of main workplace

All sectors were well represented, from public and private housing, to commercial, education, health and conservation (Figure 3).

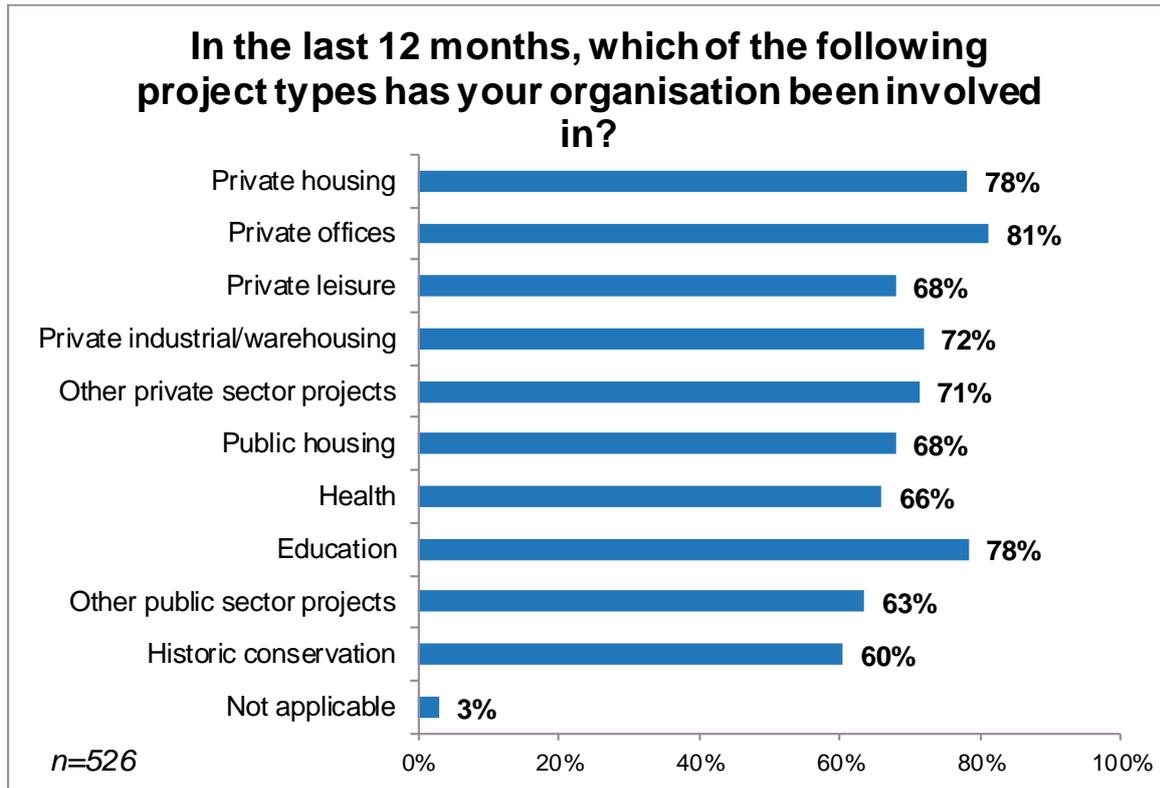


Figure 3 - Project types

Individuals had a range of experience, from those having worked in construction for less than five years, up to very experienced professionals with over forty years in the industry. Forty-two percent of respondents had worked in construction for 30 years or more (Figure 4).

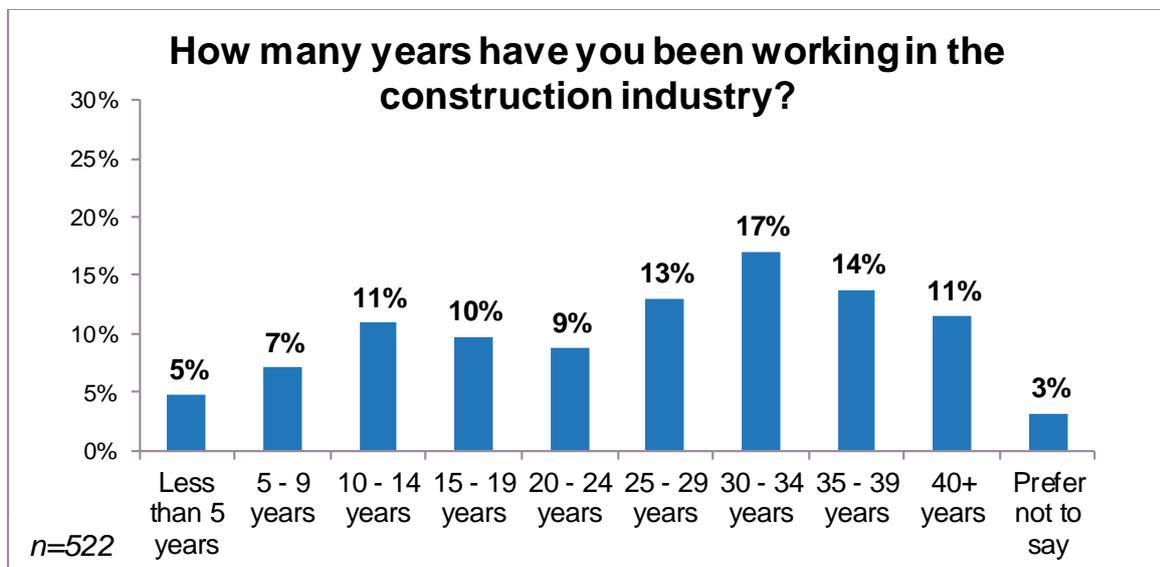


Figure 4 - Years working in the construction industry

It is not uncommon to see high proportions of experienced professionals responding to studies about technical information. Those who have worked in the industry for some time

have developed considerable knowledge of technical documents and, perhaps, feel particularly able to provide their views about them.

1.2 Notes on the analysis

This report includes percentage responses for all multiple choice-type questions, key charts, and some example verbatim comments from survey respondents. Percentages are rounded to the nearest whole number. Due to rounding, or where respondents could select more than one response per question, percentages may not always add up to 100.

A comparison of results between sub-groups has been carried out by the following (where each group was large enough to make such comparison viable):

- ‘Enforcement professionals’ (Local Authority Building Control and Approved Inspectors)
- ‘Design professionals’ (architects, engineers, surveyors, multidisciplinary)
- ‘Fire safety specialists’ (fire safety consultants, Fire Service, insurers)

Where there are differences in results between these groups that are statistically significant or where the pattern of response indicates a likely difference in response, those have been included.

NBS Research has also provided some initial concluding thoughts in the provisional summary of findings at the end.

This research has been carried out in accordance with the Market Research Society Code of Conduct.

2 Findings

2.1 Use of Approved Document B (Fire safety)

Ninety-five percent of respondents (507) had used either Volume 1 (Dwellinghouses) or Volume 2 (Buildings other than dwellinghouses) of Approved Document B. Figure 5 shows that more respondents had used Volume 2 (94%) than Volume 1 (77%). Three-quarters of respondents had used both volumes. Just over two-thirds (69%) had used at least another of the Approved Documents.

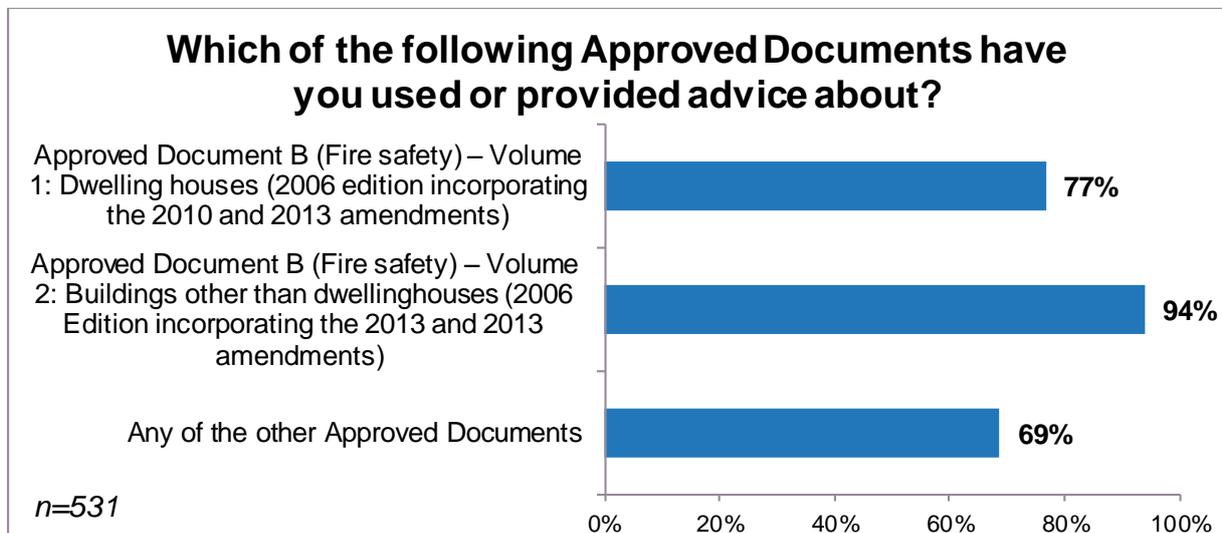


Figure 5 - Approved Documents used

Many survey respondents were frequent users of Approved Document B. Almost three-quarters (74%) of Volume 1 users did so at least every month; this rose to 84% for Volume 2 (Figure 6). About one third of users of each volume used them daily (31% of volume 1 users and 33% of volume 2 users).

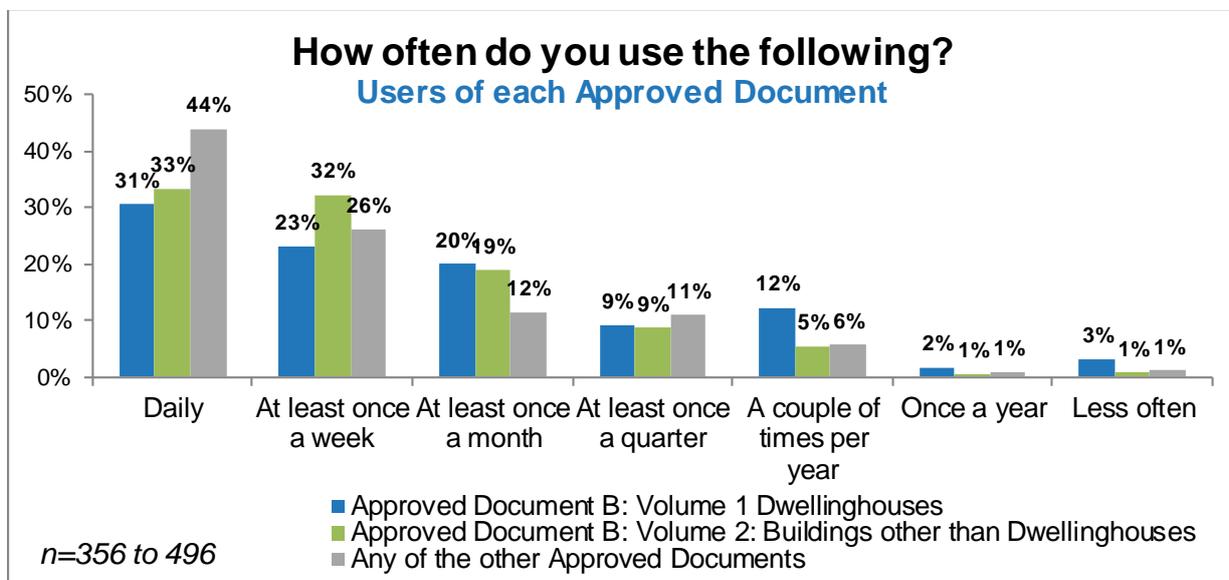


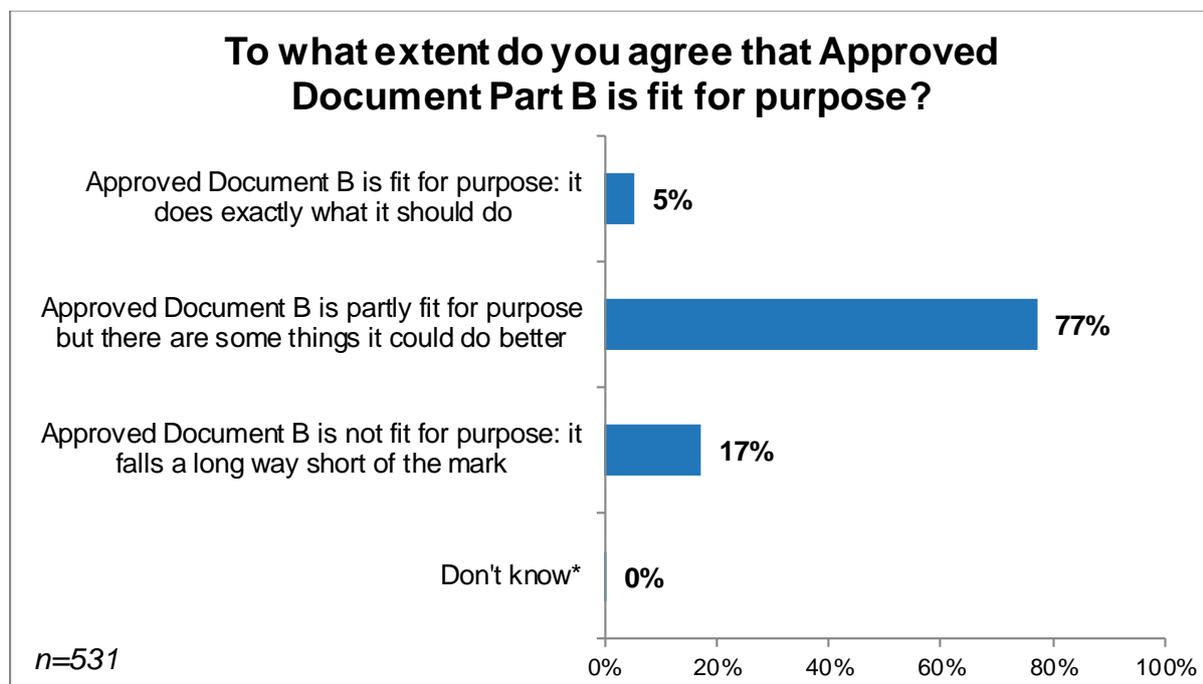
Figure 6 - Approved Documents: frequency of use

‘Enforcement professionals’ were by far the heaviest users of Approved Document B, with over half using it daily. Respondents from smaller organisations (employing 1 - 15 people)

were more likely to use Approved Document B Volume 1 frequently than those from large organisations (employing 51 or more people).

2.2 Is Approved Document B fit for purpose?

Only 5% of respondents agreed that Approved Document Part B is fully fit for purpose (Figure 7). The vast majority believed that Part B could be improved with 77% saying it is partly fit for purpose and 17% that it falls a long way short of the mark. ‘Enforcement professionals’ were more likely to say that Approved Document B is partly fit for purpose, compared with ‘design professionals’ and ‘fire safety specialists’ who were slightly more likely to say it falls a long way short of the mark.



*One person responded that they did not know. When rounded to the nearest percent, this appears as 0%.

Figure 7 - Whether or not Approved Document B is fit for purpose

Almost all respondents (96%) think that DCLG should carry out a review of Building Regulations Approved Document B (Figure 8). Almost two-thirds of respondents (63%) thought DCLG should review Part B of Schedule 1 to the Building Regulations as well as Approved Document B.

Respondents with 35 years or more in the construction industry were less likely to support a review than those with less experience. There was little difference in response to this question by organisation type.

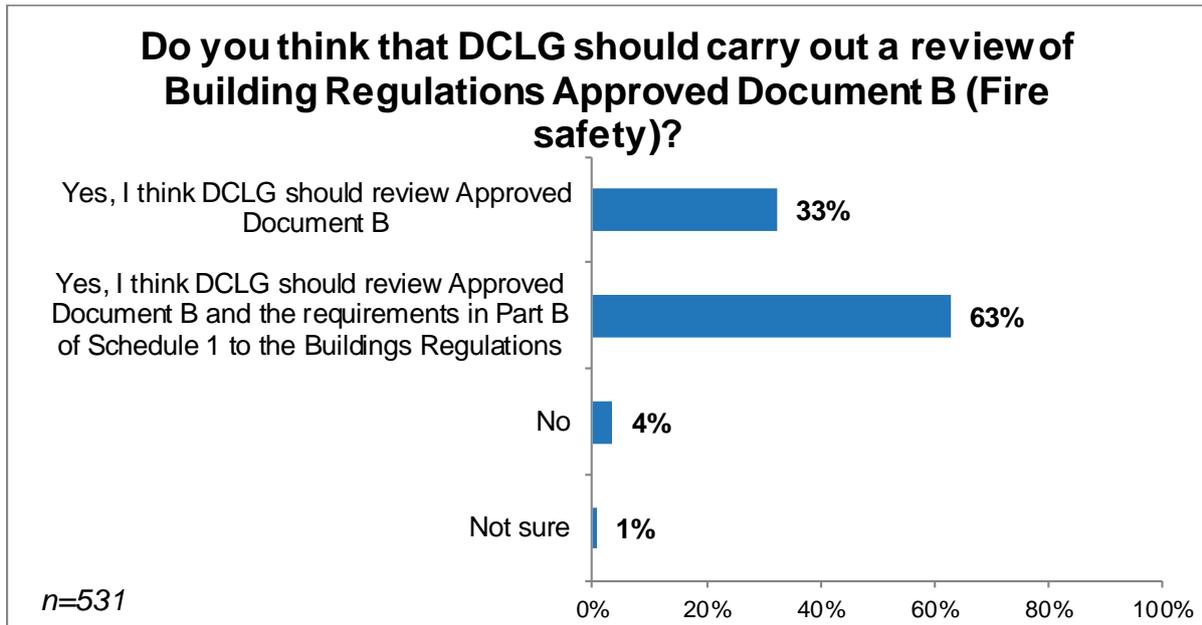


Figure 8 - Whether or not a review of Approved Document B should be carried out

The vast majority of respondents (96%) thought that Approved Document B should change (Figure 9). Almost half (49%) thought it should change ‘a lot’, while slightly fewer, 40%, thought it should ‘change a bit, but not too much’. Only 7% thought it should change completely.

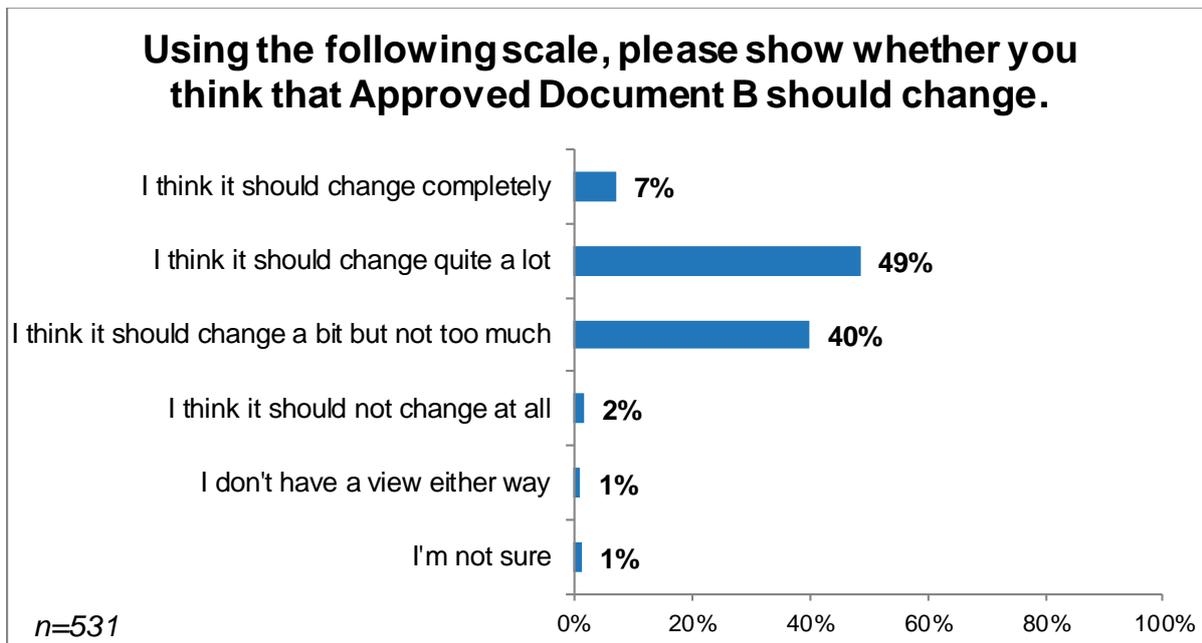


Figure 9 - Whether or not Approved Document B should change

There was little difference in response to this question by organisation type.

Most respondents (93%) thought that Approved Document B should be reviewed every five years or more often than that (Figure 10). More than half (57%) thought it should be reviewed every three years or more frequently.

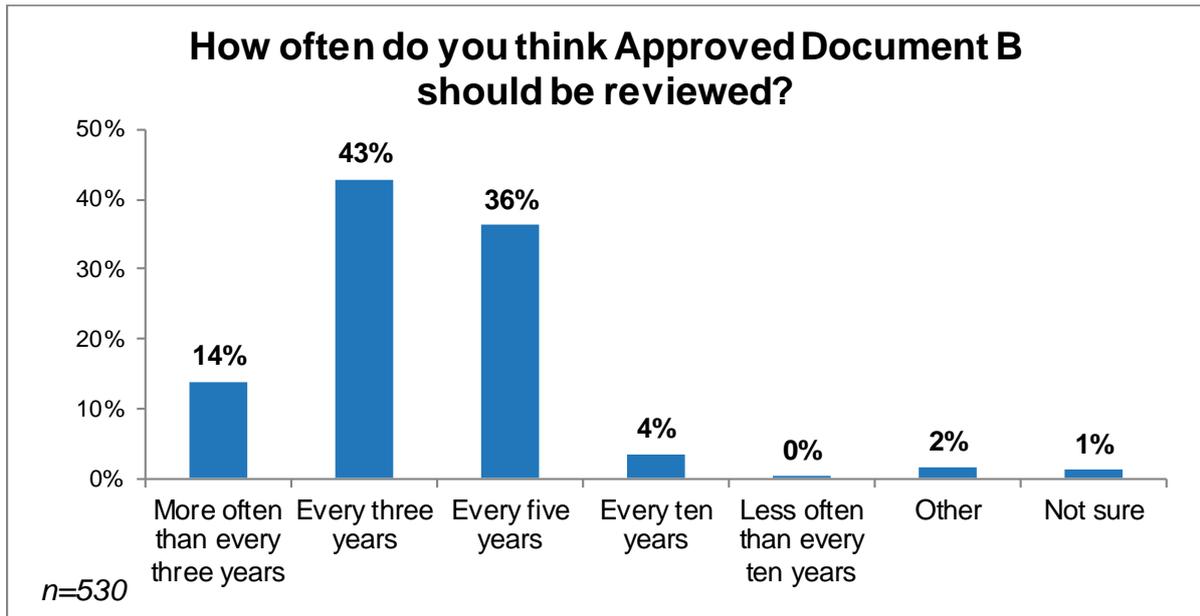


Figure 10 - How often Approved Document B should be reviewed

2.3 Compliance with the Building Regulations and who Approved Document B is aimed at

Survey respondents were most likely to say that, at the design stage, the lead designer was primarily responsible for compliance with the fire safety requirements of the Building Regulations (72%). Sixty percent also felt that specialist fire safety designers or consultants were primarily responsible. Respondents were less likely to view those inspecting and approving work - Local Authority Building Control or Approved Inspectors - as being primarily responsible at the design stage (Figure 11). Respondents were able to select more than one party as being ‘primarily responsible’.

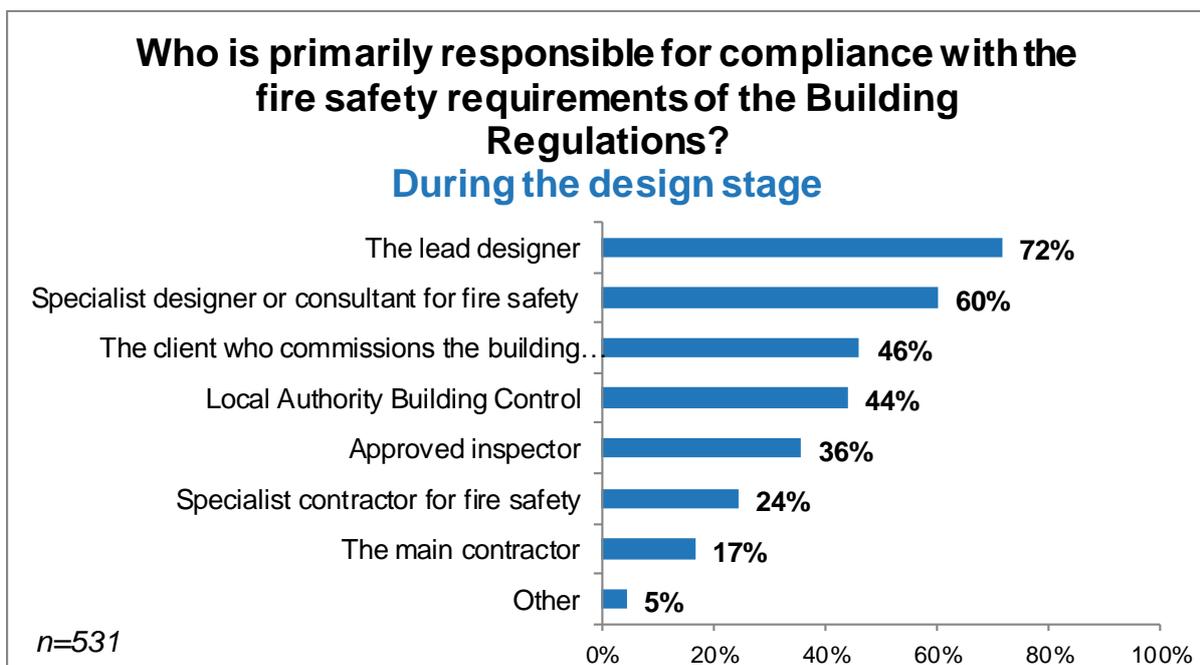


Figure 11 - Responsible for compliance: design stage

At the construction stages (Figure 12), respondents were most likely to say that the main contractor was primarily responsible for compliance (71%). At the construction stages, respondents felt Building Control and Approved Inspectors had a greater responsibility for ensuring compliance: 44% of respondents said Building Control were primarily responsible at the design stage, compared with 54% at the construction stage. In contrast, more respondents felt that the client commissioning the project was primarily responsible for compliance at the design stage (46%), compared with the construction stage (32%).

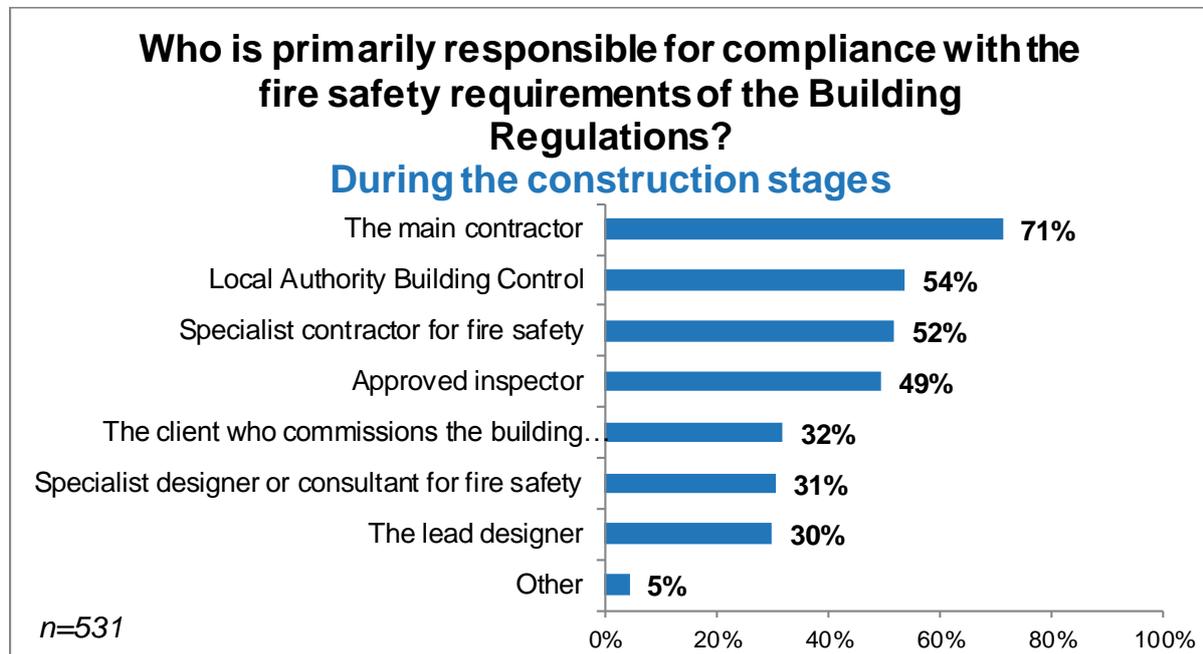


Figure 12 - Responsible for compliance: construction stages

Survey respondents tended to say that more than one person is primarily responsible for compliance at the design and construction stages.

Respondents were asked who Approved Document B is aimed at, as it is now (Figure 13). Ninety-two percent agreed that it is aimed at Local Authority Building Control and Approved Inspectors. Many respondents agreed that Approved Document B was aimed at specialist fire safety designers or consultants (84%) or designers, such as architects (81%). At least three-quarters of respondents agreed that Approved Document B is aimed at specialist fire safety subcontractors and the Fire Service.

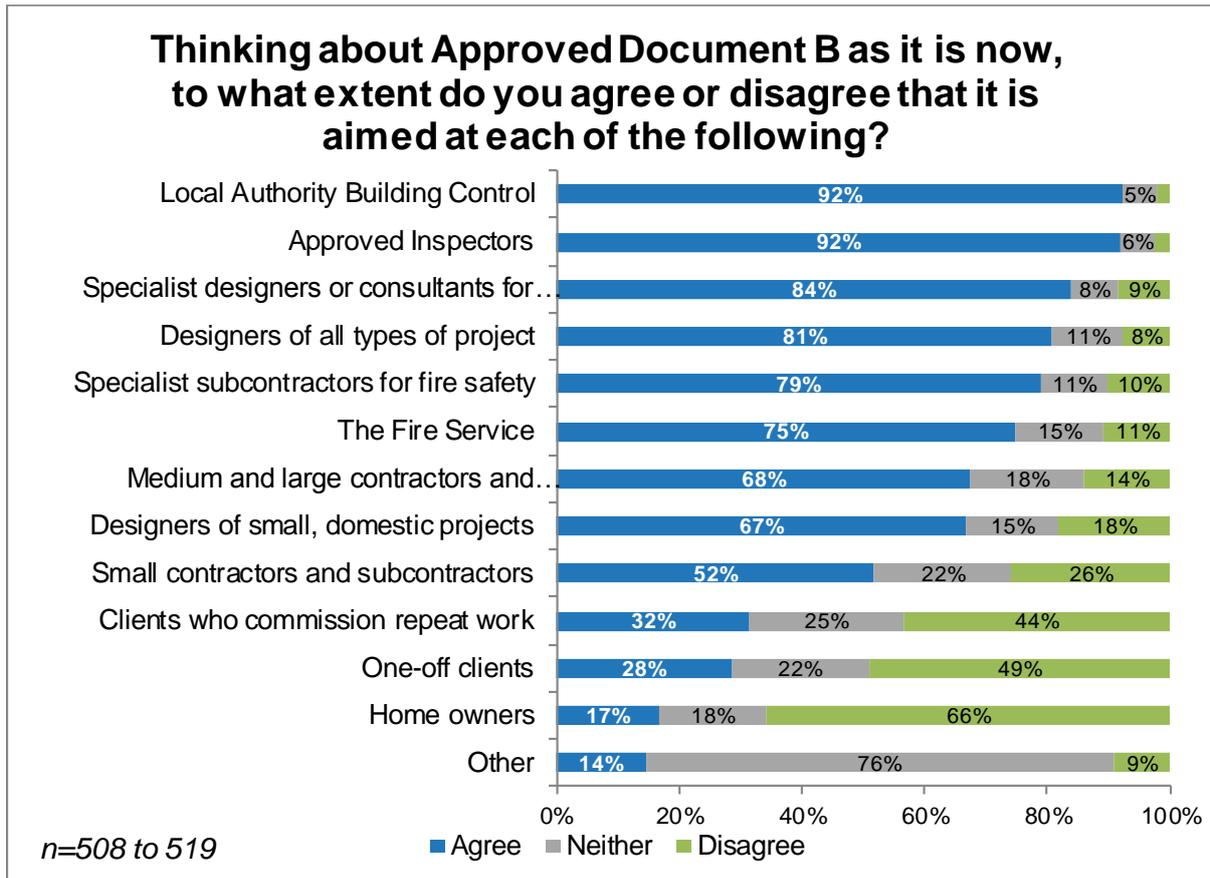


Figure 13 - Who Approved Document B is aimed at

Fewer respondents agreed that Approved Document B was aimed at general contractors, subcontractors and designers of small or domestic projects. Fewer, still, thought Approved Document B was aimed at clients; for instance only 28% of respondents agreed that Approved Document B was aimed at ‘one-off clients’.

2.4 Scope and content of Approved Document B

There were differences of opinion about the technical content of Approved Document B (Figure 14). Forty-one percent of respondents agreed that they were satisfied with Approved Document B and 41% *disagreed*. Similarly, 31% said that some technical content should be removed and 25% disagree. ‘Design professionals’ were more likely to agree that content should be removed. Forty percent thought that drawings and diagrams are clear, while 39% did not.

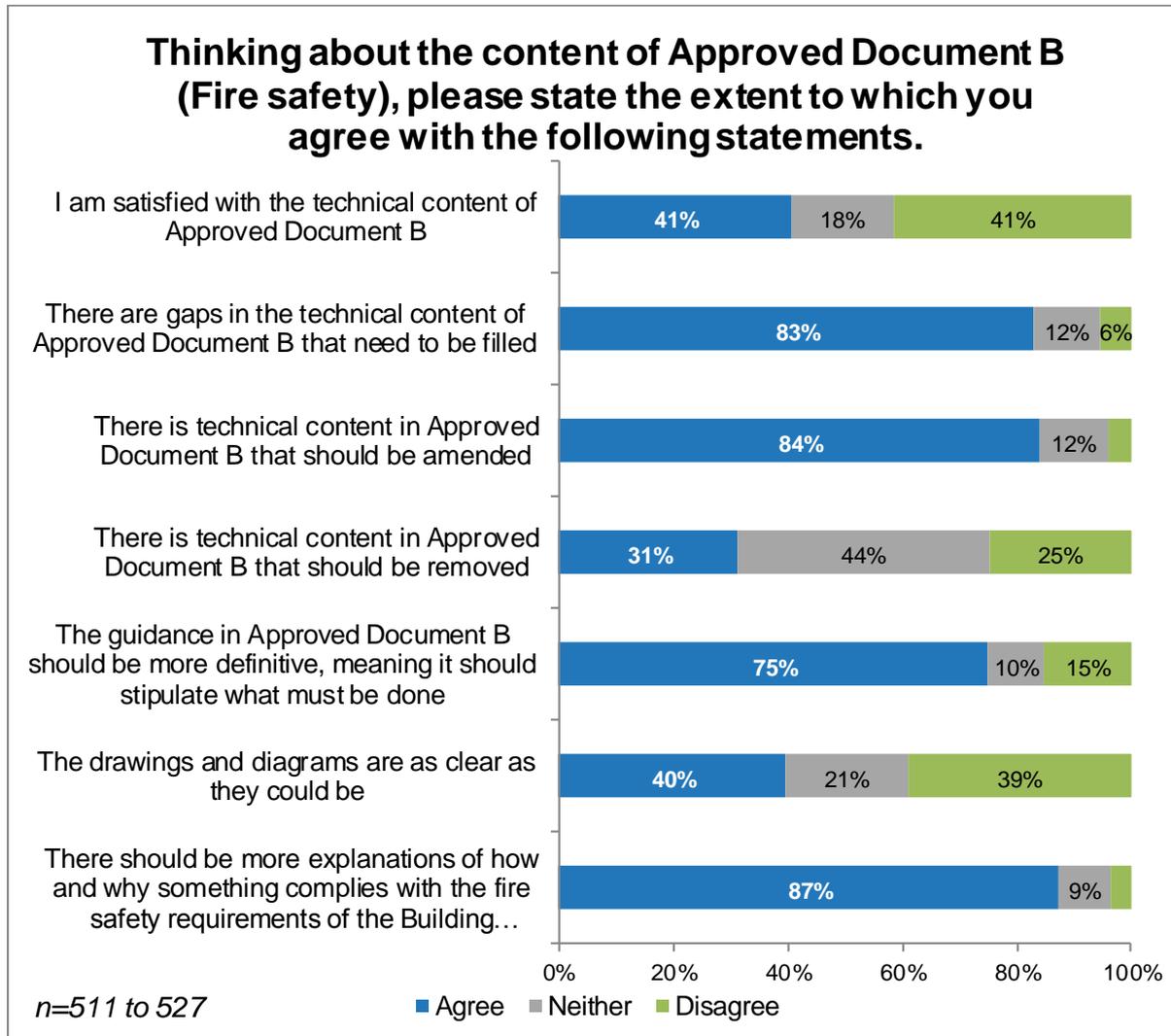


Figure 14 - Views about the technical content of Approved Document B

However, in other areas respondent opinion was clearer. The vast majority agreed that:

- There should be more explanations of how and why something complies with the fire safety requirements of the Building Regulations (87%)
- There is technical content in Approved Document B that should be amended (84%)
- There are gaps in the technical content of Approved Document B that need to be filled (83%)

Many (75%) also agree that the guidance in Approved Document B should be more definitive.

The following definition of the scope of Approved Document B was presented to respondents:

The scope of fire safety requirements of the Building Regulations, and therefore Approved Document B, are currently limited, under the Building Regulations 2010, to "the purpose of securing reasonable standards of health and safety for persons in or about buildings".

Most respondents agreed that they understood the scope of Approved Document B as defined above (Figure 15). Almost half (47%) agreed that this scope is about right and does not need to change; however almost as many, 40%, disagreed.

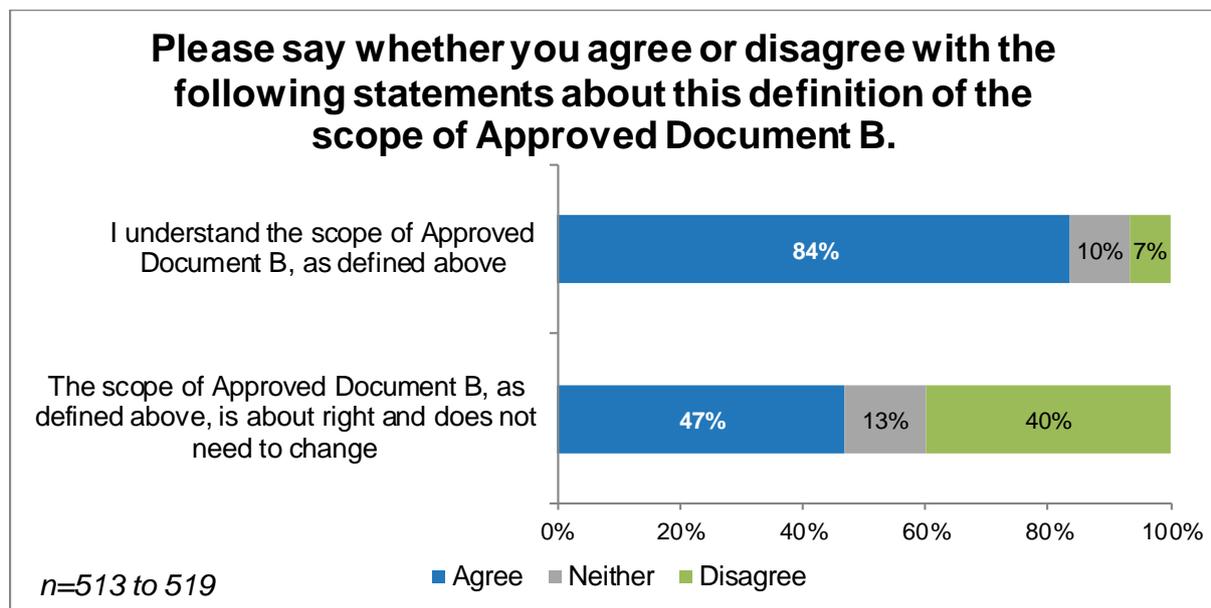


Figure 15 - Views about the scope of Approved Document B

‘Enforcement professionals’ were less likely to agree that the scope of Approved Document B should change, compared with ‘fire safety specialists’ who were most likely to support a change of scope. Respondents using Approved Document B most often, were also more likely to agree that the scope was about right.

The questionnaire presented respondents with the following text:

*Approved Document B sets out how to satisfy the Regulatory requirement of ensuring health and safety. It could also include guidance that relates to **property protection** in the event of a fire, **firefighter safety** and **sustainability**.¹*

When asked whether they would like to see Approved Document B include such guidance, 89% agreed (whether ‘strongly agree’ or ‘tend to agree’) that they would like to see this for firefighter safety (Figure 16). Over half, 58%, *strongly* agreed that they would like to see guidance for this included in Approved Document B. Almost two-thirds (66%) of respondents agreed that they would like to see guidance relating to property protection included, one third strongly. Fewer respondents wanted to see guidance relating to sustainability in Approved Document B, although still more than half (51%) did.

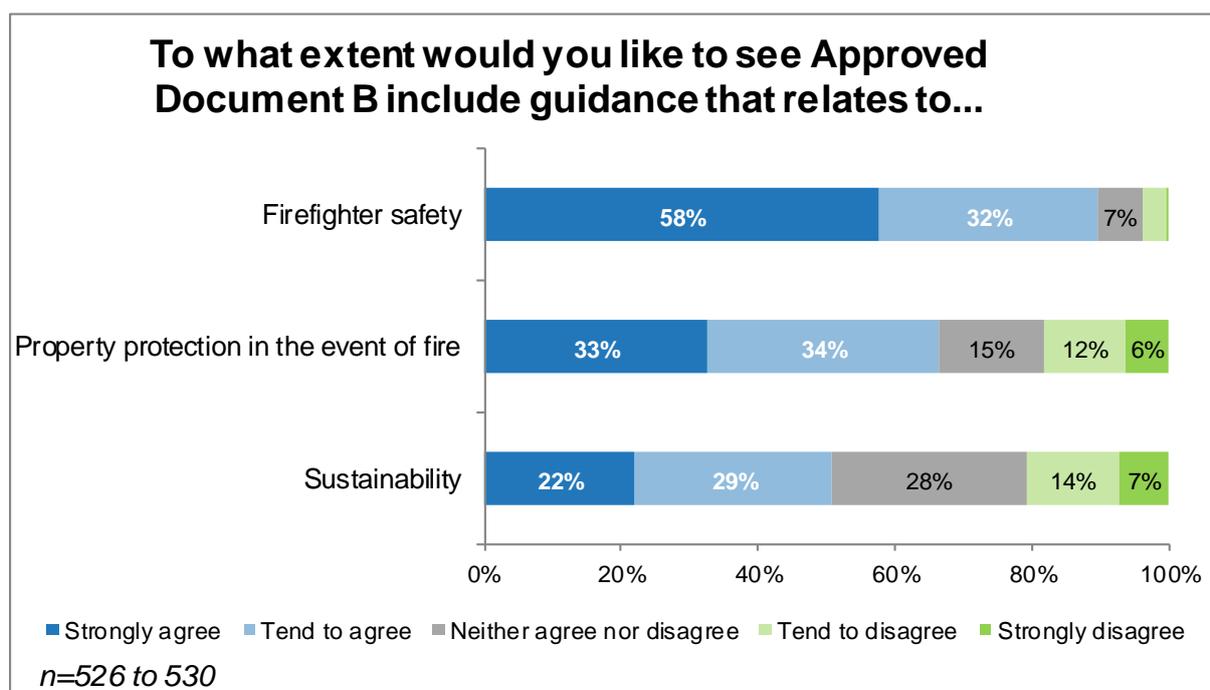


Figure 16 - Scope of guidance of Approved Document B

‘Fire safety specialists’ were more likely than other groups to agree that Approved Document B should include guidance that relates to property protection. ‘Enforcement professionals’ were less likely to support the inclusion of guidance on property protection. Respondents using Approved Document B less often were more likely to support the inclusion of guidance relating to property protection.

Survey respondents were given the opportunity to say how the guidance in Approved Document B should change. As there was strong support for including guidance that relates to firefighter safety, there were many comments about this. Some examples are given below and include measures to prevent fire spread, communication points for firefighters, a dedicated section on fire safety in Approved Document B, the implications for firefighter

¹ By sustainability we mean meeting the needs of the present without compromising the ability of future generations to meet their own needs. These needs could be economic, environmental or social.

safety in the choice of construction materials, and better consultation with the Fire and Rescue Service.

“The documents are vague in this respect and only cover access into the building not how to protect firefighters. In larger buildings better guidance on fire fighting routes etc would be useful.” Architect

“Communication points within buildings to allow firefighters to communicate within various parts of the building.” Building Control

“Firefighter safety should be made into an individual section.” Fire and Rescue Service

“The review should be informative as to how fire is likely to affect internal construction, for example sandwich panels, which should inform of the risk of rapid fire spread and breakdown of internal construction which is likely to affect firefighter safety as well as escape routes for occupiers.” Fire safety consultant

“Direct consultation with the fire service when revising the Approved Document, and critical analysis of empirical evidence of existing safety risks encountered by firefighters.” Building Control Officers

“Regulate toxicity and smoke production from products during a fire. The performance of cladding during a fire needs to be examined to prevent burning debris falling on firefighters.” Manufacturer

2.5 Structure and consistency with other legislation

Three-quarters of respondents thought that the structure and order of Approved Document B should, in some way, reflect the ‘design-build-handover’ process that building projects follow (Figure 17). Thirty-six percent were in favour of some linkage to this workflow without restructuring Approved Document B; whereas 38% thought the structure should change.

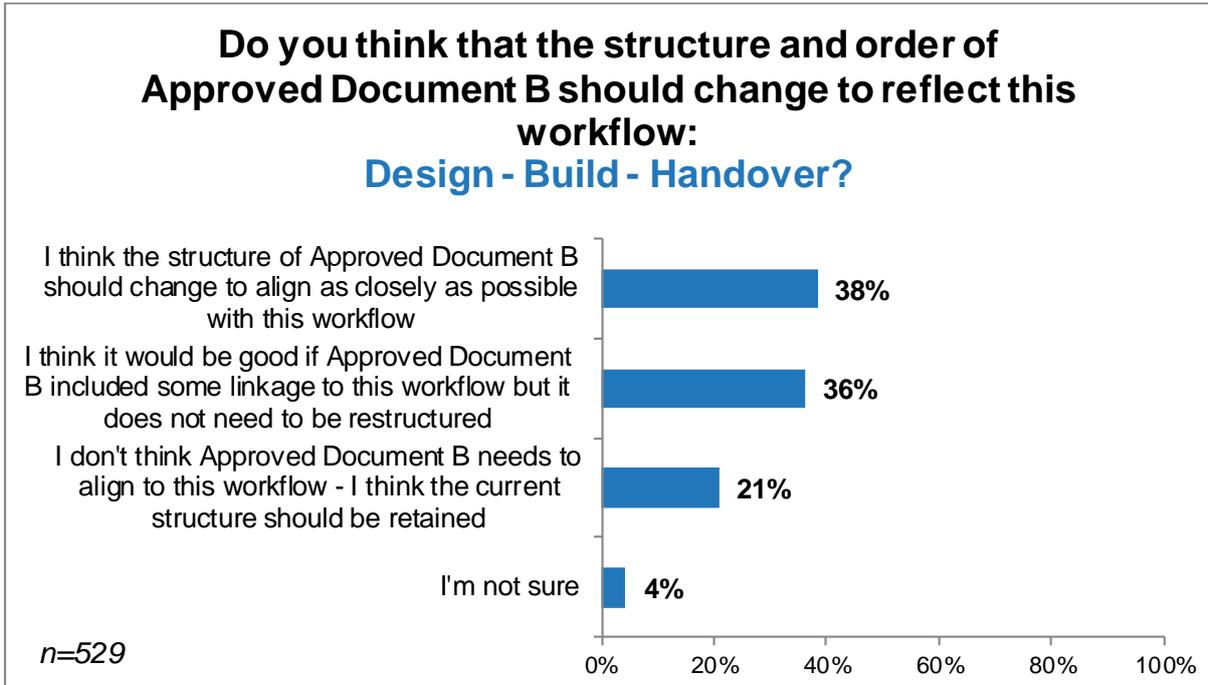


Figure 17 - Whether or not Approved Document B should reflect the design-build-handover workflow

Those who thought Approved Document B should reflect the design-build-handover workflow in some way were asked whether it would be useful to have a tracking schedule or flowchart showing the progressive steps to be taken, by whom, and when at the different project stages. Eighty-seven percent agreed that it would be useful (Figure 18).

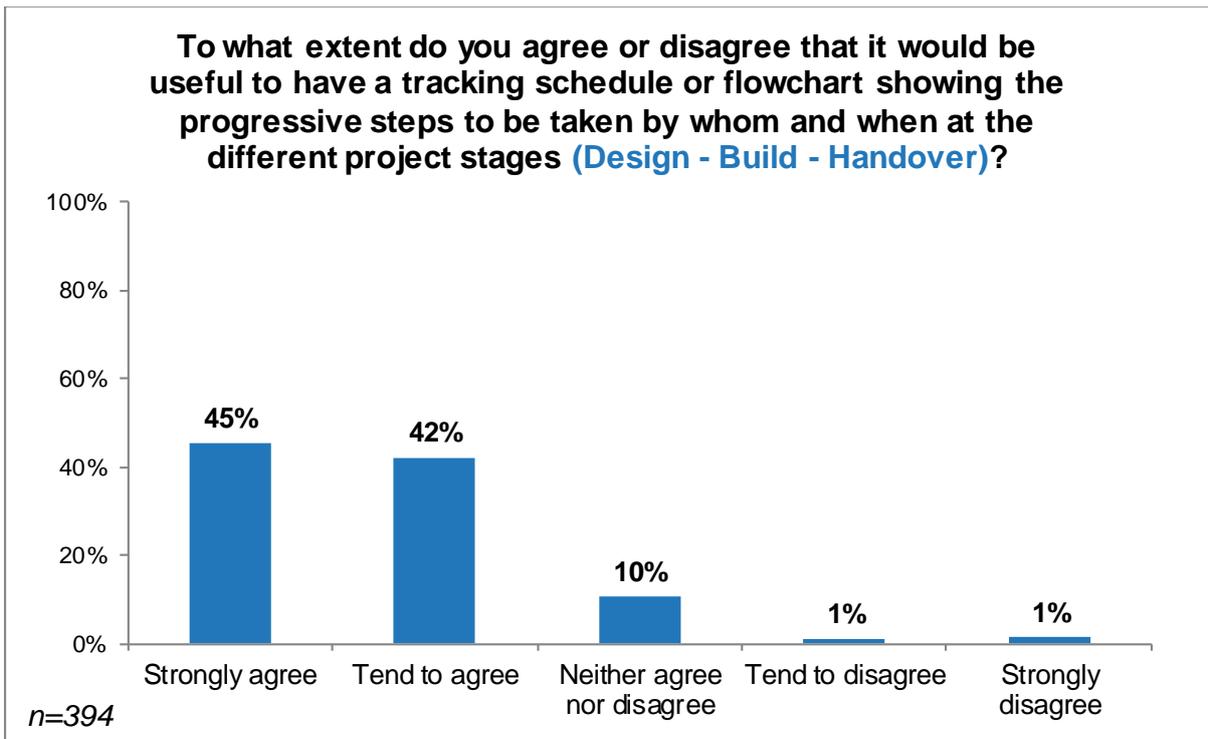


Figure 18 - Usefulness of a tracking schedule or flow chart (among those who think the structure and order of Approved Document B should change to reflect the 'design - build - handover' workflow)

Respondents were presented with the following text:

AD B is split into Volume 1 - Dwellinghouses and Volume 2 - Buildings other than dwellinghouses. In Appendix D, it provides use classifications in the form of Purpose Groups, which are cross referenced throughout Approved Document B. They help to provide guidance specific to the use of the building, e.g. residential, office, industrial etc.

Just over half of respondents (52%) were satisfied with how Approved Document B provides guidance for particular building types of use (Figure 19). Satisfaction on this point was higher among those using Approved Document B most often.

Almost one-third (32%) were not satisfied. Over three-quarters (76%) agreed that it should be easier to find all of the guidance for a particular building type of use. When asked whether Approved Document B should be published in more volumes, each for a specific purpose group classification, opinion was divided. Forty-five percent agreed, while 39% disagreed. Few (16%) expressed a neutral view.

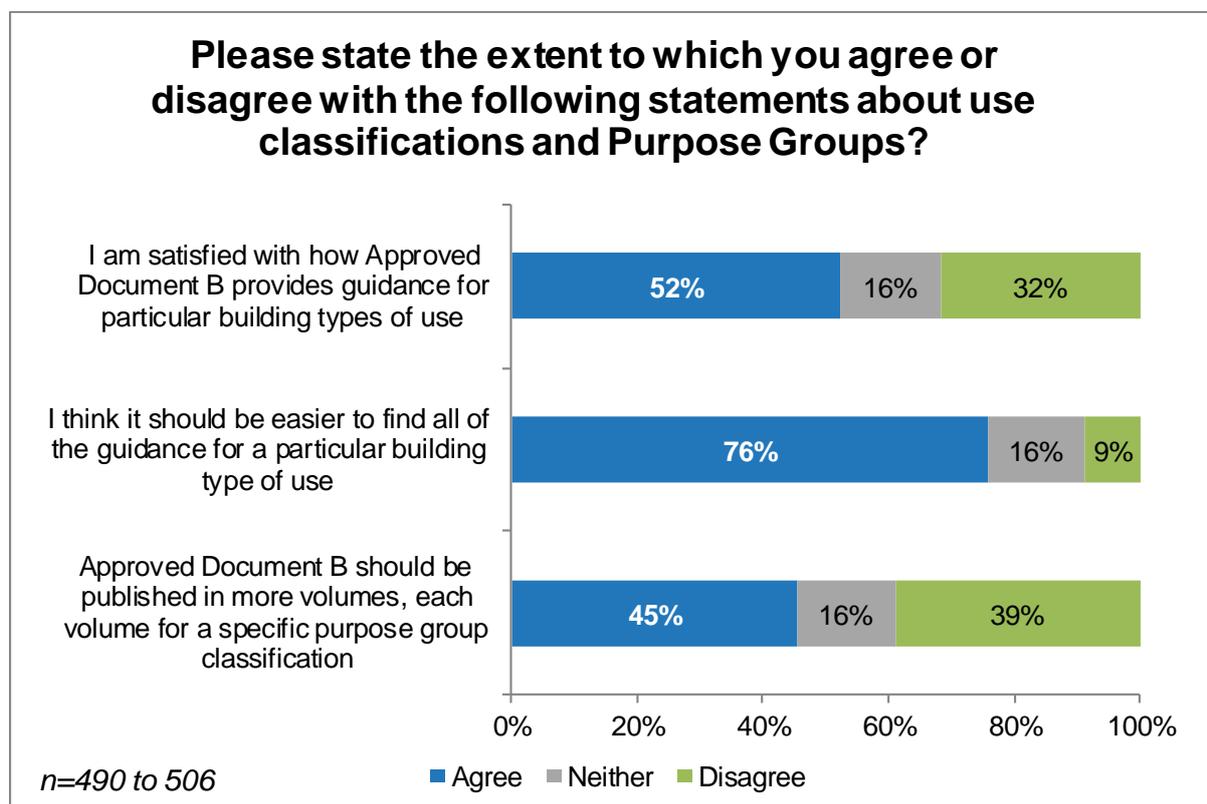


Figure 19 - Use classifications and Purpose Groups

Respondents were also asked whether there are any inconsistencies between Approved Document B and other statutory guidance, or legislation; for instance, other Building Regulations or Approved Documents, or the Equalities Act. Only 3% thought there were no inconsistencies at all. Sixty-five percent said there were some inconsistencies, including 10% who said there were a lot (Figure 20).

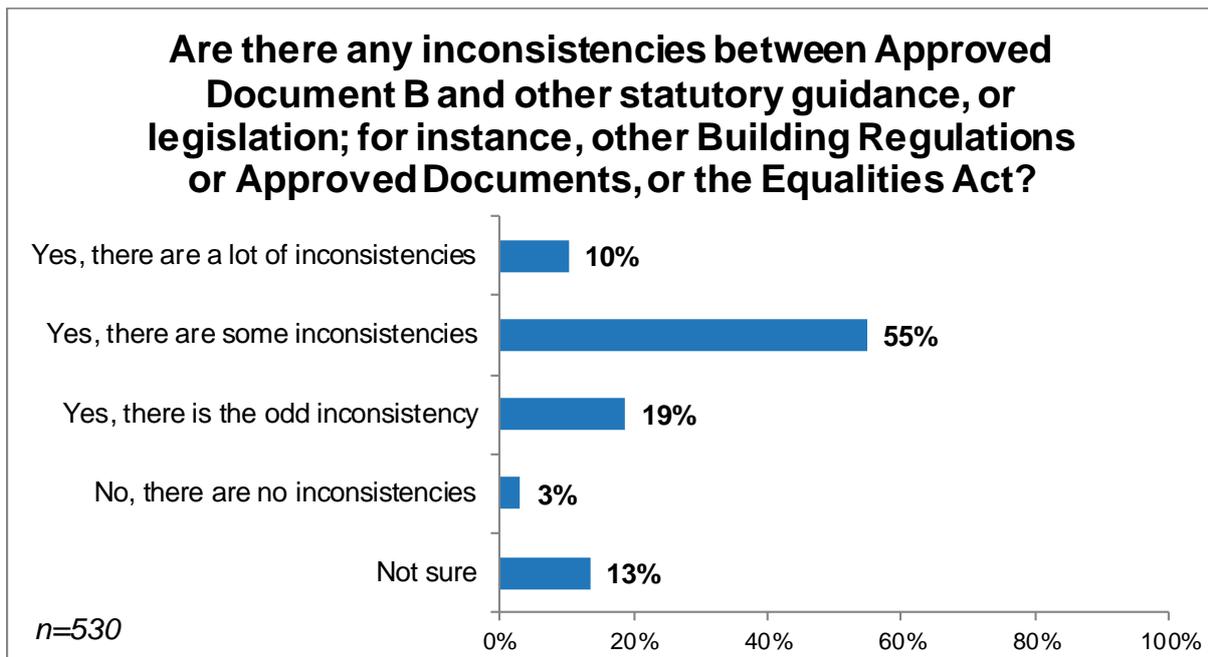


Figure 20 - Inconsistencies between Approved Document B and other guidance or legislation

2.6 Establishing compliance and enforcement

Currently, Local Authority Building Control and Approved Inspectors inspect building works for compliance with the fire safety requirements of the Building Regulations.

After being presented with this statement, respondents were asked the extent to which they thought there should be more direction on the use of third party certification that helps to ensure that products and their installation meet fire safety performance requirements (Figure 21). Sixty-five percent thought there should be more direction on the use of third party certification; 25% did not.



Figure 21 - Direction on the use of third party certification

Respondents were then presented with the following statement:

For some other parts of the regulations competent persons are able to self-certify compliance, such as electricians for Part P.

When asked whether they agreed that competent persons should be able to self-certify their work, almost three-quarters disagreed that they should for building designs or fire strategies as complying with the fire safety requirements of the Building Regulations (Figure 22). In respect to installation of building works, disagreement was not as marked but 63% of respondents still disagreed that competent persons should be able to self-certify in respect to fire safety. Almost two thirds of respondents (66%) thought that only Local Authority Building Control and Approved Inspectors should be able to certify work to comply with the fire safety requirements of the Building Regulations.

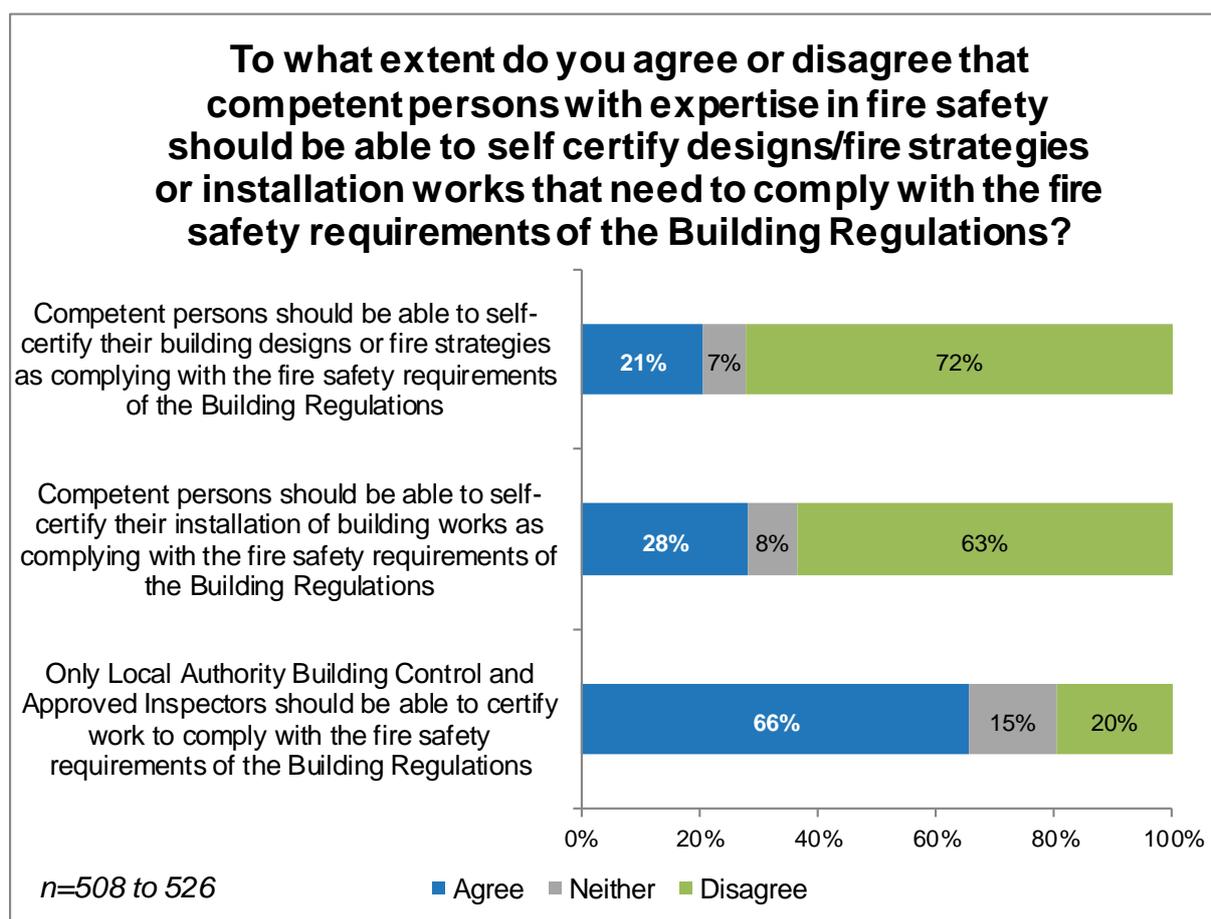


Figure 22 - Self-certification

2.7 Future requirements

Very few respondents (12%) agreed that Approved Document B will be fit for purpose in five years' time (Figure 23). Survey respondents think that Approved Document B needs to:

- Provide greater practical guidance for mixed use buildings (90%)
- Provide practical guidance to consider the changing demographic of building occupants (81%)
- Consider off-site manufacture of building components (73%)

In addition, over half of respondents (53%) think that guidance in Approved Document B will need to link to Building Information Models.

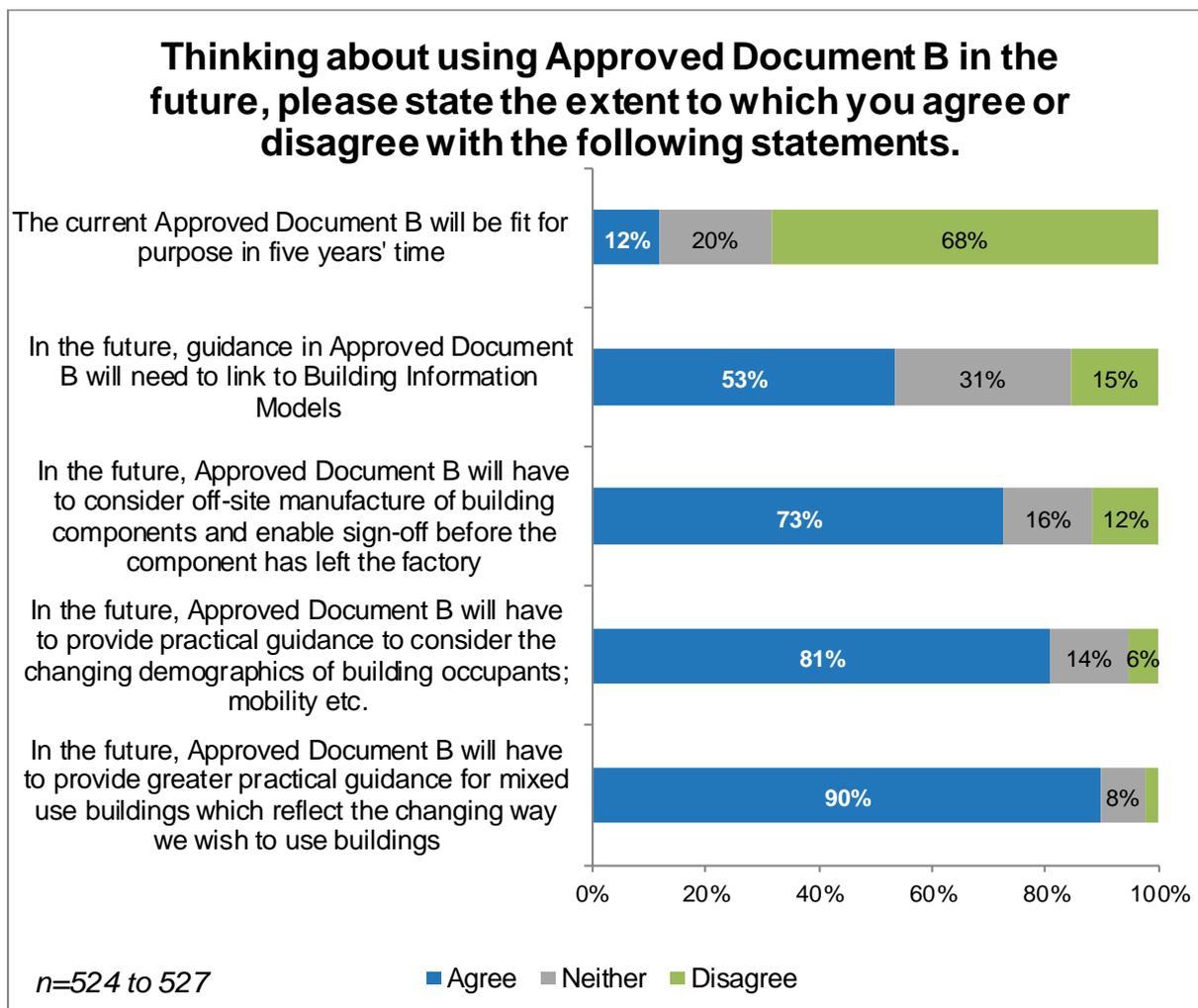


Figure 23 - Future of Approved Document B

2.8 Respondents' technical suggestions

Many survey respondents provided details of the changes they would like to see to Approved Document B. The questionnaire was worded to encourage suggestions about technical content; however some respondents chose to mention other aspects of Approved Document B. NBS Research has summarised their comments into the following themes, presented in order of those mentioned most at the top:

1. Technical content
 - a. Content that is incorrect and should be corrected
 - b. Content that needs to be added, such as relating to the application of materials or products
 - c. Content relevant to building type
 - d. Making it clearer content that is guidance vs. that which is mandatory
2. Improving the layout of
 - a. Text, including using plain English
 - b. Diagrams
 - c. Cross referencing, reducing repetition
3. Removing ambiguity by making
 - a. Less open to interpretation
 - b. Reducing the number of methods of compliance
4. Bringing the content up to date

Some example comments that reflect these themes are given below.

“Sprinkler systems should be made mandatory for all residential, commercial and mixed use buildings above 3 stories. They save lives. Many countries have already implemented this.” Architects

“Current regs are a wall of text and diagrams and tables not usually on the same page as where they’re referenced. The graphical change on the new Part K was a big improvement and cues could be taken from that.” Architects

“It is frustrating to find guidance relating to the same issue in different sections and it is easy to think your solution is compliant only to find many pages later that it isn't.” Building Control

“The whole Part B document would benefit from an online copy with an interactive compliance box with each “significant fire issue” having a sign-off statement.” Architects

“The fact there [are] modern methods of systems should be addressed with some guidance based on historical data - fire engines reversing no more than 20m etc. (based on horse and cart) - can these methods be addressed to modern living.” Building Control

“There should be clear examples of typical buildings/uses, showing fire safety measures required in each.” Building Control

“Page 38, Diagram 16 [is] very poor, not in colour, very poor detail - hardly any detail whatsoever!” Fire and Rescue Service

“Consideration should be given to changing the phrase 'External surfaces' to 'Products used for External surfaces' to align with the terminology used for insulation. Experience has now shown the potential dangers of relying upon a low melting 'surface' such as aluminium to prevent fire attack on a highly combustible core. This is a concern that many involved with the fire sciences had already identified.” Manufacturer

“Remove the use of “limited combustibility” and just say “Non Combustible.” Building Control

“... a better flow of the information and guidance without having to jump from one end to another and back again, structured possibly along lines of BS9999/9991... which in the end will lead you to the correct measures for type and use of a building.” Fire and Rescue Service

“It is the most complicated and difficult to use and understand of all the Approved Documents.” Building Control

3 Summary of findings

This survey represents the views of over 500 professionals working in the construction and fire safety sector. Most are frequent users of Building Regulations Approved Document B and many have years of experience working in the construction industry.

These professionals do not think that Approved Document B is fully fit for purpose; 96% think it should be reviewed and 96% want it to change. As well as wanting a review of Approved Document B, almost two-thirds think DCLG should review Part B of Schedule 1 to the Building Regulations.

This survey suggests there is strong support for:

- Including more explanations of how and why something complies with the fire safety requirements of the Building Regulations
- Amending technical content in Approved Document B and filling gaps in that technical content
- Including guidance for firefighter safety (89% support this)
- Making guidance in Approved Document B more definitive
- Approved Document B reflecting the ‘design-build-handover’ process
- Including guidance for mixed use buildings, to consider the changing demographic of building occupants and consider off-site manufacture of building components

Many respondents made suggestions for improving Approved Document B. These most commonly related to the updating, correcting or adding of technical content. Many also related to making the layout clearer and to removing ambiguity. Many respondents provided specific examples of changes they wanted to see, including page numbers and paragraph references.

Many respondents think it should be easier to find all the guidance in Approved Document B for a particular building type of use.

There is little support for self-certification - almost two thirds of respondents think that only Local Authority Building Control and Approved Inspectors should be able to certify work to comply with the fire safety requirements of the Building Regulations.

Some of these desired changes are primarily content based; however, some have implications for the structure of Approved Document B and the format in which it is available.

What is clear, though, is that the majority of those who responded to the survey feel Approved Document B needs to change now, and there will need to be a future review cycle that reflects the rapidly changing construction industry.

“You should not need to have been in Building Control for years to be able to interpret it.” Building Control