

KINGSPAN INSULATION LIMITED

CLOSING ORAL STATEMENT, PHASE 2, MODULE 1 AND 2 ("AS SAID" VERSION)

The Grenfell Tower fire was a tragedy that should never have happened and Kingspan Insulation welcomes and supports the vitally important work of this Inquiry in its efforts to determine what went wrong and why.

In Module 1 of Phase 2 the Inquiry has been considering, amongst other things, the numerous failings which resulted in the refurbishment of Grenfell Tower being non-compliant with the relevant Building Regulations.

Kingspan Insulation:

- Had no direct involvement in the refurbishment of Grenfell Tower.
- It played no role in the design or installation of the cladding system;
- It provided no advice or technical guidance to those responsible for the design of the refurbishment or its installation;
- It had no contractual relationship with the Council, or the TMO, or any of the designers or any of the contractors engaged on the refurbishment;
- It did not provide any products directly to those involved in the refurbishment;
- It was not informed that its K15 phenolic insulation product was being used on the Tower and
- It was not aware that K15 had been used on the Tower until after the fire.

Those responsible for the design of the Refurbishment had specified that Celotex's PIR insulation would be installed behind the cladding and almost all of the rainscreen insulation purchased for the Tower – approximately 95% of it - was Celotex PIR. However, since the fire it has become clear that a limited amount of K15 phenolic insulation was used as a substitute when supplies of the Celotex PIR could not be obtained for a short period. In total only about 5% of the rainscreen insulation purchased for use on Grenfell Tower was K15.

Given that Kingspan Insulation had no involvement in any aspect of the design or refurbishment of Grenfell Tower, and no witnesses connected to the company were called to give evidence in Module 1, my submissions on Module 1 will be brief.

Much of the evidence heard in modules 1 and 2 has focused on aspects of the rainscreen cladding and the façade insulation used on Grenfell Tower, and so my submissions will also focus on those issues. However, it is important to keep in mind at all times that the tragedy was a result of multiple failings on the part of many different entities and individuals that went far beyond issues relating to the cladding system. Such failings included, for example, failures in respect of the windows systems, fire doors and their automatic closers, the gas supply cut off and the smoke extraction system, as well as in relation to the response to the fire on the night. The reasons for the tragedy cannot be properly understood unless the importance of those numerous wider issues are fully recognised.

Focusing on the cladding system itself, the starting point is the building regulations. At the time of the refurbishment of the Tower the collective guidance in Approved Document B and Technical Guidance Note 18 required any cladding system for the Tower to be assessed under one of four available routes to compliance.

As Kingspan Insulation noted in its closing submissions in Phase 1, none of these routes was satisfied in respect of the Grenfell Tower refurbishment.

Kingspan Insulation therefore agrees with the conclusion reached at paragraph 26.4 of the Phase 1 Report, namely that the design of the refurbishment was not compliant with Building Regulations. The system should therefore not have been specified or installed. Further, it should not have been approved by Building Control

When it comes to considering how and why a non compliant cladding system was specified and installed, we would invite you to have regard to the following four points in particular.

First and foremost, we invite you to consider the **dominance of the role** played by the PE-cored ACM cladding in the Grenfell Tower fire. As set out at paragraph 2.13 of the Phase 1 report, the evidence has established that "*the **principal reason** why the flames spread so rapidly up, down and around the building was the presence of the [PE-cored ACM cladding], which acted as a*

source of fuel." Put simply, the use of Arconic's Reynobond PE ACM cladding on Grenfell Tower rendered the tower unsafe following the refurbishment works.

It is now clear that prior to the Grenfell Tower refurbishment, Arconic knew that the cassette version of its PE-cored ACM cladding only achieved **Euroclass E** when tested. It therefore knew, or should have known, that its claim of a Euroclass B classification was incorrect – certainly in respect of the cassette version that was subsequently used on Grenfell Tower. It knew, or should have known, that the product was unsafe and not suitable for use on tall residential buildings.

As far as we are aware, no system incorporating PE-cored ACM cladding of the type used on Grenfell Tower has ever successfully passed a full scale fire test under BS 8414 in combination with any form of insulation.

After the Grenfell Tower fire, the Department for Communities and Local Government commissioned two BS 8414 tests on PE-cored ACM cladding systems. One system incorporated PIR insulation. The other incorporated synthetic mineral fibre insulation classified as non-combustible. Both systems failed the test in under 8 minutes and therefore failed to meet the criteria set by BR 135.

The independent Expert Panel concluded that: *"ACM ... with unmodified polyethylene filler (category 3) presents a significant fire hazard on residential buildings at any height with any form of insulation"*.

This is a vitally important issue. It is clear from all of the available evidence that whilst the building regulations did not permit either PIR or phenolic façade insulation to be used with the Arconic PE-cored ACM cladding, the Arconic cladding would have been unsafe whether it had been combined with combustible or non combustible insulation – as demonstrated by the DCLG testing.

Furthermore, the extensive independent and peer reviewed testing and the modelling carried out and published by **Efectis** has shown that there would have been no material difference in the nature and speed of the spread of the fire at Grenfell Tower, had the PE-cored ACM cladding been combined with non combustible synthetic mineral fibre insulation, instead of PIR. Full details of the Efectis testing and modelling are provided at footnote 11 of our written closing submissions.

In addition, the validity of the expert panel's conclusion that PE-cored ACM cladding presents *a significant fire hazard ... with any form of insulation*" is also clear from the evidence relating to other serious fires involving this type of cladding. Such fires have occurred in buildings using synthetic mineral fibre insulation directly behind the PE-cored ACM, such as the Torre Ambar fire in Madrid on 29 August 2020 and the fire at The Torch in Dubai in 2015, or even when there was no facade insulation at all, such as the Address in Dubai in 2015. The common factor, again and again, has been the PE-cored ACM cladding. Full details of the fire in Milan just two weeks ago, on 29 August, are not yet available, but the indications are that this was yet another fire involving PE-cored ACM.

The second major failing was in respect of design: Those at Studio E lacked experience of high rise cladding systems. This was coupled with widespread ignorance of the risks inherent in PE-cored ACM cladding amongst those involved in the project. Overall, there was a lack understanding and appreciation in relation to the question of safety when it came to the design of the refurbishment, as demonstrated, for example, in respect of the positioning of cavity barriers and detailing around window reveals.

In this context it is important to note that even if the Arconic cassette system had genuinely been Euroclass B, it would still have been impermissible to combine such cladding with PIR or phenolic insulation under the "Linear Route to compliance". Thus, the design of the cladding system, on any view, was not compliant with the regulations.

The third major failing was in respect of Building Control. Building Control should have acted as an external and independent safeguard on the refurbishment project to ensure that the specified cladding system was compliant with the Building Regulations. It failed in this critical role.

The Inquiry's appointed Building Control expert, Ms Menzies, confirmed in her report that she had not seen any evidence of communications "*between any party and Building Control that refers to the compliance (or non-compliance) of the cladding system*" nor any evidence that Building Control requested details of the cladding system's ability to resist fire spread; she described this as a "*fundamental failing*".

Ultimately, those responsible for the design, construction and approval of the Grenfell Tower refurbishment bear responsibility for the fact that the refurbishment failed to comply with the Building Regulations and was unsafe.

Fourthly, however, Kingspan Insulation, is firmly of the view that the building regulations themselves were flawed – and remain flawed to this day – because the Linear Route to compliance permits systems to be built based on small scale testing of individual components without requiring the safety of the system as a whole to be proved in a full scale fire test. Had a full scale fire test been required in respect of the Grenfell Tower cladding system then it is clear from the DCLG tests that it would have failed – whatever insulation was used.

Mr Chairman I now turn to **Module 2**. My submissions on Module 2 fall into 3 parts. First, **introductory points** in respect of certain issues which are relevant to the Module 2 evidence relating to Kingspan Insulation. Second, I shall consider the evidence concerning testing, certification and classification of K15. Third, I shall respond to some of the other allegations which have been advanced against Kingspan Insulation which do not directly relate to K15 itself.

The first point I wish to address at the outset concerns the safety of K15 insulation.

On numerous occasions during this Inquiry it has been asserted that K15 phenolic insulation is somehow unsafe for use in rainscreen cladding. It has also been asserted that the company knew that it was unsafe.

These allegations are demonstrably untrue. They are contrary to the evidence.

In total, 14 different cladding systems incorporating current K15 (the type used on the Tower) have successfully passed full scale BS 8414 fire tests. Each of those tests is listed at footnote 5 of our written closing submissions. Those tests have involved a range of different cladding systems, including ACM systems with an A2 rating. There have also been other successful tests of systems incorporating K15 conducted by third parties with which Kingspan Insulation has had no involvement.

Kingspan Insulation is not aware of any other type of rainscreen insulation that has been used in so many different cladding systems which have passed full scale BS 8414 fire tests.

The only realistic way to test the cladding system is via full scale fire testing of the whole system. This was the conclusion referred to by Dr Lane in her presentation to the Inquiry on Day 68 in November last year, referencing Dr Raymond Connolly in his 1994 report and it remains true today.

At the time of the refurbishment of Grenfell Tower, Approved document B expressly permitted cladding systems that successfully passed a BS8414 test on high rise residential buildings. Thus such systems were recognised to be safe systems. The MHCLG guidance for Building Owners of *Multi-Storey Multi-Occupied Residential Buildings* dated January 2020 also explicitly allows the retention of correctly installed and maintained rainscreen cladding systems which have passed BS 8414. Kingspan Insulation relies on each of its 14 successful BS8414 tests to demonstrate why it is confident – and right to be confident - that K15 can safely be used and retained in appropriate cladding systems

The **second** point concerns the role played by insulation in a rainscreen cladding system.

No one doubts that residential buildings should be insulated. No one doubts that rainscreen cladding systems should contain insulation. Indeed, one of the primary objectives of the Grenfell Tower refurbishment project was to improve the insulation and thermal performance of the building.

But *any* rainscreen insulation, including non-combustible insulation, will play *some* role in a cladding fire, not least because its insulating properties act to retain heat from combustion of the cladding system.

Therefore, the relevant question in so far as insulation is concerned, is not what would have happened if there had been *no* rainscreen insulation at Grenfell Tower, but whether the nature or speed of the spread of the fire would have been materially different had an *alternative type* of insulation been used.

On this issue, the scientific evidence is clear and unequivocal: the nature and speed of the spread of the fire would have been no different had non-combustible insulation been used instead of PIR or phenolic insulation behind the PE-cored ACM cladding.

Testing commissioned by the DCLG following the Grenfell Tower fire demonstrated that systems incorporating PE-cored ACM cladding failed BS 8414 tests whether combined with non

combustible synthetic mineral fibre or with PIR insulation; both systems failing very quickly (in under 8 minutes). In fact, the system incorporating non-combustible insulation failed marginally quicker than the system incorporating PIR.

Independent testing and modelling undertaken by Efectis demonstrates that the PE-cored ACM was so dominant in the fire spread that there would have been no material difference in the rate of fire spread on Grenfell Tower if non-combustible synthetic mineral fibre insulation had been used instead of PIR insulation.

It is understood that the Inquiry will be producing its own expert evidence on these fundamental issues in Module 7.

The **third** point to emphasise is this: whilst Kingspan Insulation has fully acknowledged and apologised for historical shortcomings in its processes and procedures, as set out in its written opening statement, many other allegations and assertions have been made against the company and its employees which are, quite simply, untrue.

As I have said, allegations attacking K15's safety have been made which totally ignore the relevant evidence: namely, that K15 has being used in more cladding systems which have passed full scale fire tests than any other type of insulation as far as we are aware. I shall deal with other similar allegations shortly.

It is part of the role of counsel to the Inquiry to put allegations to witnesses in order to elicit an answer in evidence. There is, though, an inherent risk that those observing the questioning process may mistakenly believe that an assertion put to a witness must be true, when it may not be. That risk is all the greater when the incorrect assertion is repeated time and time again either by counsel or the media as if it were an established fact.

Core Participants are therefore dependent on you, Mr Chairman and you, members of the Panel, to be extremely careful when considering the totality of the evidence, both written and oral, to ensure that the process followed does not result in an incorrect understanding of the true factual position or incorrect conclusions being drawn.

Kingspan Insulation has been criticised for certain shortcomings between 2005 and 2014. It has learned from its mistakes and has taken steps to ensure that its processes and procedures are improved. But such matters should not distract from the important goal of establishing the actual

cause of the fire, the true reasons for its tragic consequences and the need to ensure that necessary measures are taken to protect life-safety in future.

The reality is that **none of the shortcomings** on the part of Kingspan Insulation are relevant to the **unsafe** design of the Grenfell Tower refurbishment, nor were they causative of the fire, and nor were they causative of the nature or speed of the spread of the fire.

In respect of the **testing** of K15, to which I now turn, various allegations have been made to the effect that Kingspan Insulation somehow 'manipulated' BS 8414 test. Such allegations are not true. None of the BS 8414 tests of K15 have been manipulated.

More generally, the criticisms made of Kingspan Insulation in respect of testing can be categorised into **six** main themes, and I shall deal with each in turn.

The first category of allegations concerns the design of the 2005 BS8414 test. That criticism is misplaced. The BS 8414 test was introduced in 2002 and was a new type of test, being a test of a *system* rather than a particular product. The 2005 test was one of the very first BS 8414 tests undertaken.

At that time, it was reasonably believed by those involved that testing a single specific type of cladding would not be particularly helpful for fire engineering professionals. The thinking was that it would be better to test a build-up that could be taken to simulate the performance of a generic non-combustible outer cladding.

Contrary to the assertions advanced by others, there was nothing dishonest or inappropriate about Kingspan Insulation's approach to the 2005 test. It was a bona fide test of a system which had been suggested by the BRE. Both the BRE and Kingspan Insulation were trying to understand how a new testing regime was intended to be used by professionals within the industry.

Furthermore, the rationale behind the approach adopted was entirely reasonable. Indeed, in 2014 the regulatory guidance was amended so as to allow evidence from a test on one system to be used by fire engineering experts to advise on the safety of a different system via desktop studies; thus the concept of extrapolation came to be accepted as a legitimate route to compliance.

There have also been *allegations made that the 2005 test was "rigged" in some way*: Again, these allegations are simply untrue. It was a valid test conducted transparently and honestly.

Criticisms have been made of the way in which timings of the test were recorded. But those timings were recorded by BRE employees; and Kingspan Insulation was not involved in either taking or recording those timings.

In any event, the system met the BR 135 criteria regardless of any issue concerning the way in which the timings were recorded. This was made clear by the BRE in their evidence.

There has also been an attempt to allege that the 2005 test used “*unrepresentative*” fire barriers. The basis of this allegation has never been understood and has not been supported by any expert evidence. Kingspan Insulation understands that the fire barriers used were 'off the shelf' purchases that were "*on the market ... at the time*" and typical of such products.

The allegations that the 2005 test was somehow "rigged" by Kingspan Insulation is one of numerous examples of very serious allegations which have been made against the company which have no basis in fact. The 2005 test was conducted honestly and transparently by Kingspan Insulation and the BRE – and that is what the evidence shows. That fact that repeated allegations have been made to the contrary does not change that reality.

Erroneous allegations have also been made about the requirement for a BR 135 Classification Report: It was repeatedly put to witnesses, in the context of the 2005 test, that a Classification Report was somehow necessary in order to enable the company to state that the test had met the criteria set by BR 135.

The true position is that at the time of the 2005 test there was no regulatory requirement to obtain a Classification Report; it was always an option available, but the relevant data were set out in the Test Report provided by the test house and competent professionals could satisfy themselves as to whether the data met the BR 135 criteria.

Ten years after the 2005 test, however, there was a change in guidance. In June 2015 BCA Technical Guidance Note 18, for the first time, suggested that a Classification Report should be obtained. Within 3 months of this new guidance being published, Kingspan Insulation sought a Classification Report for the 2005 test.

All the relevant information relating to the 2005 test was set out in the original Test Report and so there was no difficulty in BRE issuing a Classification Report in 2015 for that 2005 test. This has also been confirmed by the BRE in their submissions and in their evidence.

Furthermore, those competent to do so can look at the 2005 Test Report and ascertain for themselves that the test met the BR 135 criteria.

Finally, in relation to the 2005 test, it was alleged during oral closing submissions yesterday, that the only successful BS 8414 test on K15 at the time of supply to Grenfell was the 2005 test. This is incorrect. In fact, when K15 was first purchased for Grenfell Tower in May 2015, a further successful BS 8414 test of K15 had taken place, and when K15 was supplied for the second time in September 2015, a further two successful BS 8414 tests of K15 had taken place. All three of these tests were in respect of current K15 – namely the type used on the Tower.

The second category of criticism concerns the fact that Kingspan Insulation continued to rely on the 2005 test after certain changes were made in respect of the way in which K15 was manufactured.

The company has fully accepted that the change in technology means that it should have re-conducted the 2005 test with K15 manufactured using the "new technology". However, its failure to do so was based on its honest belief that the change in technology would not make any material difference to the fire performance of the product in a BS 8414 test.

Dr Malcolm Rochefort, the Technical Director at the relevant time, explained (based on his extensive experience of phenolics both at ICI and at Kingspan Insulation) that both "new technology" and "old technology" K15 used fundamentally the same type of phenolic foams, and that there was no reason on a chemical level to expect any significant difference in terms of fire performance between the two technologies. He explained that, if anything, the "new technology" benefited from a less flammable blowing agent.

On 6 June 2019, Kingspan Insulation undertook a BS 8414 test of a system which was as close as possible to the system used in the 2005 test, but which incorporated current K15 instead of "old technology" K15. The system passed the test.

This 2019 replacement test demonstrates that the failure to undertake a replacement for the 2005 test earlier in time has not given rise to any fire safety risks. Any fire engineer or other expert who relied upon that original 2005 test now has the replacement test to rely upon in respect of the current K15.

The company has now put in place a rigorous audit and change management system to ensure continuing product compliance.

The **third** category of allegations relating to testing concerns **fire performance**: it has wrongly been wrongly asserted on numerous occasions that "new technology" K15 has a worse fire performance than old technology K15. There is absolutely no scientific or expert evidence to support such an assertion.

The allegation has been based, in particular, on a report by Ivor Meredith of a December 2007 BS 8414 test of a cladding system incorporating aluminium cassettes. That system failed. It was asserted by Counsel in cross examination that new technology K15 "failed spectacularly" in this December 2007 test and that the test proved that new technology K15 had a worse performance than old technology K15. Such assertions are patently incorrect.

K15 did not fail the test in 2007 – let alone fail it spectacularly as asserted. The failure of the system tested in December 2007 demonstrates that that cladding system as a whole was not capable of passing the demanding requirements of a BS 8414 test. The failure of the test says nothing about "new technology" K15 as against old technology K15. This reality is demonstrated by the fact that the December 2007 test was repeated in January 2008 using non-combustible synthetic mineral fibre insulation instead of K15 and it failed again. Yet no one considers that the failure of the 2008 system means that synthetic mineral fibre insulation is unsafe or that it is somehow less safe than "old technology" K15.

It would be perverse and wholly wrong for the Inquiry to conclude that the difference between the 2005 BS 8414 test result and the 2007 test result could somehow be attributed to the slight technological changes in respect of K15 as opposed to the gross differences in the designs of the cladding systems being tested. Yet that was the assertion repeatedly put to witnesses as if it were true, and then reported, as if it were established fact, in the media.

It is also notable that Mr Meredith, whose report described the failure of the December 2007 test was not present when the test took place. Yet his description of the test as a "raging inferno" was referenced on numerous occasions during this Inquiry as if it was a first hand witness account. It was not. He did not witness the test. Nor is there any evidence that he saw even a video recording of the test before writing his report. In contrast, Mr Baker, a BRE Certification Scheme Manager who did attend the test and witness it, described the language used in Mr Meredith's report, as

"quite flowery". He himself declined to call the failure "*spectacular*" when invited to do so by Counsel to the Inquiry.

Nor is it clear why almost no mention has been made during cross examination of the fact that the same rainscreen cladding system also failed when tested in January 2008 using non-combustible insulation, despite evidence relating to this test having been drawn to the Inquiry's attention.

The fire performance of "new technology" K15 cannot be assessed on the basis of a comment made by one person in respect of one test of a whole cladding system which he did not witness, and when he had limited experience of such tests. Conversely, the ability of current K15 to be used successfully in different cladding systems is demonstrated by the fact that at least 14 cladding systems using current K15 have passed BS 8414 tests, details of which have been submitted to the Inquiry.

The repeated assertions that new technology K15 has an inferior fire performance to old technology K15 are entirely unsupported by any scientific evidence. The Panel is enjoined to consider the basis of each and every allegation levelled against Kingspan Insulation; time and again, there is no scientific basis to support the allegations advanced.

The **fourth** area of criticism concerns two BS 8414 tests conducted in 2014. The first was of a Trespa cladding system; and the second was of a Terracotta tile cladding system. Both tests were undertaken using "non-standard" K15, which differed from current K15 in that it used a thicker unperforated foil facer and a different blowing agent. The first Trespa system failed the BS 8414 test and the second Terracotta system passed.

Whilst the R&D changes for thermal performance were considered by employees at the time to be irrelevant to issues of fire performance in a full scale BS8414 test, Kingspan Insulation has accepted that it should have made clear that those 2014 tests used non-standard K15.

The important point, however, is that new tests were carried out very shortly afterwards using current K15. BS 8414 tests of systems featuring a terracotta tile rainscreen were undertaken in April 2015 and again in January 2016 using current K15. Those systems also passed. Accordingly, if any fire engineer relied upon the successful 2014 Terracotta Test which used an R&D version of K15 then they would similarly have been able to rely upon the 2015 and 2016 tests as relevant alternative tests using current K15.

Out of an abundance of caution, Kingspan Insulation also carried out a replacement test of the unsuccessful 2014 Trespa test using current K15 in 2019 and the test achieved the same result, ie. just as it failed in 2014, so it failed again in 2019. Thus, again, if any fire engineer did have any regard to the failed 2014 test, they can now refer to the replacement test.

In summary therefore, whilst these two 2014 test results should have been marked as R&D results, there was no intention to mislead anyone and the further testing demonstrates that if any fire engineer did place any reliance on either of those tests then any such reliance will not have given rise to any fire safety issues. Any such engineer can now rely on the further testing as alternatives. Kingspan has put in place improved procedures so as to ensure that R&D testing is not relied on for current marketing products.

The fifth area of criticism concerns the withdrawal of the test reports I have been discussing. Kingspan Insulation removed the Test and Classification Reports for the 2005 test and the successful 2014 terracotta test from its website and all marketing literature in March 2019, so as to ensure that they were not relied on in any new projects. The company then also wrote to fire engineers (including the BRE) on 23 October 2020 confirming that the Test Reports for the 2005 test and the two 2014 tests were being withdrawn, but explaining that the further replacement tests could be relied upon instead of the withdrawn reports.

The company's withdrawal of these three tests was an appropriate and prudent step. It acted reasonably and responsibly in ensuring that it had conducted appropriate testing to enable all those within the industry to understand precisely why the company was confident that the withdrawal of the three tests gave rise to no risks to health or safety. The Test Reports for the replacement tests are available to anyone who wishes to rely on them in place of any of the three original tests.

Finally, in relation to testing, it has been suggested to various witnesses that Kingspan Insulation should not have claimed Class 0 in respect of K15. This criticism is not accepted. Whilst there may be room for more than one interpretation of the relevant regulations and guidance in respect of the requirements for claiming Class 0, Kingspan Insulation considers that its interpretation is a **reasonable, valid, and legitimate** interpretation of the relevant statutory guidance set out in Approved Document B.

K15's original Class 0 classification was derived from the testing of phenolic products produced by its Dutch sister company in Kesteren. The BBA accepted these test reports as appropriate evidence of K15's Class 0 classification as explained in the evidence of the BBA.

In May 2007, Kingspan Insulation tested the foil facer used on K15 to BS-476 Parts 6 and 7. It passed the test.

Approved Document B requires either: "*the product or surface material of a composite product*" to meet the relevant criteria set out in BS-476. K15 is a composite product of which the facer is the surface material and, following this valid testing, Kingspan Insulation rightly claimed that K15 was Class 0.

It has been suggested to witnesses by Counsel to the Inquiry that the company should not have relied on the wording of Approved Document B in respect of Class 0. This line of questioning was not supported by any expert evidence. Indeed, it appears to be directly contrary to the explanation of Class 0 provided by Dr Lane who explained that "*in 1985 the definition of class 0 was significantly changed*" in part because "*the requirement to consider the substrate with the surface was removed from the text in the statutory guidance document. This remained the definition to the time of the Grenfell fire*".

Thus, Kingspan Insulation's interpretations of the requirements of BS – 476 Parts 6 and 7 is consistent with Dr Lane's evidence: there was a deliberate change to the statutory guidance to permit the testing of the surface material of a composite product, as opposed to the testing of the entirety of the product. The guidance expressly permitted the testing of the foil facer of K15 and this was what was tested. Furthermore this understanding of the guidance also has to be considered in the context of Mr Pargeter's evidence that when you test a composite product like K15 the facer can "*delaminate from the product and then touch the burner element*" which affects the test.

Kingspan Insulation cannot be criticised for testing K15 in accordance with the plain reading of the text of the statutory guidance following express amendment to permit testing in this manner.

The repeated assertions to the contrary are not only unfounded, but appear to ignore the expert evidence which the Inquiry itself has adduced.

Certification – I now turn to issues which have been raised concerning the BBA and LABC certification of K15.

The BBA is responsible for the contents of its own certificates. The BBA is qualified to make judgments about the content of the certificates and/or seek expert assistance if needed and can and does amend the wording of its certificates. The BBA also regularly audits Kingspan Insulation's manufacturing processes.

The first BBA certificate relating to K15 was issued in October 2008. Five further versions were published between this date and November 2020.

As regards the content of K15's BBA certificates, John Albon of the BBA confirmed in his evidence that "*The Certificate content has evolved over time, which is the case with most BBA Certificates, to reflect external changes and updates to the standard BBA wording for a particular product type. I believe that the wording has been clarified since the issue of the Certificate, but I have no concerns as to the content of previous issues, if it is to be read by a suitably experienced and competent individual behaving ethically*".

Four of Kingspan Insulation's witnesses were asked questions about a reference to paragraph 12.7 of Approved Document B in the K15 BBA certificate dated April 2010. In the course of that questioning it was repeatedly suggested that the certificate was incorrect to reference paragraph 12.7.

In each instance, the witness' attention was drawn only to the first part of paragraph 12.7 which requires any insulation used in the external wall construction of a building over 18m to be of limited combustibility.

However, during questioning none of those four witnesses were taken to the second part of paragraph 12.7 which makes it clear that: "*the restriction does not apply to*" certain masonry cavity wall constructions. The effect of this exemption was to permit the use of K15 in such masonry cavity wall constructions. This second sentence explains why paragraph 12.7 of Approved document B was referred to in the BBA certificate.

Furthermore, Mr Albon of the BBA explained precisely this point in his witness statement and explained that "*the Certificate wording was technically correct and that a suitably competent reader would have no difficulty in understanding the meaning...*" It is therefore not understood why Kingspan Insulation's witnesses were not taken to the second part of paragraph 12.7 when being asked to justify why that paragraph was referred to in the BBA certificate, particularly given

that the certificate was drafted by the BBA and BBA had explained why it was drafted in that way. Kingspan Insulation can certainly not be criticised for BBA's decision to refer to that paragraph in its certificate.

The LABC also produced some certificates in respect of K15. The LABC was responsible for drafting those certificates with the assistance of Herefordshire Building Control. Wording was only included in an LABC certificate which had been authorised by the LABC.

As the Inquiry has heard, the 2009 LABC certificate stated that K15 "*can be considered as a material of limited combustibility*". In its written opening submissions Kingspan Insulation accepted and acknowledged that, taken in isolation, this sentence could be misleading.

The LABC has tried to suggest in its submissions that Kingspan Insulation is somehow to blame for the use of this language – even though it is wording that came from Mr Jones of Herefordshire Building Control and was not suggested or provided by Kingspan Insulation. Kingspan Insulation is not to blame for LABC's choice of wording. LABC has to take responsibility for its own choice of language in its own certificates.

Whatever the reason for LABC's choice of wording in 2009, the relevant language was not included in the subsequent certificates. Accordingly, at the time of supply of K15 for use on Grenfell Tower the applicable LABC certificate, of 30 March 2015, did not contain the wording which has been criticised and nor had the prior certificate of 2013.

The relevant point is this: whatever criticisms might be made about the LABC's choice of language in its 2009 certificate, there is absolutely no evidence that anyone involved in the design of the Grenfell Tower Refurbishment read that outdated 2009 certificate, far less that they relied on it or were misled by it in any way.

In addition, there has been some criticism made about some of the product literature relating to K15. Kingspan Insulation accepted before the start of Module 2 that certain statements made in early versions of K15 product literature and other information issued **prior to 2014** could and should have made it clearer that the 2005 BS 8414 Test related to a particular system and advised caution against applying the 2005 Test too broadly.

However, this has to be seen in the context of the newness of the BS 8414 test, and general uncertainty within the industry at the time, as to the extent to which it was appropriate to

extrapolate the performance of one cladding system in a BS 8414 test to other systems. Ultimately the position was clarified in the June 2014 Technical Guidance Note 18 which made it clear that a BS 8414 test in respect of one system could be relied upon by appropriate professionals when assessing the likely performance of other systems.

In any event, at the time of the Grenfell Tower refurbishment, Kingspan Insulation's standard advice to clients correctly referred to Approved Document B and to Technical Guidance Note 18 and appropriately summarised relevant routes to compliance.

Again, whatever criticisms have been made of historical product information, there is absolutely no evidence that anyone involved in the design of the Grenfell Tower Refurbishment was misled in any material way by any of the outdated product information relating to K15.

I now turn to allegations made about Kingspan Insulation itself. One of the most perplexing allegations that has been advanced is the assertion that the company's actions were somehow causative of the tragedy that occurred because K15 "*set the precedent that combustible insulation could genuinely pass a BS 8414 test and so be used over 18 metres*". Such an allegation makes no sense whatsoever.

As I have explained, current K15 – the type used on the Tower - has been used in 14 different systems which have each genuinely passed full scale fire tests under BS 8414. Those have all been proper tests in respect of which no wrongdoing has taken place. The fact that numerous systems incorporating K15 have validly passed BS 8414 tests cannot render Kingspan Insulation responsible for any wrongdoing on the part of any other manufacturer. The allegation is a nonsense in fact and in law.

The secondly point on this topic is that, Kingspan Insulation's corporate culture has also come under attack.

The reality is that Kingspan Insulation's priority has always been about the safety of its products. It has never pursued commercial interests at the risk of life or fire safety.

Kingspan Insulation has provided a very considerable volume of documents to the Inquiry spanning a period of over 2 decades; of those disclosed documents, over 23,500 have been provided by the Inquiry to Core Participants.

That is **three times greater** than the volume of documents (7,703) provided from Celotex - notwithstanding that K15 amounted to only 5% of the rainscreen insulation purchased for the Tower whilst Celotex's PIR product amounted to 95%.

It is 63 times greater than the 378 documents provided in respect of Arconic's disclosure – notwithstanding that Arconic produced the PE-cored ACM material that covered the whole tower and was the principal cause for the spread of the fire.

In short, virtually every aspect of Kingspan Insulation's business over the last two decades has been examined in detail for disclosure purposes. That process has unearthed a handful of emails and "chats", mainly involving three individual former employees, which have revealed conduct that was totally inappropriate and unacceptable and which has been acknowledged as such and for which Kingspan Insulation has apologised unreservedly. Such improper behaviour has no place in Kingspan Insulation or the wider Kingspan Group, and is in no way reflective of its core values. None of those three employees remain in the employment of the company.

These isolated communications are the exception and they should not condemn the behaviour of the many hundreds of employees that work at Kingspan Insulation, let alone the 18,000 employees who work for Kingspan Group worldwide.

The company has responded by taking robust measures ensuring that its culture is embedded throughout the organisation, and details of the numerous steps taken by the company are set out in its Opening Submissions.

I now turn to the final point in relation to allegations that Kingspan Insulation misled the Housing Communities and Local Government Parliamentary Select Committee in 2018.

At that time, the Linear Route to compliance under the Building Regulations permitted rainscreen cladding systems to be installed on buildings above 18m provided all the material used had achieved certain classifications in small scale fire tests. Kingspan Insulation considers that this approach is flawed and not based on scientific or empirical evidence. In particular, this approach takes no account of how individual products will perform when combined in a cladding system. As part of his evidence, Mr Burnley drew those concerns to the attention of the Select Committee and referred to some examples of BS 8414 tests of whole systems which had failed despite the fact that the individual components had achieved the necessary classifications.

At the Committee's request, the company provided details of three tests of systems comprising Euroclass A1/A2 cladding and insulation that had failed full scale fire tests. One of those three tests was of a cladding system that Kingspan Insulation had arranged to be tested. The other two tests had been independently commissioned by third parties and had nothing to do with the company.

When Mr Pargeter came to give evidence on 9 December 2020 he was subjected, without any notice, to extensive cross-examination to the effect that Kingspan Insulation had deliberately misled the Select Committee.

Leaving aside for now, whether such cross-examination is permissible under Art 9 of the Bill of Rights, which is a matter for you Mr Chairman and to which we have drawn the Inquiry's attention, the allegation that Kingspan Insulation misled Parliament is wholly wrong.

The company was initially criticised for not informing the Select Committee that one of the test reports it had provided related to a cladding system which contained deliberate design flaws. But that allegation was based on a misunderstanding of the true factual position. The report provided to the Committee was of a system which was robustly built and contained no deliberate design flaws whatsoever.

When that mistaken understanding was corrected the company was then criticised for **NOT** providing the Select Committee with details of another system which had passed a BS 8414 test. That criticism is also entirely misplaced. The point being made to the Select Committee was that *some* systems which comply with the Linear Route will nevertheless be incapable of passing a BS 8414 test, and are therefore unsafe. It was never being suggested that all systems passing the Linear Route would fail a fire test. The company provided details of the test which illustrated the relevant point of point of public safety which was being made. The other system, which passed the test, was irrelevant to the issue of public safety under consideration and so was not provided.

Kingspan Insulation was acting in good faith by attending the Select Committee as requested and properly drawing attention to three valid fire safety tests which demonstrate that the Linear Route to Compliance is not 100% effective in screening out unsafe cladding systems. The Company drew the Parliamentary Select Committee's attention to a genuine and important issue of public safety. It should not have been criticised for doing so during the course of this Inquiry. The criticism is particularly difficult to understand in circumstances in which the Inquiry's own expert,

Dr Lane, has presented evidence as to the importance of full scale testing and the problems associated with small scale testing, as I have mentioned.

The issue of public safety raised by Kingspan Insulation is real. A system based on the classification of individual products in small scale fire tests is not failsafe. For example, if Studio E had switched the specification for the Grenfell Tower refurbishment to non-combustible synthetic mineral fibre insulation instead of PIR, the proposed system would have been superficially compliant with the Linear Route because Arconic's PE-cored ACM had been wrongly classified as Euroclass B. However, the evidence clearly indicates that the tragic outcome of the Grenfell fire would have been the same even if non combustible mineral fibre insulation had been used with the PE-Cored ACM instead of PIR.

Conversely, full scale fire testing of the Grenfell Tower cladding system would have revealed the lack of safety of the proposed system.

Kingspan Insulation strongly believes that it should be a requirement of the Building Regulations that every cladding system proposed for use on a residential building with a floor above 18 metres should have to pass a BS 8414 test, regardless of the classifications of the individual components. This is the best and most robust way to ensure that all cladding systems are safe. Kingspan Insulation will continue to state its position on this important issue of public safety even if others try to criticise it for doing so.

Finally, Mr Chairman, and by way of conclusion, Kingspan Insulation emphasises the following points:

First, extensive testing shows that at least 14 different systems incorporating K15 have passed full scale fire tests under BS8414. Those systems are safe systems.

Second, Kingspan Insulation recognises that there were certain shortcomings in respect of some aspects of the testing of K15. But those shortcomings have not resulted in anyone being misled in any material way. The replacement tests carried out means that any professional who relied on any relevant historical testing can now rely on replacement tests in any event.

Third, whilst criticisms have been made of the wording in early versions of K15 certificates issued by the LABC, the relevant issues had been corrected long before the refurbishment. The certificates current at the time of the refurbishment were appropriately worded. Furthermore, there

is no evidence that any person involved in the refurbishment relied on, let alone was misled by, the wording of any LABC certificates for K15.

Finally, it is imperative that the Inquiry move on from the unfounded accusations that have been made, and apply a clear, calm and measured approach to the evidence. That evidence is unequivocal: the type of Arconic PE-cored ACM cladding used on Grenfell Tower had only achieved a Euroclass E classification in testing and was **unsafe for use** with any type of insulation. Furthermore, the nature and speed of the spread of the fire would not have been materially different if non-combustible mineral fibre insulation had been used behind the ACM cladding instead of the type of insulation that was in fact used.

Mr Chairman, thank you.