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SMART

Kingspan and the Grenfell Tower Inquiry

A Report for Architects,
Specifiers, Project Managers &
Fire Protection Engineers

October 2021

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Appendix 1

List of the Kingspan executives and managers who testified in the Grenfell Inquiry, provided witness statements or are mentioned in this report.

01

Introduction

As a result of the 2017 Grenfell Tower Fire in London that took the lives of 72 residents and was the worst residential fire in the United Kingdom since World War II, the British Government has been conducting an Inquiry into the causes of the fire. This report concerns the building products company Kingspan and the revelations about Kingspan's approach to fire safety that emerged during that Inquiry. Given the critical work of architects, specifiers, and project managers in ensuring the fire and life safety of all who occupy and visit the structures that they design, we want to bring this information to your attention.



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Grenfell Tower early the morning of June 14, 2017.

Kingspan is a \$5 billion building materials company based in Ireland that makes not just a wide variety of insulation panels and boards, but also flooring, ceilings, wall panels and facades, roofing, skylights, ventilation, ductwork, and more. Some of its products are branded Kingspan but others are known by other brand names, e.g., Benchmark and All Weather Insulated Panels (AWIP).

The company's documented conduct that has recently been exposed in the Grenfell Tower Fire Inquiry has concerned its Kooltherm K15 insulation, the primary Kingspan product used in a small portion (5.2%) of London's Grenfell Tower as part of the exterior insulation and cladding system that is believed to have contributed to the extraordinarily rapid spread of the fire up the side of the building. Although Kingspan did not advise the project and learned only after the fire that its products had been used on the Tower, the evidence from internal company documents, as well as testimony and statements from Kingspan managers, as outlined below, reveal shortcomings in the company's approach to fire testing and marketing.

While the Inquiry has focused on Kooltherm K15, the Kingspan managers and employees in the United Kingdom responsible for its testing and marketing were also responsible for testing, certification and marketing a broader range of products, and some of those individuals remain in similar or even higher positions

with the company. As far as the public record shows, it appears the government officials conducting the inquiry have not asked the company about the extent to which the problems they are examining could potentially implicate other products or product lines.

This report contains information from thousands of pages of testimony, witness statements and related documents concerning Kingspan that became public, primarily between November 2020 and March 2021, as part of the ongoing Grenfell Tower Inquiry.¹ As we document below, the Inquiry has revealed how Kingspan, from 2006 until 2020, handled issues with the fire safety testing performance and marketing of its popular insulation product Kooltherm K15, including:



Photo by Robin Sones, [CC-BY SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/), via Wikimedia Commons.

Grenfell Tower in 2009, before the renovation and the installation of the cladding.

- Until October 2020, Kingspan continued to use a 2005 large scale fire test to market Kooltherm K15, despite the fact that Kingspan had introduced a new, more flammable, version of K15 in 2006;
- Until revealed by the Inquiry in 2019, Kingspan kept secret four 2007-2008 fire tests involving this new version of K15 that had failed to meet the standard necessary to pass the test;
- By early 2008, Kingspan managers and executives were aware of the "bad fire performance," fire test issues, and inappropriate marketing of the insulation, and they understood that the product risked not passing the appropriate fire tests for which Kingspan was actively marketing it.
- Kingspan relied on misleading safety certificates for K15 starting in 2009;
- Kingspan relied on 2014 and 2015 large scale fire tests that, the inquiry revealed, had used altered, R&D, versions of K15 that were different from the version being sold;
- For years, Kingspan issued misleading marketing literature and advice ("letters of suitability") to use K15 in configurations for which it was never tested, and in some cases, for which it had failed tests.


The Inquiry revealed how, during this period of 14 years, numerous managers and executives were involved in discussions about these problems and decisions regarding this testing and inappropriate marketing of the product, and several are still involved in the testing and certification of this product and others.

KINGSPAN AND THE GRENFELL INQUIRY

Between November 2020 and March 2021, the UK Government's Inquiry into the fire produced documents and testimony from eight Kingspan managers and executives and witness statements and documents from an additional seven Kingspan managers. While news coverage of the inquiry has been intense in the UK, this has not been the case in the United States, where Kingspan sells many of the same products, including Kooltherm K15.

¹ All of the testimony, statements, and source documents are available at <https://www.grenfell-towerinquiry.org.uk>

02



Grenfell fire seen just before 5am on June 14, 2017, from Putney Hill in London.

Large Scale Fire Testing in 2005-2008

The Inquiry exposed Kingspan's continued use, until late 2020, of a 2005 fire test to market Kooltherm K15, despite the fact that Kingspan had introduced a new, more flammable, version of K15 in 2006 that was "quicker and more cost-effective to produce."

This 2005 test was a large scale BS 8414-1 fire test, the U.K. equivalent of an NFPA 285 test for a complete rainscreen cladding build-up with a masonry substrate. These tests require that the whole assembly be tested in the configuration in which it is to be utilized and installed, and the BS 8414 test result is classified to the criteria in the U.K. standard BR 135.²

Kingspan did not withdraw that fire test until late 2020, just days before the company began testifying in the Inquiry, admitting that this test and 2 others from 2014 "featured products that were not sufficiently representative of the product currently sold into the marketplace."

The Inquiry revealed that Kingspan executives were aware as early as 2007 that there were fire safety issues with the new version of K15 that it had introduced in 2006. It kept secret four large scale tests (BS 8414-2 tests, for a steel frame) involving K15 in 2007 and 2008, all of which had failed.

The internal report from the December 2007 test³ highlighted that the phenolic [K15] "burnt very ferociously" and that the test rig had turned into a "raging inferno" with the phenolic "burning on its own steam." The test had to be shut down prematurely "because it was endangering setting fire to the laboratory," according to Kingspan's report. "The new technology phenolic is very

2. In addition, no official pass/fail classification report was issued for this 2005 test at the time. When Kingspan requested such a report ten years later, an internal email within the BRE (the Building Research Establishment, where the test was conducted) reads: "This is not a straight forward one; in theory we could issue a classification document, however I can understand why one was not issued for this test as it seems like an indicative type test. BS 8414 and BR 135 is a system test and classification system and from what I can see from this report, there is no external weather protection system included (e.g. render system or rain screen cladding). Whilst they have a cement board overcladding, I doubt this would be considered a complete system. Data such as this has been misrepresented in the market in the past. I suggest this question should be passed by Steve Howard and/or Debbie Smith before a response is sent." A report was subsequently issued. In his testimony, Ivor Meredith, in charge of fire testing for Kingspan at the time, said "Obviously this wasn't supposed to be a cladding system, this was just supposed to be representative of a non-combustible outer layer."

3. https://assets.grenfelltowerinquiry.org.uk/KIN00008847_Exhibit_MPR_1_-_Metsec_Sotech_and_Kingspan_Kooltherm_K15_BS8414-2_Test_Analysis_Test_Date_20_December_2007_Report_Date_7_January_2008_0.pdf

“The question of K15’s bad fire performance is no longer just an internal one. It would seem that Offsite [a Kingspan division] had a very dramatic test failure.”

– Kingspan Technical Project Manager Ivor Meredith

different in a fire situation to the previous technology which has passed several tests.”

“In all honesty from what I have seen,” writes Ivor Meredith, Kingspan’s Technical Project Manager in charge of fire testing at the time, “the way the phenolic burned is of the most concern. Therefore we need to add a fire retardant.” Comments from the testing organization included in Kingspan’s internal report say:

The official line – it’s a system failure no individual component can be solely held responsible for the failure. However (unofficial comments) It was apparent that the insulation was fully involved in the test. Surface spread of flame was apparent and the core continued to burn when the flame source had been extinguished. They stated they did not remember the product performing like that last time.

Kingspan did not reveal to the testing organization that it had switched in 2006 to a new version of K15 different from the version tested in 2005, and it kept secret the existence of these four failed tests until the Inquiry requested information from Kingspan.

The Inquiry revealed that top managers and executives were aware of the “bad fire performance,” fire test issues, and inappropriate marketing of the insulation as early as 2007, and they understood that the product risked not passing the appropriate fire tests for which

Kingspan was actively marketing it.

In a 2008 email with the subject line “K15 problems” Meredith explains to Kingspan managers including Gwyn Davies (currently a Technical Director at Kingspan), and Malcolm Rochefort (a Technical Director who retired in 2015):

Whereas [K15 produced with the] old process will self extinguish, [K15 produced with the] new process has proven itself in a vertical situation to continue to burn when the flame source is removed. We do have a paper trail that shows considerably better performance with old tech [the 2005 version of K15 prior to the introduction of the new version] however this cannot be applied to steel frame facade situations which is 80% of the market.

Rochefort’s response: “We can’t carry on providing something that we know fails a fire test.”

In an April 2008 monthly report, Meredith says “Indicative Calorimeter tests on new K15 vs old have shown a quicker time to ignition and double the heat output for the new product thus confirming initial suspicions in respect of Reaction to Fire.” In an email to his bosses that same month, he says:

The question of K15’s bad fire performance is no longer just an internal one. It would seem that Offsite [a Kingspan division] had a very dramatic test failure.

...the attached picture shows the most recent K15 test performed by Offsite and K15 burning under its own steam 10 minutes after the test was put out. Offsite are gravely concerned that we are selling something that doesn’t do what we say it does.”

Offsite writes with concern to Meredith’s boss, Technical Manager Philip Heath⁴, and others that “[a]fter the heat source was extinguished the K15 continued to burn on for considerable time in fact it was in excess of 30 minutes.” Nobody at Kingspan told its own Offsite division of the other failed tests, nor that it had changed K15 to a new version produced with a different manufacturing process, and with a different resin and perforations that were not on the earlier version. In fact, Heath writes back to Offsite that “there are always inconsistencies in relation to fire tests” and “With regards the reason for failure, this is difficult for us to determine, especially having had some success with BS8414.” Heath sends a copy to Kingspan’s Gwyn Davies of the email he sends to Offsite, with

4. Still employed by Kingspan as of November 30, 2020, see below for more information.



Ivor Meredith testifies before the Grenfell Tower Inquiry in 2020.

“We simply do not have the information to support the use of K15 above 18 metres with steel frames.”

– Kingspan Technical Project Manager Ivor Meredith, in a May 2008 internal company email

a note that “I’m spinning so much I’m dizzy!!!”

In May 2008, Meredith emailed Heath about a concern raised by the façade engineering consulting company Wintech that the results of the BS 8414-1 test (the large scale test for masonry structures) provided by Kingspan was not relevant to Wintech’s steel-framed high rise project, which required a different test (BS 8414-2). Meredith says that:

We simply do not have the information to support the use of K15 above 18 metres with steel frames. I’m worried that the product will be removed from site and the ongoing effect of such an action.

During his testimony in November 2020, Heath is asked:

Q: *He is absolutely clear with you at this point that there is no evidence to support the use of K15 above 18 metres with steel frames; would you agree?*

Heath: *At this time, yes.*

Q: *Can you recall what advice you gave about this use of K15 on this building?*

Heath: *I can’t recall what advice I gave to Ivor in relation to that, no.*

Q: *Would you accept that Mr. Meredith repeatedly raises in writing a lack of test evidence about the use of K15 above 18 metres, including in steel framed systems? Would you agree that you had that repeatedly in writing from Mr Meredith?*

Heath: *I would. I think the whole team understood the — that situation, yes.*

Heath is asked why he signed off on the fire testing and certification part of the K15 product development system in 2008, “when the evidence suggests that K15 had been sold in its new form for two years prior to that.” He answers, “Yeah, no, I cannot explain that.” “Would you agree that what ought to have happened was a comprehensive program of fire testing, so that you fully understood the fire safety consequences of that new product before it was sold and marketed for use on buildings over 18 metres?” “On reflection, yes” he answers.

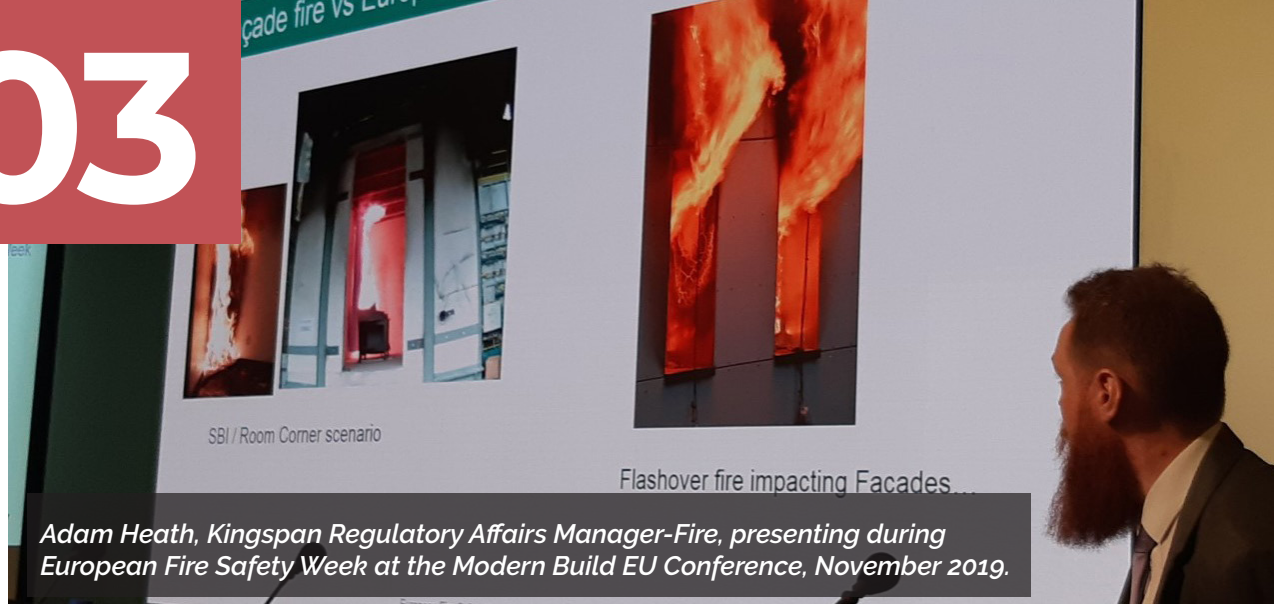


Photo by Twitter user @ModernBuildEU

Other Fire Testing

Although technically allowed at the time by the U.K. building code, Kingspan also used what it called a “loophole” and “a bit of a cheat” to achieve a higher fire rating (Class 0) for K15 by testing only the foil surface of the insulation, even though the complete product had failed the test.⁵

Meredith is asked about this in his testimony:

Q: Just on national class 0 now, just a couple of very brief questions on that. You mentioned yesterday, you said that you were not able to repeat the class 0 results for the Kesteren [new] technology K15.

Is that right, that after the technology was changed [in 2006], you kept trying to test to BS 476-6 and 7 but you couldn't ever get those results again with the new technology? Is that right?

Meredith: The part 7, the surface spread of flame test, that was not an issue. It was the fire propagation test.

Q: Yes.

Meredith: We were unable to repeat the results as a composite material.

Q: Yes. So it's right, isn't it, that Kingspan started testing the foil facer alone. Is that right?

Meredith: That's correct. Justin Davies

[Still employed by Kingspan as “Divisional Certifications Manager”] found a clause in the Building Regulations that seemingly allowed this. I personally didn't agree with this, and voiced my concerns.

Q: Yes. Who did you voice your concerns to?

Meredith: I think everybody.

This method of testing allowed Kingspan to claim that K15 was a class 0 product, a classification sometimes conflated with “limited combustibility” by the UK construction industry, even though K15 was not of “limited combustibility” and was in fact combustible by its very make-up as a phenolic insulation. Heath confirms in his testimony on November 30, 2020: “I knew at the time it wasn't a product of limited combustibility.”

Here is a 2008 WhatsApp chat between a Kingspan technical/marketing employee, Peter Moss, who had just advised a client on the use of K15 and is checking with another member of Kingspan's technical team, Arron Chalmers:

Chalmers: “[K15] Doesn't actually get class 0 when we test the whole product tho LOL!”

⁵ This was the U.K. BS 476-6 test, a fire propagation test similar to the ATSM E84/UL723 test in the U.S.

Moss: "WHAT, We lied? Honest opinion now."

Chalmers: "Yeahhhh. Tested K15 as a whole – got class 1 [a worse rating]. Wheyy. lol "

Moss: "Whey. Shit product. Scrap it."

Chalmers: "Yeah all lies mate" and "Alls we do is lie in here."

In 2012, Kingspan again tested just the facer to achieve a Class 0 rating, but this time the company also used a research and development version of K15 — with a fire retardant lacquer added to the version of the product it tested, making it different from the one on the market. This despite the fact that when Kingspan tested the actual complete K15 insulation to try to achieve this rating, it failed to achieve Class 0. Adrian Pargeter, current Head of Technical and Marketing for Kingspan Insulation Great Britain agreed in his testimony that this report should never have been relied on as support for K15 as sold.

And again in 2016, Kingspan tested just the facer to achieve the Class 0 rating it wanted from the test.

Not until the Grenfell Inquiry—more than 10 years after the product was first marketed using this test method-- did Kingspan reveal that it had repeatedly classified the product as Class 0 based on testing only the facer.

Internally, however, there had been discussion about this decision. Although agreeing that the building regulations allowed this interpretation, Kingspan's external fire engineer advised Kingspan to test the complete product before making any claim "as the foam behind the foil is likely to have a bearing on the facing performance." Pargeter is asked about this in his testimony:

Q: Does this exchange tell us that you were prepared to interpret ADB [Building Code] in a particular way in order to make sales?"

Pargeter: "Yes that would be true"

Q: And that particular way was less safe, less conservative, and not ideal?

Pargeter: "Potentially, yes"

In September 2016, Dan Ball (currently Technical Project Leader at Kingspan Insulation) emailed Adrian Brazier (currently Technical Project Manager), and Adam Heath (currently the Regulatory Affairs Manager for Fire, Kingspan Insulation):

No cigar again, K15 was worse than the K5, both look on track for a class 1, but neither

Chalmers: "[K15] Doesn't actually get class 0 when we test the whole product tho LOL!"

Moss: "WHAT, We lied? Honest opinion now."

Chalmers: "Yeahhhh. Tested K15 as a whole – got class 1 [a worse rating]. Wheyy. lol "

Moss: "Whey. Shit product. Scrap it."

Chalmers: "Yeah all lies mate" and "Alls we do is lie in here."

– From a 2008 WhatsApp chat between two members of Kingspan's K15 technical/marketing teams

as a finished product have met the criteria for class 0. This is where the regs that state that you can claim it from the facing start to cause issues, we have a class 0 facing on K15 and therefore according to part B [of the ADB/Building Code] can then claim that anything with that facer is class 0, but when tested as a complete product as placed on the market it's not class 0.

The email continues:

It is something that needs attention if we wish to continue with stating class 0 as claiming class 0 from the facing is somewhat misleading.

In 2016, Arron Chalmers sends an email:

Yeah, does seem a bit of a cheat though doesn't it claiming Class 0 for just a facer test, when as you said it's meant to be product as placed on the market... If a fire engineer believes the core will affect the facing performance though should we be claiming class 0 based off facer performance alone if 40mm K15 then fails to get class 0?

At this point, another member of the team emails:

Perhaps it would be better if you had a meeting to discuss this verbally.

This "bit of cheat" email chain went to Pargeter (currently the Director of Technical, Marketing, and Regulatory Affairs), Adam Heath (currently the Regulatory Affairs Manager for Fire, Kingspan Insulation), Dan Ball (currently Technical Project Leader at Kingspan

Insulation), Adrian Brazier (currently Technical Project Manager), and Arron Chalmers.

A few months later in a November 2016 email to Pargeter, Chalmers asks for help in maintaining the Class 0 rating for K15 in Scotland:

Chalmers: *You're probably aware of this issue as it's been ongoing for a while, but basically through a loophole we claim K15 is class 0 in line with the ADB, by just testing the facing. However, Scotland's Technical handbook is worded better in the sense that the entire product must be tested to achieve Class 0, to subsequently be designated as "low risk." So we have two options— 1. We know it's not low risk, shall we be honest and say it's medium risk and therefore cavity barriers will need to be every 10m and not every 20m. Bearing in mind, this could then damage us on future jobs as Xtratherm has a low risk board and therefore huge USB over K15. 2. We blag it, send them our facing test and confirm that in line with ADB its class 0 and kind of ignore her direct question about being low risk and hope their building control officer interprets this to class 0/low risk. What do you think?*

Pargeter replies: *"Hi Arron. Tricky one. "As class 0 will no longer be recognised by BBA etc, is there any other test method that can be used to prove 'low risk'"*

Chalmers: *"I know, our only option to legitimately claim 'low risk' is to get a Euroclass B on K15, or somehow get Class 0 on the product as a whole (which ideally is what we should be doing anyway). Neither seem like a reasonable possibility atm"*

Pargeter is asked about this during his testimony in the Inquiry in December 2020:

Q: *It's right, isn't it, that ideally you should have been getting class 0 on the product as a whole but weren't. That's clear, isn't it? That's what Frans Paap [from EXOVA, Kingspan's fire consultant] had advised.*

Pargeter: *In an ideal world, yes, I would agree with that.*

Q: *Ideally, I would suggest in a compliant world, in a world where you wanted your products to comply.*

Pargeter: *No, it was still compliant, but ...*

Q: *It's clear from this, isn't it, that your staff at Kingspan, Mr Chalmers, knows exactly what you ought to be doing in terms of claiming*

class 0, but you weren't doing it, and that was because you were persisting with your course of exploiting what you perceived and he described as a loophole in ADB?

Pargeter: *That's his view, yes.*

Q. *What kind of business, what kind of department were you running, Mr Pargeter?*

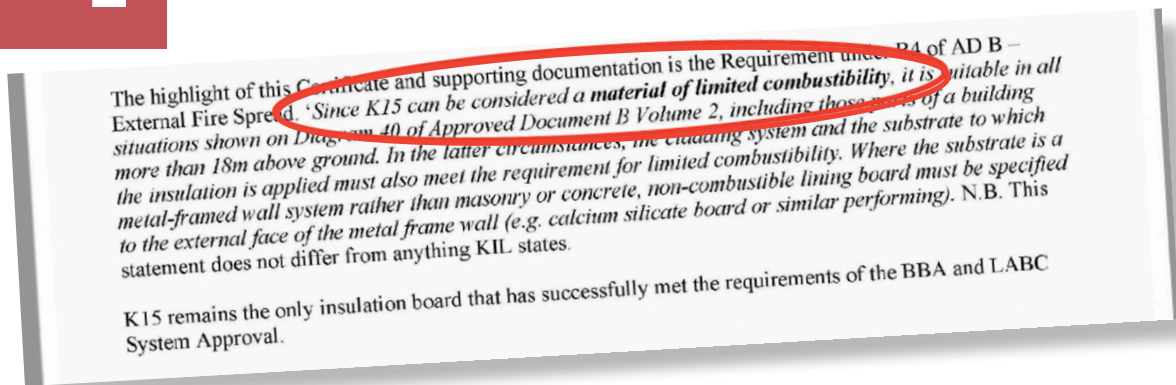
Pargeter: *I'd like to think a good, well-run department.*

Although Pargeter agrees in his testimony that claiming class 0 from the facing is "somewhat misleading" and he withdrew the description of K15 as low risk for the Scottish market based on the stronger language in Scotland's building code, he waited another 11 months before inserting the term "medium risk" for K15 in Scotland. Meanwhile, Kingspan continued to claim Class 0 for K15 in the English and Welsh markets based on the surface test, knowing that the full product could not achieve Class 0, a decision that Pargeter says was his.

After the Grenfell Fire, still relying on just testing the surface, Kingspan makes a subtle technical change to the wording in its K15 product literature, changing it from "Kingspan Kooltherm K15 Rainscreen Board **is** [emphasis added] Class 0, as defined by the Building Regulations" to saying K15 "**achieves** [emphasis added] Class 0 as defined in Approved Document B in England and Wales."

Through all of this, Kingspan continued marketing Kooltherm K15 for hundreds of high rises in the U.K. and elsewhere — indeed it was the primary product Kingspan was marketing for such use in buildings over 18 meters, and as one of Pargeter's team says in the "bit of a cheat" email chain in 2016, "Without the Class 0, we would have no product for that application."

**Through all of this,
Kingspan continued
marketing Kooltherm
K15 for hundreds of
high rises in the U.K.
and elsewhere.**



Kingspan Technical Manager Philip Heath, announcing the LABC certificate for K15 in a May 2009 internal company email.

Certification

The evidence from the Grenfell Inquiry indicates that Kingspan used “misleading” safety certificates in the marketing of K15. Official certificates for K15 were important to Kingspan, as Philip Heath says in his witness statement, because under certain circumstance, they allowed “automatic sign-off by local authority building control departments.” The overall purpose of obtaining them, he says, was to “facilitate and increase the sale of K15 over 18 metres and it was considered generally to aid the product’s credibility in the market.”

After the new version of K15 failed all four 2007-2008 tests, Kingspan pushed for such a certificate to be issued by the BBA, a non-profit approval body for the construction industry.

Kingspan did not inform the BBA that the 2005 test was on a different version of K15, nor did it provide the fire test results from 2007 or 2008 that had been conducted on the new version of K15. Nor did it tell the BBA that K15’s Class 0 rating had been obtained by testing just the K15 facing. According to the witness statement of Gareth Mills, the employee dealing with the BBA in 2008 (still a Senior Technical Advisor at Kingspan), Kingspan provided the tests to the BBA “because Kingspan wanted the BBA to omit some standard wording from the certificate that said the product definitely could not be used on buildings with a floor above 18 metres from ground level.”

The certificate also stated that **“the product** [emphasis added] meets the criteria stated within BR 135,” although the BR 135 standards for a large scale fire test in the UK only apply for the entire system as tested, as in the United States, and not for any single component of that assembly system.

The evidence from the Grenfell Inquiry indicates that Kingspan used “misleading” safety certificates in the marketing of K15.

Philip Heath suggests in the back-and-forth emails about the certificate’s wording that “we try and amend the wording below as detailed to remove blockwork and insert non combustibile, might allow us to use a little spin in the future” and “to give us a greater scope.” This despite the fact that the BRE, the organization that certifies test results, told Kingspan at a meeting in 2006 that the scope for the 2005 test did not cover non-combustible cladding as a generic expression and could only be relevant for the particular boards used as outer cladding in the actual test itself.

For this reason, several months later, the BBA proposes to amend the certificate to say “The product has been tested to BS 8414-1 for a specific construction on masonry walls.” Kingspan doesn’t respond for over 2 months, and then Heath says to his team “Let the file gather dust guys.” It wasn’t until July 2013 (over 4 years later) that the BBA’s amendment made it into its K15 certificate.

The Inquiry reviews with Meredith the emails between Joel Clark and Gareth Mills at Kingspan

and the BBA:

Q: Now, in the light of the answers you have given, would you agree with me that that email typifies the approach that Kingspan were taking at the time, which was to get away with as much as possible in their dealings with the BBA over the language of the BBA certificate?

Meredith: Yes, that's correct.

Q: And to bury any wording that was adverse to Kingspan's commercial interests, as far as possible, into the smallest font and deep into the certificate?

(Pause)

Meredith: I mean, that wasn't a direction from myself. Joel was acting under his own steam with respect to that. But it was -- he was meeting what we were wanting for that certificate, yes.

Q: Did you ever discuss this with Tony Millichap, this approach to BBA certificates?

Meredith: I think all our line managers were au fait with the back and forth we had to do to get a certificate.

Q: And they were condoning this behaviour; was that your understanding?

Meredith: When put in black and white, it looks quite shocking, but ... yes, I believe so.

Q: Yes, they condoned that behavior?

Meredith: Yes.

Q: Do you ever remember any of your line managers or anyone else at Kingspan saying, "We need to play straight with the BBA, we need to be open and transparent with them, because this is a matter of life safety, fire safety"? Do you ever remember having that conversation?

Meredith: I don't remember that, no.

Similarly, in obtaining a certificate from the LABC (the organization representing all local building control bodies that control and inspect building work in England and Wales), Kingspan failed to inform them of the change in the product after the 2005 test, nor of the failed 2007 and 2008 tests on the new version of K15, nor that its Class 0 rating resulted from testing only the facing of the K15.

Instead, Kingspan obtained an LABC certificate in May 2009 that said "From the results, it [K15]

can be considered as a material of limited combustibility and meets the criteria for class 0 classification for surface spread of flame" and "Since K15 can be considered a material of limited combustibility, it is suitable for use in all situations shown on Diagram 40 of Approved Document B Volume 2, including those parts of a building more than 18m above the ground. In the latter circumstances, the cladding system and the substrate to which the insulation is applied must also meet the requirement for limited combustibility."

Gareth Mills in his witness statement noted that "I seem to recall some of my colleagues in the sales department were mis-interpreting this in that they believed it to be a product of limited combustibility when, strictly speaking, it wasn't."

Kingspan failed to inform [the LABC] of the change in the product after the 2005 test, nor of the failed 2007 and 2008 tests on the new version of K15.

Heath, who had oversight over this certification process, admits in his testimony that he knew at the time that the 2005 test couldn't be relied on for a number of reasons, including the fact that the new technology was not what was being sold.

Although Heath admits in his testimony that "I knew at that time that it wasn't a product of limited combustibility," he announces the certificate as "GREAT NEWS" to his team, after having replied "FANBLOODYTASTIC" to Andrew Pack (currently Global Technical Support Manager), who had obtained the certificate.

Heath says that the highlight of the certificate is the section on K15 being considered a material of limited combustibility. At that same time, in May 2009, attaching the LABC certificate to the email, he writes:

Following the success of receiving the attached LABC accreditation that now

Q: And Kingspan knew, didn't it, all along, that K15 was not a material of limited combustibility; on the contrary, it was a combustible insulation, wasn't it?

Meredith: Yeah, definitely.

Q: Do you agree that this statement is fundamentally wrong and misleading?

Meredith: It's very misleading, yes.

satisfies the requirements for K15 being installed above 18 mts, we should cease any further fire tests for Ventilated Rainscreens (emphasis added). At in excess of £15k I test both the sales and business development teams should be adept enough to use their tool kit to the full. The pressure is on other component suppliers of this method of construction to obtain similar statements or prove their non combustible statements. This saving will allow other applications and the Kooltherm brand to achieve a similar focus to that given to K15 over recent years and look at how the sales in this have grown.

In an email on May 7, 2009, Rochefort asks Heath "Out of curiosity, which fire test result(s) did we use to get this?" Heath responds:

We can be very convincing when we need to be, we threw every bit of fire test data we could at him, we probably blocked his server, in the end I think the LABC convinced themselves Kooltherm is the best thing since sliced bread. We didn't even have to get any real ale down him!

Meredith is asked about the wording on this certificate in his testimony:

Q: And Kingspan knew, didn't it, all along that K15 was not a material of limited combustibility; on the contrary, it was a combustible insulation, wasn't it?

Meredith: Yeah. Definitely.

Q: Do you agree that this statement is fundamentally wrong and misleading?

Meredith: It's very misleading, yes.

In Meredith's witness statement, he says about this certificate:

We were clutching at anything that would support the use of our products and very busy trying to balance all the needs of the companies business development therefore I believe it went unchecked properly by us.

Meredith is asked about this in testimony on November 24, 2020:

Q: Now, far from this certificate having gone "unchecked properly by us" - - that 's what you say there -- far from that being the case , in fact Kingspan were very pleased with this wording, weren't they? They knew exactly what it said and they were very happy with it.

Meredith: It — yeah, of course, it had its benefits.

Q: And they knew that the wording was misleading. You and your superiors knew that, didn't you?

Meredith: Yes.

Q: The language you use there suggests - -is this right-- that you were just desperate for any support that could be given for the K15 product; is that fair ?

Meredith: It was business critical , because it was an important product.

Q: Yes. Putting it simply, a certificate from the LABC saying that K15 was of limited combustibility and suitable for use in all situations was of enormous benefit to Kingspan commercially, wasn't it?

Meredith: Yes.

Meredith sends an email on June 5, 2009 to Mark Swift, cc'd to Gareth Mills and Andrew Pack:

Personally I would just say that we now have the LABC document and as long as the guidance within it is followed (there) are no limitations of use for K15 in high rise external ventilated facades. This document will be available to all LABC therefore we will not get any problems in the future when seeking approval for use from Local Authority Building Control Officers.

From now on when challenged, I'm simply going to send the LABC document and let that do the talking. I've copied AP and GM to allow them to comment.

Again in testimony, Meredith is asked about this

email and the LABC certificate:

Q: So that was your strategy at this point, wasn't it, to let that certificate- misleading as it was, do the talking and get K15 onto high-rise buildings, and it took the pressure off for a while, didn't it?

Meredith: Yeah, I was drowning in enquiries about K15, so I was just following suit from my line manager that this was the solution.

Q: Yes. It gave you a much needed reprieve, didn't it, in terms of something to point to on projects to say you can use K15 over 18 metres, because there was no test evidence, was there, that supported that?

Meredith: There was test evidence, but it was not directly relevant, like we discussed yesterday.

Q: Yes, thank you.

After obtaining these certificates, in a 2009 meeting with Meredith, Coppock, Rochefort, Gwyn Davies, Justin Davies, they note:

*There are several fire performance requirements that are crucial for sales of Phenolic however in some areas on development Phenolic products we are falling just short of the mark. This group was originally pulled together as we believed we must have the BS 8414-1 & 2 (the façade test for masonry and steel frame) fire propagation test on Kooltherm K15. **Following the recent release of the K15 BBA and the LABC Lantac Approval this urgent requirement has been relaxed as the documents are working to cover the regulatory desires for specific system approval.** [emphasis added] Other areas of concern relate to the surface spread fire performance of the product that we are concerned may have reduced, this can be seen in recent BS 476 Part 7 tests ..."*

Heath is questioned about this during the Inquiry:

Q: So it's clearly being stated there, isn't it, that the urgent requirement for 8414 testing, including for steel frames, has now been relaxed because those two documents, the BBA and LABC certificates, are working to cover the regulatory desires; do you see that there?

Heath: I do, yes.

Q: Was that your understanding at the time,

that that's what was happening?

Heath: I did believe -- as we said, the LABC and the BBA approval had provided us with reduced enquiries, so yes that narrative I'd say is correct, yes.

Q: Yes. If we can go down and look at item 2 of these meeting minutes, still on page 1, we can see there, under "Kooltherm K15 façade test", it says this: "Following discussions it was agreed that we still need to look at developing a product that will be able to pass a BS 8414-2 test as a back up to the LABC documentation."

Do you see that there?

Heath: Yes, I do.

Q: Then it says:

"Current fire propagation levels with ATH filled and OPg20 development products are not adequate for this test. Thus currently we are not in a situation to test due to the prolonged levels of after-burn which are experienced."

Do you see that there?

Heath: Yes.

Q: So would you agree that this sentence clearly shows that Kingspan knew at this time that K15 could not pass a large - scale fire test as part of a system tested to 8414-2?

Heath: Within the systems we'd tested up to now, at that time, yes. I mean, it's -- his comments there can only be related to the systems that we'd failed, yes.

Q: Do you agree that the minutes also make clear that the improved trial products being developed were also thought unlikely to be able to pass as part of a successful system test?

Heath: From his comments, yes.

When Meredith writes to his boss, Heath, questioning the decision to stop testing, Heath writes:

As I previously stated the LABC doc ticks the box's at the moment, and until we are challenged we should cease all K15 façade tests and focus our efforts elsewhere.

Rochefort says in his testimony: "From a cost point of view I can see it made sense [to stop testing] if we didn't need to do tests, because I think that 15K

is probably an underestimate for what the tests cost."⁶

In testimony, Heath is asked:

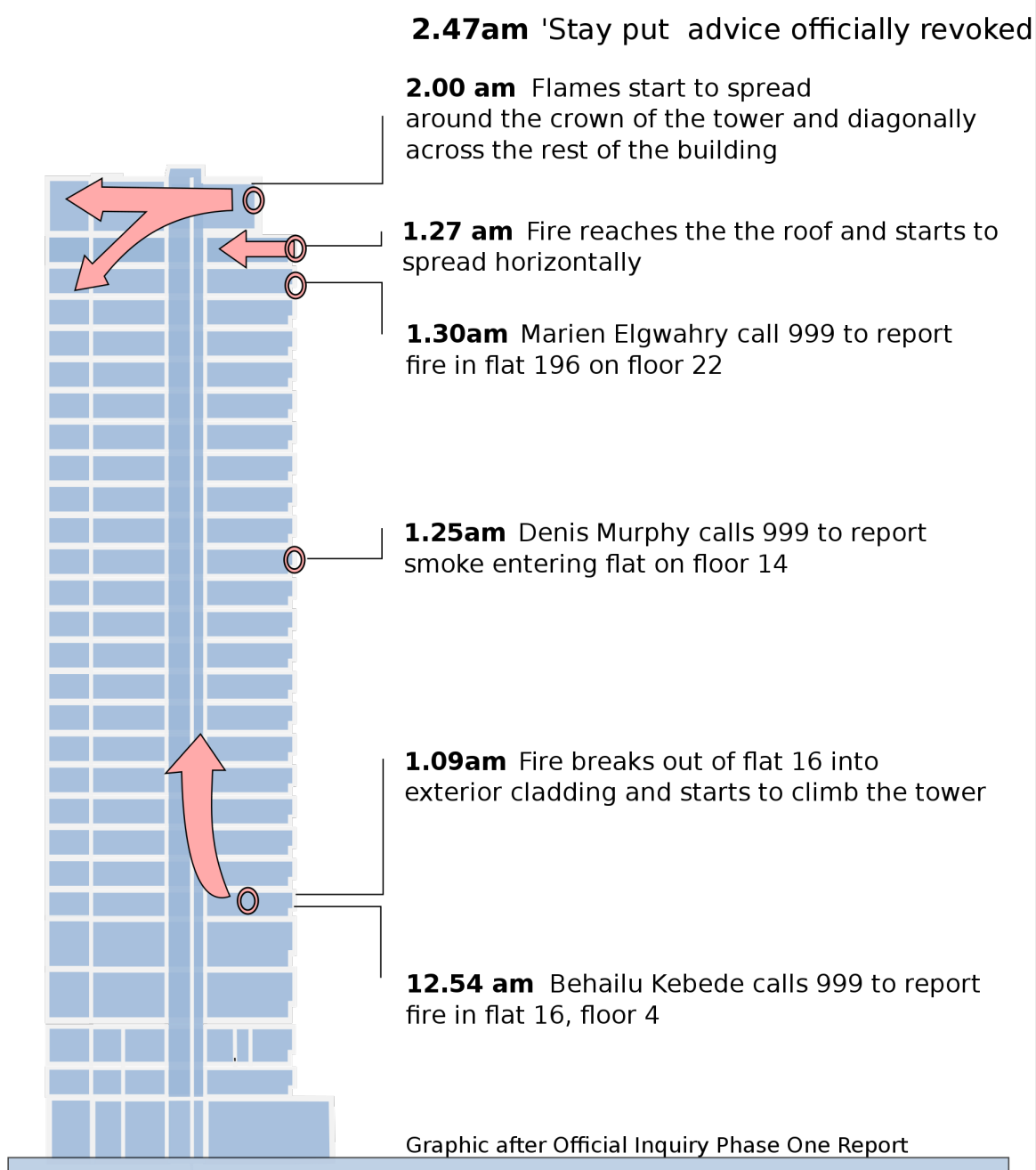
Q: *Would you agree that you were well aware that the certificate was fundamentally misleading on this key aspect of suitability for use over 18 metres, and that Kingspan would almost certainly be challenged on it?*

A: *Reading that, I would say yes.*

Nevertheless, once Kingspan obtained this certificate in 2009, it stopped large scale testing on K15, continuing to rely instead on the earlier 2005 test on old K15, the "misleading" certification, and what Meredith called "dodgy" marketing materials. Between 2006 and 2015, in other words, there was not a single successful large scale fire test that could be applied to K15. Instead, there were tests on versions of K15 that were not actually the product being sold in the market, tests on the facer only, and four failed tests that were kept secret until the Inquiry.

6. Kingspan annual operating profit: 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020
(Millions of Euros): 145 194 237 157 63 67 91 105 116 142 247 328 362 423 475 485

Grenfell Tower fire: how it spread



05

Part of Grenfell Tower, as seen from near Notting Hill Methodist Church, London, on June 16, 2017.

Photo by Flickr user ChiralJon, [CC BY 2.0](#), via Wikimedia Commons.

Large Scale Testing in 2014-2015

Despite its use in hundreds of high rises, from 2006 until 2015, there was no test evidence that supported the use of K15 in the over 18m market.

Kingspan resumed large scale testing of K15 in 2014, as the LABC certificate had lapsed and questions were being raised by the NHBC (National Home Building Council, the UK's largest provider of new home warranties) and others about K15's applicability for buildings over 18 metres. Kingspan conducted two large scale BS 8414-2 (for steel structures) tests with K15 in 2014 that failed.

Kingspan's third test in July 2014 with K15 passed, although it was revealed in the Inquiry that it had been conducted using a non-standard r&d version of K15 which was manufactured with a different "solstice blown" process and had thicker foil, which, Kingspan felt, "was adding to the success of the test." No solstice blown K15 was ever produced for the market, and this trial product was "never intended to be the same as the product that was being supplied," according to testimony. A BS 8414-2 test done in December 2014 by a third party also failed to meet the standard.

As with the failed tests in 2007 and 2008, these failed tests in 2014 were not disclosed until the Inquiry. **Nor was the fact that the test with K15 that passed had been conducted using an altered version of K15. Tony Millichap, Kingspan's Head of Technical from 2010-2015, testified that it was widely known within Kingspan that this test was on a trial product,**

As with the failed tests in 2007 and 2008, these failed tests in 2014 were not disclosed until the Inquiry.

yet it was used to promote and encourage K15 sales. The test report for the product simply says K15, with no mention that the tested version was modified, and this test was not withdrawn by Kingspan until October 23, 2020, just days before the Inquiry began its second module, during which Kingspan was scheduled to testify as the Inquiry began to investigate the way in which products intended for use in the construction industry are manufactured, tested and sold, and in particular the way in which the materials that were used on the cladding of Grenfell Tower were presented to the market.

None of this information about the 2014-2015 tests was revealed by Kingspan to customers or the certification and testing organizations until the Inquiry repeatedly requested this information in 2019 and 2020.

In fact, Pargeter's testimony reviewing his

own witness statement continues to include incomplete information:

Q: [Reading from the a list of tests in Pargeter's witness statement] "As at the Supply Date, Kingspan had commissioned BS 8414 test and classification reports for the following BS 8414 tests of systems incorporating K15."

We looked at (a) earlier, that's the 2005 test, and if you go over the page [KIN00000494/13] to subparagraph (c), we can see that there's the July test; yes?

Pargeter: Yes.

Q: That's the July 2014 test, and it's described there as:

"BS 8414 Part 2:2005 Test on a Kingspan K15 insulated system with a ventilated Terracotta tile rainscreen (Test Report Number 297099). The system included K15 with a Taylor Maxwell Standard Classico rainscreen." You then go on to say in paragraph 4.14, just below "The test results at (a) and (c) demonstrated that these rainscreen cladding systems incorporating K15 achieved compliance with BR 135 and therefore Option B in paragraph 3.3(b) above." Now, option B, just to clarify for everybody else's benefit, is the alternative route to compliance using BS 8414 to BR135 criteria, isn't it?

Pargeter: Correct.

Q: Yes. Now, in fact, as I think you now accept by way of appendix B of your fourth witness statement, signed in November this year [2020], your reference to K15 in paragraph 4.13 and 4.14 here of your first witness statement are misleading so far as concerns this test, because the K15 tested was not the K15 being sold and not the same as the one tested in 2005.

Pargeter: That's correct.

Q: Can you explain why your first statement give such a misleading impression in that respect?

Pargeter: I think I was just trying to answer the question about what was available for information at the time of the fire, and that's what that was, that's what it said, and that's what it referred to.

Q: Did you know, as I think you did, when you signed this first statement that the BS 8414 test done in July 2014 was on a research and development product and not K15 as sold?

Pargeter: Yes, I think we knew then, yes.

Q: So why didn't you make it clear, instead of leading the reader to believe that there were three tests, including the one in July 2014, on K15 as sold which had passed an 8414 test?

Pargeter: Like I say, I was just trying to represent what was in circulation at the time.

Q: Indeed, Mr Pargeter, and what was in circulation at the time indeed suggested that K15 as sold had passed a BS 8414-2 test in July 2014.

Pargeter: That's correct.

Q: And this witness statement simply perpetuates that misleading impression without correcting it.

Pargeter: It wasn't my intention to perpetuate it.

Q: But it does, doesn't it?

Pargeter: Potentially.

Q: Well, actually, it does, doesn't it?

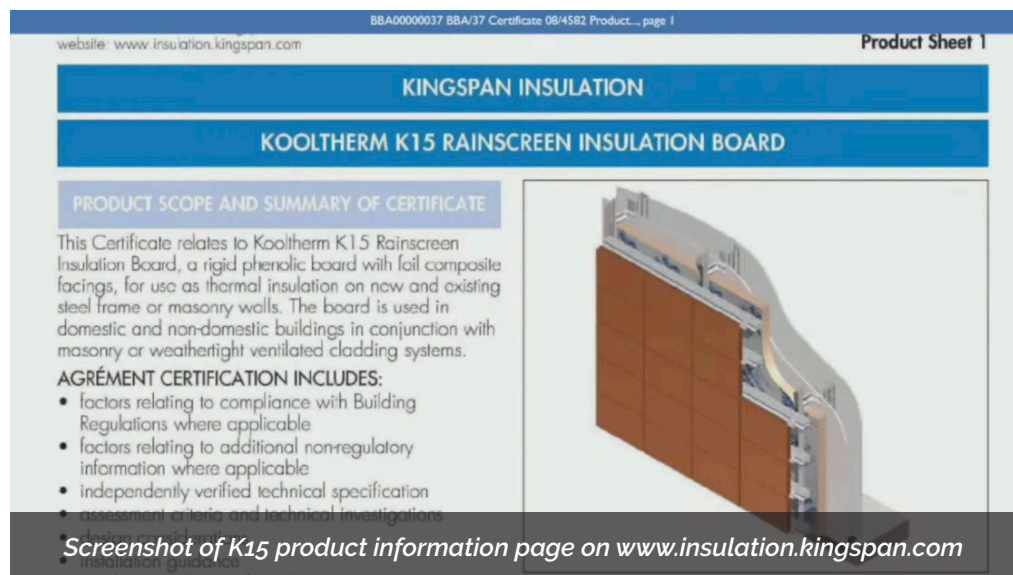
Pargeter: It wasn't my intention.

Q: But it does, doesn't it?

Pargeter: Yes.



Adrian Pargeter, Head of Technical and Marketing for Kingspan Insulation Great Britain, testifies before the Grenfell Tower Inquiry in December 2020.



Marketing and Technical Literature

For years, Kingspan also issued misleading marketing literature and advice (“letters of suitability”) to builders to use K15 in configurations for which it was never tested, and in some cases, for which it had failed tests.

Beyond the core problem of the continued reliance on a 2005 large scale test which had been conducted using a different version of K15, these large scale tests are only applicable for the exact items and configuration in the assembly as tested. Here is testimony from Adrian Pargeter, Head of Technical, discussing the description of the tested assembly in Kingspan's marketing materials.

Q: I would suggest that Kingspan deliberately described the system tested as using non-combustible cladding so that they could say that the test applied to any non-combustible cladding system, as opposed only specifically to the boards, whether they were fibre or particle, used in the test.

Pargeter: I think historically that seems to be the evidence that we've seen, yes.

Q: Do you accept that Kingspan's product literature for K15 throughout the entire period from May 2007, before your time, to July 2016, well into your time, makes no reference at all to the specific material used as the outer cladding in the May 2005 test?

Pargeter: That's correct.

Although the results and application of the BS

8414 tests were limited to the exact cladding and assembly that had been tested, Kingspan described the cladding that K15 could be used with as a “non-combustible substrate” in technical bulletins and marketing literature from 2007 to 2016. Pargeter was asked about this in the Inquiry:

Q: ... would you have been aware or were you aware at the time that any error in the description of the precise components of the build-up of the full - scale system as tested would be of fundamental importance, because otherwise if a designer sought to replicate the system said to have been tested, they wouldn't be doing so?

Pargeter: Yes, I would agree with that.

Q: Therefore, your statement about Kingspan recording the cladding or telling the clients that the cladding system was simply non-combustible would go against the very nature of BS 8414, because you would need to be able to identify the precise system components so that they could be replicated by the customer; would you agree with that?

Pargeter: Yes, I would agree with that.

Some marketing literature even included photos of aluminum structures, similar to those with which the K15 had failed all four tests in 2007-2008, and some Kingspan marketing literature refers to the K15 product itself as having met the standard, even though the test is only applicable for the entire assembly. For example, in its K15 marketing literature from 2007, Kingspan includes a photo of a steel framed system, even though K15 had never been successfully tested with such a system. Kingspan says of this new version of K15 "Successfully tested- Kingspan Kooltherm K15... does not contribute to fire propagation/spread within a cladding system."

In its K15 marketing literature from 2007, Kingspan includes a photo of a steel framed system, even though K15 had never been successfully tested with such a system.

In literature from November 2008, just after four failed BS 8414-2 tests on steel frame systems, Kingspan continued to use the same language and the same photo of K15 with a steel framed system. It doesn't state that the 2005 test was only for masonry, and it does not clarify that the results would not be relevant to any other system other than the one tested. And more fundamentally, of course, it fails to mention that the K15 now on the market is a different product from the one used in the assembly that went through the BS 8414 test cited in the marketing literature.

Heath makes it clear in his witness statement that:

In this period, we did not have a BS 8414-2 test to support this type of system and we were only able to provide evidence of the 2005 BS 8414 (which was a BS 8414-1 test on masonry) Test and suggest that in steel framed systems, a non-combustible substrate should be used to simulate the system tested in 2005.

Indeed, a May 2009 K15 technical bulletin broadens the allowable use to any "non-combustible substrate," written without having conducted any further testing and without consultation with a fire engineer:

This [May 2009 K15] Technical Bulletin details the route to compliance with Approved Document B to the Building Regulations for insulated rainscreen cladding systems fixed to new and existing steel framed or masonry walls...

For buildings of 18 metres or more in height, as Kingspan Kooltherm K15 ... meets the BR 135 performance criteria when tested to BS 8414-1:2002 with horizontal cavity barriers ...

Kingspan Kooltherm K15 ... complies with the requirements of Approved Document B if installed on the cold side of a non-combustible substrate i. e. calcium silicate board or masonry and the maximum vertical distance between cavity barriers is 3.5 metres."

Kingspan also supplied letters of suitability to projects that were considering the use of K15, indicating that K15 could be used in configurations for which it was never tested, and in some cases, for which it had failed tests.

The Inquiry reviews some of these letters, such as this February 2014 email from Adam Heath, currently Kingspan's Regulatory Affairs Manager for Fire. At this time, the only successful large scale test was the 2005 test [albeit on the earlier version of K15]. Adam Heath is providing a response to other Kingspan employees inquiring about a proposed construction project:

Having looked over the specification attached, the product we would look to put forward is Kooltherm K15... The Kooltherm K15 boards are designed for use as external thermal insulation on new and existing steel frame and masonry walls...

...As a result of this, Kingspan Insulation Limited undertook large scale façade fire tests meeting the performance criteria given in BR 135, using full scale test data from BS 8414 for the Kooltherm K15. [emphasis added]

Compliance with this regulatory standard clearly demonstrated the excellent characteristics of the Kooltherm K15 boards. Under section B.2 of the enclosed third party British Board of Agreement (BBA) approval certificate for Kooltherm K15, the construction build up

that was tested is listed. Considering this tested build up, we would look to advice the use of a non-combustible building board in substitution of the 12mm cement particle board behind the Kooltherm K15 boards.

Despite the assertion in the letter about tests [in the plural] having met the performance criteria in BR 135, there were no such successful large scale tests at this time that had used the K15 being sold on the market, only the 2005 test.

The Inquiry documented Kingspan emails and letters of suitability from 2014 and 2015 recommending the use of K15 on high rise buildings with ACM panels with PE cores, despite the fact that K15 had not been successfully tested under a BS 8414-2 test for steel frames.

For example, in 2014, by which time there had not been a single successful large scale 8414 test using the K15 on the market, Dan Ball (still a Kingspan Technical Service Project Lead) affirmed that a proposed build-up for a 61 meter tall building (with a habitable space 18 metres or more above ground level) with ACM (Aluminum Composite Metal) panels with a PE (polyethylene) core is:

*suitable to include K15. Kingspan Insulation Limited have a comprehensive bank of third party accreditation/LABC registered details and **successful testing to both BS 8414-1 and BS 8414-2** [emphasis added]. As discussed documentation relating to BS8414-2 is with the testing facility... In order for things to progress Kingspan Insulation Limited would like for you to take this letter as confirmation that Kooltherm K15 has been specified correctly and the façade build ups of this project follow suit with the requirements of approved document B's alternative compliance route and therefore Kingspan Insulation Limited's test regime carried out at the BRE.*

Adrian Pargeter is asked about this in testimony:

Q: This letter is a straightforward and clear confirmation, I would suggest, of correct specification and compliance of the particular external façade build-up by Kingspan, isn't it ?

Pargeter: (Pause) It appears that way, yes.

Q: It's right, isn't it, that the K15 which is actually going to go into the structure at Pendleton Spruce Court had not in fact been successfully tested under BS 8414?

Q: It's right, isn't it, that the K15 which is actually going to go into the structure at Pendleton Spruce Court had not in fact been successfully tested under BS 8414?

Pargeter: (Pause) Yes, that's correct.

Pargeter: (Pause) Yes, that's correct.

Q: And therefore this letter was misleading.
(Pause)

Pargeter: I would agree.

In fact, Kingspan's 2015 K15 "Routes to Compliance" marketing document cites several case studies that use ACM (aluminum composite) cladding and facades, including Pendleton Court, despite the fact that there had been no successful test of the K15 on the market for that use.

In another example, in 2011, Andrew Pack (currently Kingspan's Global Technical Support Manager) wrote to a British building consultant with regard to its proposed use of K15 in a large residential project in Qatar:

...We have tested to BS 476 Part 6 and Part 7 and successfully passed the tests to enable the Class 0 fire rating for Kooltherm K15 Rainscreen Board...

*Kooltherm K15 Rainscreen Board carries third party British Board of Agreement (BBA) Approval Certificate No. 08/4582, for use as an external thermal insulation on new and existing masonry **or steel frame walls** [emphasis added] used in domestic and non-domestic buildings in conjunction with masonry or weathertight ventilated cladding systems...*

Alongside the BBA Approval the Kooltherm K15 Rainscreen Boards were the first insulation boards to achieve Local Authority Building Control (LABC) System Approval as a thermal insulation layer in rainscreen

cladding systems. An LABC System Approval can significantly reduce the time and costs associated with a construction project. **As part of this Approval Kingspan Insulation Limited undertook large scale fire tests meeting the performance criteria given in BRE Report Fire performance of external thermal insulation for walls of multi storey buildings (BR 135) for cladding systems using full scale test data from BS 8414-1:2002 and BS 8414-2:2005** *[emphasis added]*.

As Dan Ball did in the example above from 2014, Andrew Pack refers to successful tests to both 8414-1 (masonry) and 8414-2 (steel frame), but there was not a single successful test on any system that used the actual K15 that was for sale at the time.

Pack is asked about this during the Inquiry:

Q: *Instead, as has been pointed out, you refer to tests in the plural to BS 8414, and you specifically refer to tests carried out to BS 8414-2. There is nothing there about an alternative method of somehow passing part 2 by testing to part 1 and putting in a non-combustible liner, is there?*

Pack: *Not in this email. Obviously, again, this is a snapshot of some text. What we don't know behind this is what the construction is.*

Q: *No, sure, and we could spend a long time talking about that, but in plain and simple terms, what you have written here, that tests in the plural have been carried out and that those include tests to BS 8414-2, is not true, is it? It's not accurate?*

Pack: *Correct.*

In yet another email exchange, this one from April 2016, Pargeter is asked by MD Insurance Services for access to its database of test results to confirm that the build-ups for high rises for which it was providing warranties met the Building Regulations. Pargeter provides the July 2014 test result, which was revealed in the Inquiry to have been a test that had used a non-standard version of K15 different from that being sold on the market, as well as the BBA certificate.

In 2014, industry guidance added another route to compliance as an alternative to either using non-combustible materials (which K15 was not) or undertaking a system test under BS 8414-
- desktop studies ("assessments in lieu of fire testing"). The Inquiry documents how Kingspan used data from the 2005 old version test to conduct desktop studies as well as how the data

from the March 2014 BS 8414-2 test was used in at least 29 desktop studies for high rise building projects, including those with ACM cladding. This data was provided without any mention that this March 2014 test had failed to meet the BR 135 standard -- it had to be terminated early because of flames spreading above the test apparatus.



Photo by Flickr user ChiralJon, [CC BY 2.0](#), via Wikimedia Commons.

Grenfell Tower two days after the fire broke out.

07



GRENfell
FOREVER IN
OUR HEARTS

The topping out of protective sheeting and scaffolding at Grenfell Tower took place in time for the 1-year anniversary of the Grenfell Tower Fire.

Photo by Carcharoth, [CC BY-SA 4.0](https://commons.wikimedia.org/wiki/File:Grenfell_Tower_topping_out_2017.jpg), via Wikimedia Commons.

Concerns Raised and Kingspan's Response

We have already seen that when the BBA, an organization that provides fire safety certificates, had raised concerns about fire safety and K15 in December 2008, Kingspan's Technical Services Manager, Philip Heath, told his team not to respond and to "let the file gather dust guys."

Also in 2008, when Bowmer and Kirkland (a major contractor) asked its façade engineering consultant, Wintech, about the use of K15 in one of its projects, Wintech replied:

"Kingspan keeps repeating that the product has been tested to BS8414 and therefore is suitable for use in buildings over 18 metres. What they fail to say is that it is suitable for use only in the configuration as tested i.e. with cavity barriers and a cement board outer face... The rainscreen system being installed at City park (and to the hotel development next door!)... has no resemblance to the tested sample and therefore, test data is not relevant."

Rocheffort is asked during his testimony about Wintech's concerns:

Q: Did you accept at the time that Wintech's concerns were valid ones to be raising?

Rocheffort: I think that they'd obviously convinced me and presumably Peter Wilson

[Member of Kingspan's Board of Directors and Head of the Insulated Panels Division at the time] in the meeting and I see Mark Harris [currently Kingspan's Divisional Technical Director for Insulated Panels] I think was also involved in the meeting, that they were serious concerns. So I think possibly prior to this they might have been seen as causing trouble, a bit of an irritant, rather than anything else. I think following this meeting, we could see that they're serious, see that they've got a valid point, and therefore we need to be working on it.

When those concerns were raised with Kingspan, however, Philip Heath emailed a friend in October 2008 that **"I think Bowmer & Kirkland [multi-national blue chip main contractor] are getting me confused with someone who gives a dam. I'm trying to think of a way out of this one, imagine a fire running up this tower. !!!!!!!!!!!!!!!!!!!!!!! Any ideas?"** [emphasis added].

Although Heath agrees in his 2020 testimony that

Kingspan had no relevant test evidence to support the use of K15 on that system, he replies to his team in 2008:

Wintech can go f#ck themselves, and if they're not careful, we'll sue the a#se [off] them.

Heath said that he had never been investigated, disciplined, or even spoken to by anyone at Kingspan about his actions or about "whether the testing and marketing of that product was appropriate during the time you were responsible for that."

In his testimony on November 26, 2020, Heath said that he is working for Kingspan

now in a global based position. I really have very little to do with the U.K. market now. It's mainly concentrated in the U.S., identifying business opportunities, key account potentials and also looking at vertical integration of businesses into Kingspan and highlighting potential opportunities in that respect.

And

I have been involved in the launch of K15 in North America.⁷

A November 2018 PR newswire release from Kingspan Insulation US quotes Andrew Wilson, Commercial Manager, Kooltherm and OPTIM-R, Kingspan Insulation North America: "Attendees of the [2018] World of Façades North America conference will see real-world examples of how Kingspan's Kooltherm K15 is well-suited for the construction sustainable facades with its excellent fire performance properties since it meets NFPA 285.

In testimony, Meredith is asked about how Kingspan dealt with enquiries from customers.

In 2008, Simon Hepworth of Astec Projects, for example, emails Meredith and Gareth Mills about its Grosvenor Waterside project in London (with the subject "K15 combustibility" and with cc's to Philip Heath and others):

Gareth, I appreciate response, however as far as I can see the BRE cert does not cover the testing of K15 and Trespa [cladding panels] to BR 135 and hence does nothing to back-up your statement that K15 is suitable for use over 18 metres. This is very concerning.

Meredith is questioned during the Inquiry about Astec's concerns:

Q: You have got no large scale fire test data

using that Trespa cladding panel?

Meredith: No

Q: We can see that you then respond to Simon Hepworth with a long email. In essence you're still recommending K15 for the Grosvenor Waterside project. So you say

We believe we have everything required to satisfy Building Control on the above mentioned project. Please refer to text below and attached test report for further confirmation in respect of your questions.

“Kingspan's Kooltherm K15 is well-suited for the construction sustainable facades with its excellent fire performance properties since it meets NFPA 285.”

– From a November 2018 PR Newswire release from Kingspan Insulation US

Q: And on what basis did you form the belief that you had everything required to satisfy building control on a project which involved Trespa, and this was a steel structure?

Meredith: We had obviously tested with a non-combustible layer in front of our insulant, a 6-mil one, and we'd looked—I think we'd looked at the Trespa FR data. I can't recollect what it is now, but we were being optimistic here that we had the correct information, definitely.

Q: When you say optimistic, you didn't have the right information to be able to make that recommendation, did you?

7. Introduced into that market in July 2018, one year after the Grenfell fire.

Q: But you also knew, more fundamentally, by this point that the K15 that's being sold performs even worse in a test situation than the old K15 in that 2005 report, didn't you?

Meredith: Yes, that's correct.

Meredith: Well, we are... I don't believe Kingspan ever took complete responsibility for these build-ups, we would always present our information as: "This is what we have and we would recommend that you seek support from the other component suppliers."

Q: But we do see again and again and again Kingspan saying that K15 is suitable for projects over 18 metres. That was said, wasn't it?

Meredith: Yes

Q: Time and time again, on many buildings?

Meredith: Yes. That's—and that was our -- that was our presented belief, yes.

Q: In the next paragraph down, you say: "Kingspan Insulation Limited recommend when using K15 above 18 metres that horizontal fire barriers are adopted at every intermediate floor level. This information has been deduced following the guidance in BR 135 and via testing to BS 8414 (see attached reports). We have attached our BS 8414 test report which most closely represents the system proposed on the above-mentioned project."

Now, when you're referring there to reports in the plural, and attaching the report which most closely represents, you only had one report at that point, didn't you? It was the 2005 --

Meredith: Yeah, and had I not sent the class 0 test reports with this as well?

Q: But the class 0 test reports wouldn't be relevant to above 18 metres, would they?

Meredith: No, not at all, but they would be part of our standard offering to demonstrate the fire performance of K15.

Q: Yes. But you also knew, more fundamentally, by this point that the K15 that's being sold performs even worse in a test situation than the old K15 in that 2005 report, didn't you?

Meredith: Yes, that was correct.

Q: Would you agree that this is actively misleading to the customer who is enquiring about the product?

Meredith: Yes, that's the case.

Q: Then a little bit further down on that, it's about halfway down through line 10 on that page, there's a paragraph beginning: "Kingspan Insulation Limited tested the Kooltherm K15 onto a non combustible substrate with particle board cladding system." Do you see that there?

Meredith: Yes.

Q: It's right, isn't it, that you're using the term non-combustible substrate rather than saying it was masonry because you didn't want to point out the reality of the situation that any test data you did have could only apply to a masonry structure; that's right, isn't it?

Meredith: We're trying to expand the scope of that test, yes.

Q: Yes, you're not being precise as to what it was tested on?

Meredith: No.

Q: ...Then you go on, so at the bottom of that page we can see a paragraph beginning:

As the tested system details the performance of Kooltherm K15 when used onto a non combustible substrate with a Class 0 cladding product we believe this is representational of the construction at i.e. a Class 0 cladding system (Trespa FR) with a high performance phenolic insulation (K15) fixed onto a non combustible steel frame sheathing. Based on the enclosed data Kingspan Insulation Ltd are confident that the product is suitable for use above 18metres as

long as fire barriers are adopted at the intermediate floor levels. However as with all alternative methods of compliance the final approval always needs to come from Building Control.

Q: Now, the reality is, isn't it, that far from being confident, you were wholly unsure of how K15 would behave with a Trespa panel? You couldn't have had any knowledge of how that was going to play out, could you?

Meredith: (Pause) At this time, we'd had no experience, I don't think, of the Trespa panel in an 8414 test so-- No. You know, we were, like I say, being optimistic with our suggestions here. Yes. But at the end of the day, we're saying that, "This is our point of view, you need to seek advice from building control or the appropriate approval body".

Q: Yes, but you're confidently saying, as the manufacturer, that the product is suitable for use above 18 metres in that specific system.

Meredith: Yeah, I --

Q: You can't get away from that, can you?

Meredith: Yes, I see that.

Q: Any test to support the use of that system would have to be to BS 8414-2, wouldn't it, because this was a steel frame structure?

Meredith: (Pause). If you had to do a full large scale test it would have to be to part 2, yes.

Q: Yes, and we know, don't we, that when Kingspan did test with a Trespa FR panel in January 2014, the test was a fail? Isn't that right?

Meredith: Yes, that's correct.

Kingspan's letter to Astec continues:

Kingspan Kooltherm K15 rainscreen insulation has been used on many high rise projects and is slowly becoming a household name in this marketplace...

Further to your question in respect of compliance we must highlight again that although we understand the information we are providing has allowed specification and use of our product on other high rise projects the final approval needs to come from Building Control. However we are confident that once the full information has been reviewed continued usage should not be an issue.

The inquiry:

Q: Just to be clear, there existed no test data which could support the use of K15 in this build-up, did there?

Meredith: This was the Trespa FR construction, wasn't it?

Q: Yes, on a steel frame.

Meredith: No direct test data, no.

Q: Your response is sent on to Wintech for comment, and Steve Lee of Wintech responds to Simon Hepworth on 1 October:

We've had a look at the BRE document, but it is referring to the test that is not recognised as being a cover all, in short what they have tested is not what we've got on the job and BRE will not give approval on a generic detail. As we've spoken about before they will only certify on a job to job basis. While I would not disagree with what Ivor is saying, BRE need to certify the material or the building control officer needs to pass it. I hate to be so negative, but there's a awful lot riding on this decision and as we've stated we're not Fire engineering specialists.

Q: Do you see that there? All of that was correct, wasn't it. Wintech were entirely right to point out that the BRE document couldn't cover all and certainly couldn't cover what they've got on their job?

Meredith: Yeah, that document was not a cover-all. Although it was desired to be, it didn't.

Q: Yes.

This email chain is followed by an October 29 2008 letter about the same project from Heath back to Simon Hepworth at Astec Projects. Heath writes:

As you will appreciate, it is not practically or financially feasible for a component manufacturer, such as Kingspan Insulation, to test in accordance with BS8414 with every rainscreen cladding material and component currently available.

However, tests undertaken by ourselves, with and without a generic cladding system, showed the requirements of BR135 via BS8414 test method were achieved. The comparison with and without a cladding system was important to determine the influence of a ventilated cavity on the external face of the Kooltherm, the results

confirmed there was little or no difference.

The inquiry:

Q: Again, is it right that the only test he could be referring to there is the 2005 test?

Meredith: And the naked test [an earlier 2004 test].

Q: And the naked test, yes. If we go over the page to the first paragraph, it says there at the top:

Based on above route to compliance, together with British Board of Agrément approval [that's the original BBA certificate from 2008] ... Kingspan Insulation Limited can confirm the product is fit for the intended purpose and is suitable for your development.

Q: Yet, as you have accepted, there was no test data that would support the use of K15 with a Trespa system on a steel framed--

Meredith: There was no direct test data, no.

Q: It's right, isn't it, that this assurance that Kingspan confirmed the product is fit for purpose and suitable for your development was given in many, many cases by Kingspan, wasn't it?

Meredith: It was standard terminology.

Q: Yes, and there were hundreds, if not thousands, of enquiries in which something similar was said; that's right, isn't it?

Meredith: I would say so, yes.

Q: And it would lead, that wording would lead many designers and architects to believe that they had completed their due

diligence in getting written confirmation from the manufacturer about the suitability of the product, didn't it?

Meredith: The tricky thing is here that the product is only suitable if all the components around it are suitable. So ... sorry, could you rephrase the question?

Q: Well, yes. I mean, in this letter, for this letter, you shouldn't have been advising this at all. The furthest you could have gone is to say "This was our build-up, your build - up is different, we don't think you can use it but it's a matter for you". You could have said that, couldn't you?

Meredith: That would have been a less positive letter, definitely, yeah.

Q: Yes, less positive for Kingspan's commercial sales?

Meredith: Yes.

Q: And that was the sole consideration at this time, wasn't it?

Meredith: That was the goal of the business.

Q: Yes, and not even this time; throughout the period you worked at Kingspan, that's right, isn't it?

Meredith: Yes, certainly.

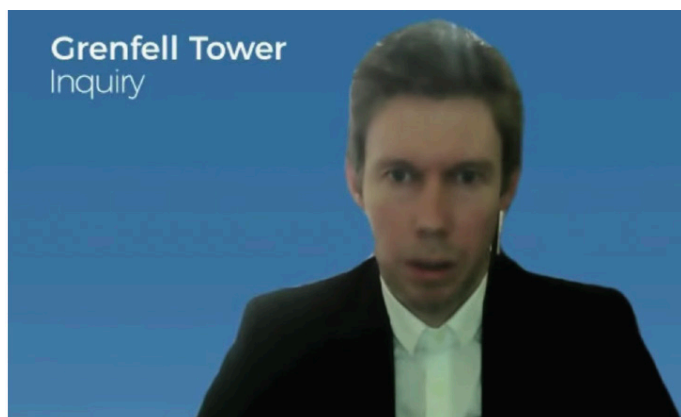
Q: Now, I've taken you to those examples and it's swept up a number of projects there, but it's one of many others where similar advice was given. You accept that, yes?

Meredith: Yes, definitely.

In August 2007, a Kingspan employee, Alistair Lambie, sends an internal email to Andrew Pack: "Andy, the suitability of K15 in a ventilated cavity over 18 metres is being questioned more and more in Scotland. Can you forward all the relevant fire assessments/certificates/documents to the architect below and to myself..."

Meredith sends a response to Lambie and Pack:

Alistair, we are a little reluctant to go public with the actual test information at this moment as this is only to BS 8414-1 and I suspect this job would be a BS 8414-2 project. At the moment I'm doing vast amounts of work to produce a very robust situation where Kooltherm K15 can be used on all substrates and with most generic types of cladding... Until then most projects are dealt with on a job for job basis as



Kingspan Global Technical Support Manager Andrew Pack testifies before the Grenfell Tower Inquiry in February 2021.

although K15 is suitable the surrounding cladding may mean that you can't use K15... that's the last thing we want to tell our customers so if you can get the following information I will write a letter specifically for this job that hopefully provides enough confidence in our product... "When [you're] next in come and have a chat and I will show you what I can present if the jobs big enuf... fortunately 9 times out of 10 they accept our word."

Meredith is asked about this during his testimony:

Q: *It's right, isn't it, that letters of suitability were being written by Kingspan on a project by project basis long before September 2008. Do you accept that?*

Meredith: *Yes*

Q: *How often were those being written and who was writing them?*

Meredith: *It was predominantly the senior technical advisers, myself, sometimes Andrew Pack, Gareth Mills, Joel Clarke, maybe Adam Heath.*

Meredith, in his testimony, says that Kingspan was "being bombarded by queries of this nature" [regarding the use of K15 over 18 metres] by 2013-2015.

In November 2013, Astec Projects emailed Kingspan about its concerns with using K15 in a 15-story residential project it was planning in London:

Your email would indicate it is still Kingspan's view that K15 is fit-for-purpose over 18m. Is this the case? You have talked about non-combustible substrates yet the main points of contention with regard to your 8414 testing is that it was based on block work substrate not [steel -framed structure] with a sealed cementitious outer cladding. Neither of these conditions even remotely resemble what the proposed construction is here and you know it is the BRE's view that the use of K15 should not be specified on the basis of those test results.

Further, the project in question is for the same client, who are using the same consultants as our Riverlight project , where the substantiation of K15 use still remains unresolved after many months of extremely difficult negotiations. Kingspan seem to have lost interest in this issue pending results of the upcoming 8414-2 test. This has not gone unnoticed by the building developer.

I realise a lot hinges on the results of next

week's 8414-2 test, but ask what is Kingspan going to do if it fails? Where does that leave us with Riverlight? What is your position with regard to this should we have to start stripping cladding off an 18 storey building?

This remains the most serious issue on my agenda and despite Mark Swift's assurances it would be yours, we see little evidence of it being so.

With the above in mind we find it incredible you have any comfort in proposing K15 on this project, or in fact any other over 18m. This does, in my mind bring your corporate responsibility into question. You will no doubt take the view that we, as the envelope contractor have to take responsibility for the design and specification of the façade materials and you are simply an insulation supplier, yet here we are with you endorsing your product knowing it is not appropriately tested , with little way of substantiating it is fit for purpose for this project in any way whatsoever.

In fact, in late 2014, Kingspan was notified that a high-rise project in Manchester was actually removing K15 and replacing it with non-combustible mineral wool based on the advice of a fire consultant. Kingspan agreed to issue a £20,000 credit note.

“Until then most projects are dealt with on a job for job basis as although K15 is suitable the surrounding cladding may mean that you can't use K15... that's the last thing we want to tell our customers.”

– From an August 2007 internal Kingspan email

The NHBC Raises Questions

In November 2013, the NHBC, the UK's leading provider of warranties and insurance for new homes, emailed Kingspan (subject: "Kingspan K15 use in a Building Greater than 18m") about a proposed high-rise project with a reinforced concrete frame and lightweight steel frame infill panels.

As far as I can see, only one test in accordance with BR135 was carried out using BS8414:1. As such, the use of K15 as part of any other cladding build-up fixed to the face of a building, or for a cladding system fixed to a structural steel frame (covered by BS8414:2) isn't allowable? Please could you advise if I've interpreted the requirements wrongly?"

The next day, the NHBC writes to Kingspan again:

I, and my managers here at NHBC, would very much like to resolve this issue with you as soon as possible. Could I request that you escalate it to your management team with a view to a meeting early in the new year between both parties?"

Unfortunately, given the number of affected projects that NHBC deals with, we feel that we need to start to advise our customers that K15 doesn't comply with the Building Regulation requirements or the BBA certificate when used on a building in excess of 18m high.

In early 2014, the NHBC continued to raise issues with Kingspan about the wording of the 2013 BBA certificate, asking about the technical basis for the changes, especially about the use of K15 in buildings with a habitable floor over 18 meters. Kingspan had not informed the NHBC, or any of the certifying agencies, that the 2005 test had been conducted on a different version of K15, nor about any of the failed tests (including the one that had been conducted by Kingspan just weeks earlier in early 2014), but the NHBC was nevertheless concerned about Kingspan's expansion of the scope of that test. From a February 24th email to Kingspan:

I think that we established and agreed at our meeting in January- that the K15 insulation product had only been tested



Photo by Carcharoth, [CC BY-SA 4.0](https://commons.wikimedia.org/wiki/File:Grenfell_Tower_under_construction.jpg), via Wikimedia Commons.

Grenfell Tower partially covered in scaffolding and protective wrap in May 2018.

for fire performance to BS 8414 where K15 boards are installed using direct mechanical fixing onto a solid masonry blockwork backing wall.

The NHBC attached a memo, entitled "BBA [certificate] ... Fire Performance of Kingspan K15", which ends:

I hope you can appreciate how important it is for us to understand under what technical basis the changes were made to BBA Cert 08/452. In reading through the new Certificate - it now appears less clear than before in providing key information relating to fire performance in design. We are very much aware that key aspects in fire performance of building products are very important in making correct design decisions for safe construction - particularly of tall residential buildings over 18m high. Where design related information on fire performance is ambiguous, this will increase the possibility of misinterpretation and may create greater risk in terms of the decision making needed to provide adequately designed fire resistant buildings.

Clarification on the above would be much

appreciated as well as any updated information that you can provide on the additional fire performance testing that either has been carried out, or is currently in progress, since our meeting in January.

Kingspan didn't respond to this, but in November 2014, Assent, a building control body in Manchester, sent an email to the NHBC about the use of K15 on high-rises:

The issue seems to be primarily about the use of an appropriate substrate ... as directed in the LABC certificate. This appears, on the face of it, to endorse the use of K15 in certain conditions although it does not comply with the stated requirements of AD:B [UK Building Code] in particular, a material of limited combustibility.

Then there is a response from another Assent employee:

As I understand it Kingspan have a test certificate where it is not combustible when used in conjunction with a non-vented rainscreen cladding. The certificate does not cover the situation where it is used with a vented rainscreen cladding and I have heard that it burns quite readily when it is used in a vented situation. I believe the LABC certificate has been withdrawn now.

On 13 November 2014, this Assent employee, Jane Keeley, forwards the chain of correspondence to John Lewis, a fire safety engineer at the NHBC. She says: "Not had chance to read this yet but this is the one they have withdrawn/are withdrawing?"

John Lewis responds:

It's all garbage. Hereford LABC didn't know what they were talking about. We had a telephone call with LABC Warranty Technical Manager (can't recall his name) at which he stated that they were withdrawing their approval straightaway - that was on 27th October. So I would check it's still valid, if I was you.

...Kingspan have since done at least two tests (I suspect they've done more but have kept the results close to their chests because they performed so badly!) using a steel frame and ventilated rainscreen and there is an issue with ongoing burning. Once the fire source is extinguished, the insulation continues to burn up the cavity and, in one

Q: You didn't know about the K15 having an issue with ongoing burning?

Millchap: No, I was aware K15 could, in some circumstances, have burning after the crib had been extinguished.

case, continued over the cavity barrier and to the top of the test rig. So, it's not clear why the LABC detail states that it's a MOLC [material of limited combustibility] when it clearly isn't.

Tony Millichap, Kingspan's Head of Technical from 2010-2015, is asked about this in testimony:

Q: Is it still your evidence that around this time - - so we're now in late 2013/2014 -- you didn't know about the K15 having an issue with ongoing burning?

Millichap: No, I was aware K15 could, in some circumstances, have burning after the crib had been extinguished.

Q: You were aware of that?

Millichap: Yes.

Q: Then if we go on... that's a screenshot from the LABC certificate that we've just looked at.

He [John Lewis of the NHBC] says this in parenthesis after that screenshot:

(The bit about using a non-combustible lining board instead of a masonry backing on a steel framed wall has since proved not to be correct. These words were Kingspan's - they assumed that it would perform the same but, when they did the tests, it was found that it performed far worse).

Q: Now, that's entirely correct, isn't it? The advice to use a non-combustible backing

board on steel-framed structures came from Kingspan originally, didn't it?

Millichap: Yes

Q: *Is it right that that was to try and mask the fact that no successful test to BS 8414-2 on a steel-frame structure had been carried out on any system incorporating K15?*

Millichap: No, it wasn't there to try to hide anything. It was there as – it was a strong opinion of Ivor's that the part 2 test [steel with that board in place would perform similarly to the part 1 [masonry] test.

Q: *So that was Ivor's opinion; was it based on anything else?*

Millichap: *It was based on the fact that a test had never failed via the burn-through criteria.*

Q: *I see. So taking just one criteria from BR 135, that was the basis on which that assessment was made, was it?*

Millichap: *That was Ivor's opinion, yes.*

In the next paragraph, the NHBC says this:

It's all an accident waiting to happen and we're meeting with all the PIR manufacturers to try and get something sorted. But, in the meantime, they continue to state that it's fine and most BCBs [building control bodies] accept that at face value without sifting through the details

In fact, NHBC, still without even knowing that the test Kingspan was relying on had used an older version of K15, was nevertheless going to communicate with builders in early 2015 that K15 could only be used above 18 metres in the exact 2005 BS 8414-1 tested configuration and was going to refuse to warrant any other configurations.

NHBC stated its concerns clearly in its email:

Fire will affect the K15 insulation board as it was shown to be combustible as burning continued. Both fires lasted significantly over 30 minutes and, in the case of Report 293940, the test was deemed to have ended (in our view, failed) at 43:00 minutes due to flaming above the test rig at 6.5m.

NHBC's letter October 2014 letter to Kingspan concludes:

NHBC have technically engaged in discussions with Kingspan on this issue since 2013. In an e-mail sent to us in Dec 2013 from Ivor Meredith we were requested to hold off on advising NHBC customers until opportunity was provided to sit down and go through the body of evidence that could lead to an agreed alternative method of compliance with Kingspan. A significant period of time has now been allowed for this by NHBC. We had a reasonable expectation that you would provide a pro-active method statement at Wednesday's conference call detailing exactly how Kingspan intended to resolve the above matters, but disappointingly that did not occur which I'm sure you will appreciate now introduces a very difficult position that cannot be left unresolved. We have now been informed that a recognised expert in Fire Engineering Consultancy has indicated that they cannot positively review the K15 product fire performance data. This has understandably given NHBC cause for real concern as we were assured quite some time ago that an independent expert's review would be undertaken. We will now review all aspects of this matter and advise you in due course of the actions we intend to take. Should you wish to provide us with any additional information in the interim we would be pleased to review.

Then, in February 2015, over a year after the NHBC first began raising this issue with Kingspan and after 8 months of waiting for a response, the

“We have now been informed that a recognised expert in Fire Engineering Consultancy has indicated that they cannot positively review the K15 product fire performance data.”

– October 2014 NHBC letter to Kingspan

NHBC's operations director writes to Millichap, copied to Kingspan CEO Gene Murtagh, "in the hope that he can assist."

Kingspan market K15 Rainscreen Board with the claim that 'it has been successfully tested to BS 8414: 2002, and can meet the criteria within BR135, which makes it acceptable for use above 18m.' This wording appears on the front page of the K15 product literature dated March 2011 which is on your website.

Being aware that the current BBA certificate for the K15 product, dated December 2013, does not provide the necessary evidence to fully support this claim, we have been requesting evidence from Kingspan, since early 2014.

We are disappointed that despite commitments from Kingspan to engage Fire Engineer expertise or carry out substantial additional testing to demonstrate that alternative typical wall build-ups are acceptable to BR 135, to date none of this has come to fruition and no evidence has been provided to us that demonstrates that K15 can be used in facades over 18.0m in any other configuration than that detailed in the current BBA Certificate.

The absence of evidence from Kingspan means we will soon be faced with having to decline to accept buildings which are currently under construction and have specified the K15 product in facades above 18.0m *[emphasis added]*, for risk management purposes as a provider of defects liability insurance and in many cases also as the approved inspector, unless the builders concerned can provide evidence themselves in accordance with BCA Guidance Note 18 - Use of Combustible Cladding Materials on Residential Buildings (copy enclosed).

The absence of evidence also means we now have to advise builders registering new developments with us that if they specify the K15 product for use in facades above 18.0m, they will have to provide this evidence themselves in accordance with BCA Guidance Note 18. We are preparing our communications plan and intend informing our builder customers of our concerns at the earliest opportunity,

[emphasis added] however for your information this will not be within the next 14 days.

We had hoped that this action could have been avoided by the provision of additional technical evaluation and/or test evidence, as promised to us during our discussions.

Millichap replies to the NHBC on February 3, 2015:

*Firstly it is important to reiterate Kingspan continue to support Kooltherm K15 as fit for purpose in its intended application. The importance of the product is not underestimated by Kingspan this being underlined by your comment **the product is currently specified in excess of 400 projects** [emphasis added] to NHBC's knowledge. Similarly we are aware of its intended use and where consulted provide very significant resource in supporting each and every project team to help demonstrate suitability.*

As discussed today our test programme with BRE continues unabated, our aim is to where practical establish outer limits of some of the test variables to allow better interpretation against specific projects. ... This includes three successful BS8414 tests, one onto a masonry substrate (Part 1), a combustible and non-combustible cladding system onto a steel frame (BS 8414 part 2)."

Here is Millichap's testimony from the inquiry regarding Kingspan's above statement about the tests:

Q: Now what are the three successful 8414 tests. We know the 8414-1 test is the 2005 test; what were the other two successful tests?

Millichap: This can only be referring to the latter tests in 2014 [March and July].

Q: You're still putting forward March 2014 as a successful test, even though you know by now the BRE and indeed the NHBC are saying it's a fail?"

Millichap: It looks that way, yes.

Q: You're also not revealing here, are you, that those tests had been carried out on research and development products that were different to that that you were selling?

Millichap: That's correct.

Kingspan Responds

On Feb 13, 2015, Kingspan's solicitors, Fenwick Elliot LLP, responded to the NHBC:

Our client's statement that the K15 product "has been successfully tested to BS 8414: 2002, and can meet the criteria within BR135, which makes it acceptable for use above 18m..." remains true and accurate. In support of this, our client relies upon fire tests undertaken. By way of example, we refer you to BRE test reports numbered 220876 and PN297099.

The reports cited above are from the 2005 test, conducted on the version of K15 that Kingspan had removed from the market 9 years earlier, and the July 2014 test on a solstice blown r&d version of K15 that was never intended for the market.

Kingspan never revealed to the NHBC that there were no successful large scale tests using the K15 being sold by Kingspan at the time, nor that there had been a series of failed tests.

Kingspan's lawyers conclude with a threat to sue:

Given what we have said above, it is clear that there is no justification for taking the steps outlined in your letter of 5 February 2015. Taking such steps would cause our client very significant financial loss. They are not properly justifiable from the tests which have been carried out. They would amount to actionable negligent misstatements of the true position. Further, given that any such unjustifiable statements would clearly cause serious harm to our client's business resulting in serious financial loss, they would amount to defamation under the Defamation Act 2013 [emphasis added].

It is our client's position that neither NHBC or the market as a whole will suffer any detriment as a result of our client being given a further sensible period in which to demonstrate compliance. Further, given the seriousness of this matter, in particular the significant impact on our client's business in terms of damage to its reputation and serious financial loss that would clearly be suffered if you took the steps outlined in your letter, we would be grateful if you could confirm that no steps will be taken by the NHBC prior to 2 April 2015 to allow our client to further demonstrate the true position as set out above.

If we have not received such confirmation from you by 4 p.m. on Monday 16 February 2015, our client considers it will be left with no alternative but to protect its position by applying to the court for an injunction preventing the NHBC from making the statements you propose in relation to the K15 boards. Clearly, we would much prefer not having to do so.

We would urge you to confirm that no steps will be taken by NHBC as threatened by your letter of 5 February 2015 prior to 2 April 2015. We would also urge you to take immediate legal advice because the implications of NHBC refusing to agree to hold off from taking such steps until 2 April 2015 will be very serious indeed.

In August 2015, Kingspan released new K15

marketing literature...

This document still relied on the 2005 test that used the version of K15 that had not been on the market since 2006.

The NHBC backed down after receiving this letter.

Six months later, in August 2015, Kingspan released new K15 marketing literature prepared by Adrian Pargeter, Head of Technical (and now Director of Technical, Marketing and Regulatory Affairs), "Routes to Compliance: Fire Safety: for facades incorporating Kingspan Kooltherm K15 Rainscreen Board on Buildings with a habitable storey 18m, or greater, above ground level." This document still relied on the 2005 test that used the version of K15 that had not been on the market since 2006. It also used a photo of a cladding buildup with a steel frame, referring to the July 2014 BS 8414-2 test, a test that had used a development version of K15, not the product on the market.

08



Photo by Guido van Nispen, [CC BY 2.0](#), via Wikimedia Commons.

Kingspan Post-Grenfell

Kingspan has identified and apologized for conduct and “process shortcomings” related to testing protocols and product marketing in its UK insulation business. Kingspan employees, in particular Heath and Meredith, who testified and were asked in the Inquiry whether Kingspan had disciplined them in any way or even spoken to them about their conduct replied that the company had not done so.

Kingspan management has continued to defend their past behavior in testimony. Adrian Pargeter, the current Head of Technical, Marketing and Regulatory Affairs for Kingspan Insulation UK, for example, admitted that:

It was only the inquiry that made us withdraw the [flawed] tests, even though I had come to learn about the 2005 test being on old tech 4 years earlier in 2016. The only difference was the degree of scrutiny being applied to the question.

Pargeter admitted that he was aware that Kingspan continued marketing K15 using tests that had been done on altered versions of K15, and he wrote letters recommending the use of K15 in numerous high rises with ACM (aluminum) cores (the kind used in Grenfell) by citing large scale tests, even though K15 had not in fact been successfully tested for that use. He continued to stand by Kingspan's decision to label K15 as class 0 by testing only the surface, calling that a “fair interpretation.” He was in charge of a 2015 campaign to market K15 in which he said the goal was to “spin such that the story is not fire, fire, fire

all the time” and to “educate the industry in matters of combustibility ... and its insignificance in terms of individual product performance in the grand scheme of things.”

As of October 1, 2021, this executive continues to play an important role in the testing, certification, and marketing of Kingspan products.

Kingspan has not been asked basic questions about whether this same kind of conduct was occurring with its other products, or in other parts of the world. In 2015, Kingspan terminated Ivor Meredith, its technical director who was in charge of fire testing, not for anything to do with his performance as it related to fire testing, but for “gross misconduct for falling asleep, failing to follow an instruction and unauthorised absence.”

The notes from a disciplinary hearing in 2015 reflect Meredith saying:

Yes I would say that I have been put in a situation where I have had to maintain performance that perhaps our products don't deserve.⁸ I have the ability to show that our products can be used in areas where

8. In his witness statement, Meredith says the products he is referring to are “K15, K12, K10, Kooltherm Cavity closer.” Kingspan says that the K12 framing board was debuted in the United States at the AIA Conference on Architecture 2017.

Q: It's right, isn't it, that this was a deliberate and calculated deceit by Kingspan in which you had become embroiled?

Meredith: Yes, that's correct.

you would normally require material which would be non-combustible; from a critical lifesaver perspective. I have performed in a number of tests in 2005, Kingspan changed the technology of our foam and we couldn't repeat those tests. We were outed by a consultant who we then had to fabricate a story to that the product still said what it did [on] the tin. Although I bucked at that point and said to my manager, at the time, that we are stretching the truth here and what we are going into an area...where we cannot support the performance of the product. I wasn't the senior person there, we produced documentation and we inferred to the industry that our product could do something that potentially it couldn't.

In testimony, Meredith is asked about this:

Q: "It's right, isn't it, that this was a deliberate and calculated deceit by Kingspan in which you had become embroiled?" "

A: "Yes, that's correct."

Q: "And it was part of an overarching strategy to achieve the best possible sales of the product by every means available; that's right, isn't it?"

A: "And that's the strategy adopted for all the products, really. That is that everything that can possibly be done is done to achieve sales."⁹

After the Inquiry was announced in 2017, Kingspan hired two PR consulting firms to begin lobbying

Members of Parliament (MPs) to convince them that combustible insulation such as K15 was "no more dangerous than non-combustible materials when properly installed." With the knowledge of its CEO, Kingspan designed fire tests using its competitors' non-combustible insulation with deliberate weaknesses. In the first test, Kingspan designed the assemblies to be tested to "further weaken their performance" so they were "expected to perform badly." However, the assemblies passed the test anyway.

Kingspan then did a second test using another brand of non-combustible material and "introduced as many weak features/details as possible to ensure it has the best chance of performing poorly whilst at the same time retaining the panel modules and cavity barrier arrangement associated with all tests to date." The emails arranging this test were cc'd to the CEO Gene Murtagh, as well as Gilbert McCarthy (Managing Director, Insulated Panels), John Garbutt (Marketing Director, Kingspan Insulation), Adrian Pargeter, Tony Ryan (Technical Director, Britain and Ireland), and Mark Harris (Divisional Technical Director, Kingspan Insulated Panels). This time the assemblies failed. Kingspan sent a summary of only the second, failed test to MPs investigating fire safety without disclosing that Kingspan had deliberately designed the test with weaknesses and did not mention the first, successful test.

In the Inquiry, Pargeter was asked: Do you accept that the fact and [successful] results of the May test (2018) was highly relevant, by which I mean something which the select committee would wish to know when considering your case, because it undermined your case?" He responded: "No, I don't think it was relevant."

SHAREHOLDERS

In the 60 days before Kingspan formally withdrew the three tests from 2005 and 2014 (on October 23, 2020), five Kingspan executives exercised their executive bonus scheme share options and sold Kingspan shares for a net profit of over \$10 million dollars. The executives are: Gene Murtagh, CEO; Russell Shiels, Director and now Division President of Insulated Panels North America"; Geoff Doherty, CFO; Peter Wilson, Division President of Insulated Panels until retiring December 17, 2020; Gilbert McCarthy, Managing Director of Insulated Panels.

During or after Kingspan's testimony during the

9. In a meeting in 2015, Meredith notes: "I like to think they were pulling fast ones, they were pushing OptimR into inverted roofing, which was not acceptable, they were pushing Tech [TEK] into flat roofing, which was not acceptable, there were a number of things that were obviously being slipped, they were taking advantage of Adrian's new position." Optim-R is Kingspan's "Next Generation Insulation" and Tek is Kingspan's system of Structural insulated panels for walls and roofs.

Grenfell Tower Inquiry, at least two institutional investors divested the stock from their portfolios completely, including Guinness and WHEB (<https://www.whebgroupp.com/kingspan-and-the-grenfell-tower-fire/>). Liontrust announced a freeze on any new investment in the company. 12 other funds sold over 100,000 shares between February 22 2021 and August 22 2021, with Bailie Gifford selling over 3.5 million shares, Impax selling over 1.2 million, and AXA over 500,000 shares. In February 2021, the CEO's brother was appointed to the Board of Directors.

2019 "RE-TEST" OF THE 2005 TEST

During the February 2021 earnings conference call with analysts, CEO Gene Murtagh said about the Grenfell Inquiry, "To be honest with you, we got caught out on the trust equation here, and it's as simple as that. It's the long and short of it... So it was a big letdown for us, probably much more so than it was for anybody outside, I can assure you."

Murtagh goes on to mention a "a retest of the oft-mentioned 2005 certificates." This echoes Kingspan's statement on its website that:

Where questions have been raised about Kingspan's historical BS 8414 testing, the tests have all been repeated and provided evidence to support previous fire safety claims.

And from its closing statement to the Inquiry (June 28, 2021):

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 incorporating current K15 instead of "old technology" K15. The system met the criteria given in BR 135 (it passed). This replacement test indicates that the failure to undertake a replacement for the 2005 test earlier in time has not given rise to any risks from fire safety or to health and safety more generally.

Whilst it should have been appreciated that the 2005 test needed to be repeated following the change in technology, or that the original test result should have been validated following that change, it was not a deliberate or fraudulent act committed with any intention to mislead or deceive anyone. Nor was anyone in fact misled or deceived; anyone who relied on the 2005 BS 8414 test in respect of "new technology" K15 can now similarly rely on the replacement test which has been conducted.

However, Kingspan's 2019 "replacement test" was

not an exact duplicate of the 2005 large scale test. Kingspan notes that

Due to the age of this test, a lot of details and information were hard to come by. The drawings used in the test report are limited in detail, and the test report description of the tested construction also offers little information on the full design of the test construction. As such, we decided to carry out a replacement BS 8414 test featuring an updated assembly more in line with our current testing procedure and using K15 as sold on the market today.

Notably, the 2019 test differs from the 2005 test in several ways. In particular, the external cladding is described in the original "re-test" report as cement particle board rainscreen, which Ivor Meredith, who was in charge of the test and present during

"It was a big letdown for us, probably much more so than it was for anybody outside, I can assure you."

– Kingspan CEO Gene Murtagh speaking about the Grenfell Inquiry on an earnings call.

the test, confirmed in his testimony. Kingspan, however, asserts that this was an error and used a non-combustible fibre cement board in the 2019 test. In addition, the cavity barriers used in the 2005 test were also "unavailable in the UK market" in 2019, so Kingspan substituted a Siderise specification that it had used in previous tests. And Kingspan says the cavity barrier layout and cladding arrangement mirrored the DCLG (UK Ministry's Department of Communities and Local Government) test programme.

Given the requirement that these tests only apply for the exact set of components in the exact same configuration, it is unclear how Kingspan reached the conclusion that "anyone who relied on the 2005 BS 8414 test in respect of "new technology" K15 can now similarly rely on the replacement test which has been conducted."

09

JUSTICE
4GRENFELLco
opWelcome to
Head's Co-op

Campaign banner for local community group "Justice4Grenfell"

Photo by Carcharoth, [CC BY-SA 4.0](#), via Wikimedia Commons.

The Cladding Crisis and Fire Safety After the Grenfell Fire

In the aftermath of Grenfell, the UK is embroiled in an enormous "Cladding Scandal," where hundreds of thousands of tenants and owners face bills of tens of thousands of dollars in remedial work to replace insulation and cladding now identified as unsafe, and where owners have been unable to sell or re-mortgage their homes because of uncertainty about fire safety, while living in homes where they fear for their lives.

Cost estimates for resolving this crisis in the UK are estimated at over \$20 billion, just for buildings over 18 meters tall. While the UK government has pledged over \$7 billion dollars towards remediation, extensive costs are still falling on tenants and owners. The scale of the problem on tens of thousands of medium rise buildings (11-18 meters) with potentially unsafe cladding is still unknown. And the crisis is growing to include other types of buildings (e.g., schools), other products and other countries. Liability and costs for all the parties involved are still unknown.

Just a few days after the Grenfell Fire, the head of the National Fire Protection Association (NFPA) said:

Looked at in their entirety, they [large fires that occurred over the past year] are a collective example of how, either intentionally or accidentally, the fire prevention and protection system has been broken. A system that the public believes

exists and counts on for their safety. A system that, through complacency, bad policy and placing economics of construction over safety, has let the public down.

The NFPA voiced this concern before the issues about manufacturers like Kingspan came to light in the Grenfell Inquiry.

“A system that, through complacency, bad policy and placing economics of construction over safety, has let the public down.”

– Head of the National Fire Protection Association (NFPA), a few days after the Grenfell Fire.

Appendix 1

List of Kingspan managers and executives who testified, provided witness statements, or are mentioned in the report:

Testified

- **Adrian Pargeter, Joined Kingspan 2009, promoted in 2013 to Product Development Manager, then to Head of Marketing in November 2014, currently Head of Technical and Marketing, Kingspan Insulation, Britain and Ireland
- **Andrew Pack, joined Kingspan in 1992 as Technical Advisor, 2001-2014 Technical Services Manager, currently Global Technical Support Manager, Kingspan Insulation Limited
- **Philip Heath, Technical Advisor 1992-3; Technical Services Manager, 1993-2001, Technical Manager 2001-2010. Currently in a "global based position" for Kingspan
- Ivor Meredith, Technical Advisor 1999-2005; Technical Project Manager 2005-2015. Left Kingspan in 2015
- Gareth Mills, Technical Advisor 2002/3-2006, Senior Technical Advisor, 2006. Left Kingspan in 2014
- Malcolm Rochefort, Technical Director since 1995. Retired Dec 31, 2014
- Tony Millichap, Technical Advisor 1995, left company in 2000, returned in 2004 as Head of Technical for UK and Ireland in 2010. Left Kingspan in 2015
- Richard Burnley, Joined Kingspan June 2014 as Managing Director of Britain and Ireland for the Insulation Business. Left Kingspan Oct 2019

Provided witness statements

- **Daniel Ball, currently Technical Project Leader at Kingspan Insulation UK
- **Adrian Brazier, currently Technical Project Manager, Kingspan Insulation Limited
- **Joel Clark, currently Innovation Development System Coordinator at Kingspan Insulation Limited
- **Justin Davies, currently Divisional Certifications Manager, Kingspan Insulation Limited
- **Gwyn Davies, currently Technical Director, Kingspan Insulation Limited
- **Matthew Evans, currently Technical Manager GB at Kingspan Insulation and Technical Committee Chair at the Insulation Manufacturers' Association.
- **Adam Heath, currently Regulatory Affairs Manager for Fire, Kingspan Insulation Limited

Others mentioned in the report

- Peter Wilson, Managing Director, Insulation Division, retired December 2020
- Peter Moss, Senior Technical Advisor, Kingspan Insulation, left Kingspan August 2017
- Arron Chalmers
- **Andrew Wilson, Commercial Sales Manager, Kingspan Insulation North America
- **John Garbutt, Marketing Director, Kingspan Insulation
- **Tony Ryan, Technical Director, Britain and Ireland
- **Mark Harris, Divisional Technical Director, Kingspan Insulated Panels
- **Richard Bromwich, UK Sales Director
- **Mark Swift, National Kooltherm Product Manager, Kingspan Insulation UK
- **Alistair Lambie, National Business Development Manager, Kingspan Insulation UK
- **Russell Shiels, Director & Division President of Insulated Panels, North America
- **Geoff Doherty, CFO
- **Gilbert McCarthy, Managing Dir, Insulated Panels UK, Ireland, Western Europe, Middle East, Australasia
- **Siobhan O'Dwyer, Global Head of Marketing and Public Affairs
- **Ralph Mannion, Managing Director, Kingspan Insulation UK and Ireland
- **Roy Weghorst, Head of Regulatory Affairs- Fire
- **Gene Murtagh, CEO

**still employed by Kingspan as of the date of each person's witness statement and/or testimony and/or as checked on LinkedIn on October 8, 2021.

This report was produced by SMART, the International Association of Sheet Metal, Air, Rail and Transportation Workers. With over 200,000 members, SMART is one of North America's most dynamic and diverse labor unions. SMART's members ensure the quality of the air we breathe, promote energy efficiency, produce and provide vital services that move products to market and passengers to their destinations. SMART members are sheet metal workers, service technicians, bus operators, railroad engineers, conductors, sign workers, welders, production employees and more. With members in scores of different occupations, SMART advocates for fairness in the workplace, excellence at work and opportunity for all working families.

Transcripts, witness statements, testimony, video and other evidence introduced during the Grenfell Tower Inquiry can be accessed at:

<https://www.grenfelltowerinquiry.org.uk/>

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Photo by ChiraJon, [CC BY 2.0](https://commons.wikimedia.org/wiki/File:Grenfell_Tower_inquiry_mural.jpg) via Wikimedia Commons.

Public mural tribute for the victims of the Grenfell Tower fire disaster.