

**Transcript of Kingspan Insulation Limited's Oral Statement to the Grenfell Tower Inquiry on
November 5th 2020 by Mr Geraint Webb QC**

The official transcript of the Inquiry for November 5th 2020 is available at this link:

<https://assets.grenfelltowerinquiry.org.uk/documents/transcript/GTI%20-%20Day%2066.pdf>

"MR WEBB:

Mr Chairman, members of the panel, this is the 25 first time that Kingspan Insulation Limited has made an oral statement to the Inquiry. This module will also be the first time that any of the employees of the company have given evidence to the Inquiry. The first thing I wish to say is that everyone at Kingspan Insulation has been deeply shocked by the devastating and appalling tragedy of 14 June 2017. It is a tragedy which resulted in the death of 72 individuals, and the terrible suffering of so many other people. I speak on behalf of all those employed by the company and its representatives when I say that we all wish to express our profound sorrow that this disaster occurred, and to offer our deepest sympathies to the bereaved families, the survivors, the residents, and to everyone affected by the tragedy.

It was a tragedy that should never have happened. Kingspan Insulation welcomes and supports the vitally important work of the Inquiry in its efforts to determine what went wrong and why. The company has worked hard to respond fully to all the questions asked of it, and it will continue to do so. Kingspan Insulation has set out its position concerning the content of Module 2 in its detailed written opening statement. That opening statement draws upon the evidence provided in 15 witness statements and over 21,000 documents provided by the company to the Inquiry.

Although Kingspan Insulation had no knowledge until after the tragedy that any of its insulation had been used in the refurbishment of the façade of Grenfell Tower, it's now clear that a limited amount of K15 phenolic insulation product was used during the refurbishment, when there were gaps in the availability of the specified insulation, Celotex RS5000PIR. It's also now clear that another of its insulation products, TP10, was used in some window reveals. The company has looked in detail at its processes and procedures and has identified some important process shortcomings, particularly in relation to the way that three BS 8414 tests, one undertaken in 2005 and two in 2014, were conducted and relied upon for the marketing of K15. However, further testing undertaken in 2015, 2016 and since the fire has supported and validated the performance claims made historically in respect of those three earlier tests. The company is confident, therefore, that at the time of the Grenfell Tower refurbishment, these shortcomings did not affect the safety of any cladding system incorporating K15 which relied upon those three BS 8414 tests. Nevertheless, the shortcomings should not have happened, and Kingspan Insulation offers a full and sincere apology for them.

These issues have been set out in the witness statements of the company's employees, and in its written opening statement. Kingspan Insulation also wishes to make two important submissions at the outset, which are dealt with more fully in section F of its written statement. First, testing and peer-reviewed research carried out since the tragedy indicates that the PE-cored ACM cladding used on Grenfell Tower was unsafe and should not have been used on tall buildings. Second, the testing and research carried out indicates that the devastating spread of the fire was caused by the presence of that PE-cored ACM cladding, and that the outcome of the fire would not have been different in any material way if non-combustible mineral fibre insulation had been used behind that cladding instead of PIR. The company welcomes the detailed consideration of these important issues, including by the experts instructed by the Inquiry, in the coming modules. We recognise that the Inquiry is a dynamic process where evidence is heard and examined, and that core participants will have an opportunity to comment upon that evidence in closing submissions. However tempting it might be to respond today to certain points raised in the opening statements of others, we will wait until the actual evidence has been heard in full, and will respond to that evidence by way of closing submissions in due course.

My oral statement today will therefore be short, and will focus on the following six points: First, who is Kingspan Insulation and what is K15? Second, how did K15 come to be used in the refurbishment? 11 Third, how did PE- cored ACM cladding come to be used on Grenfell Tower? 13 Fourth, what issues arise from the fact that such cladding and such insulation were used? Fifth, the testing , certification and promotion of K15. Sixth, what Kingspan Insulation has done since this tragedy.

So turning to the first point: who is Kingspan Insulation and what is K15? Kingspan Insulation is a company within the Kingspan Group responsible for the sale of Kooltherm K15 insulation in Great Britain. K15 is a type of rigid board insulation made from phenolic foam. Insulation is a vital part of any construction, both for environmental reasons and for the health and comfort of its residents. It's widely accepted in the industry that insulation should be added to buildings during cladding refurbishment. Relevant requirements in respect of the conservation of energy are set out in part L of the Building Regulations. The Building Regulations at the time of the refurbishment of Grenfell Tower permitted the use of K15 on tall buildings provided that it was used as part of a cladding system which could be shown to be compliant with Approved Document B or with the BCA Technical Guidance Note¹⁸. As the Inquiry has heard, at the relevant time, Approved Document B provided for three routes to compliance for any cladding system. The so-called linear route to compliance could be used if the insulation was classified as limited combustibility or as non-combustible. K15 was not classified as either and so could not have been used under the linear route. There were two other routes to compliance in Approved Document B. The second route required that the particular cladding system meet the criteria given in BR135 when tested to BS 8414. The third route required assessment of the building as a whole by a fire engineer. The BCA Technical Guidance Note also allowed for compliance via desk top study.

It is clear that none of these four routes were followed by those responsible for the design of the refurbishment of Grenfell Tower. Furthermore, as was concluded in the Phase1 report, the functional requirements set by B4(1) of schedule 1 to the Building Regulations, which requires that the external walls adequately resist the spread of fire , was not met. As was noted in the report, this was a submission that had been made by Kingspan Insulation in its Phase1 closing submissions. It's important to note that Kingspan Insulation was not asked to provide and did not provide any advice to those responsible for the refurbishment about the suitability of K15 for use on Grenfell Tower with PE-cored ACM cladding. Indeed, the company did not know that any of its K15 product had been used on Grenfell Tower until after the fire had occurred.

That brings me to the second issue: how did K15 come to be used in the refurbishment? The first point to note is the insulation specified by those responsible for the refurbishment of Grenfell Tower was Celotex RS5000 PIR and not K15 phenolic insulation. Since the fire, Kingspan Insulation has learned and the Inquiry has heard that there appear to have been supply problems in respect of the Celotex product during the refurbishment, and that in total 145 sheets of K15 were delivered by third-party suppliers, SIF[**sic SIG**] and CCF, to Grenfell Tower because of short gaps in the availability of Celotex RS5000. Some of those K15 sheets were supplied in May and the rest in 7 September 2015. On the information currently available, it appears that K15 constituted 5.2% by area of the rainscreen insulation boards ordered for use in the refurbishment. As I have said, at no stage did anyone involved in the refurbishment ask Kingspan Insulation for advice as to whether K15 should be used on the tower with PE-cored ACM, and the company had no knowledge that K15 had been used until after the fire. The only contact that seems to have been made with Kingspan Insulation in respect of the refurbishment was a request for a single U-value calculation in July 2012. That is a calculation of the thickness of insulation needed to meet a specified thermal performance requirement. That request made no reference to the type of cladding being proposed. Kingspan Insulation heard nothing more and had no other contact with those responsible for the design of the refurbishment.

As we know, a decision was subsequently made to use the Celotex PIR product. As I've said, K15 was not classified as either non-combustible nor of limited combustibility, and so could not be used in the refurbishment via the linear route to compliance. There was nothing in any of the K15 product literature or third-party certification current at the time of the refurbishment which stated that K15 could be used under the linear route. In short, no steps appeared to have been taken by those responsible for the refurbishment to consider whether PIR or K15 could be used in conjunction with

PE-cored ACM in a manner which was compliant with Approved Document B or Technical Guidance Note 18. Had that vital question been considered, the conclusion would have been that PE-cored ACM could not be used with the Celotex product or K15 unless verified by a full-scale test, a desk top study or a whole-building fire engineering assessment. None of those routes were followed by those responsible for the refurbishment.

The third issue which arises is this: how did PE-cored ACM cladding come to be used on Grenfell Tower? Kingspan Insulation's understanding of the evidence so far is that the BBA certificate for the PE-cored ACM cladding used in the refurbishment stated that it achieved Euro class B. The effect of this is that, in principle, the linear route to compliance permitted the use of PE-cored ACM cladding on tall buildings without any further testing or fire engineering assessment, provided that it was used in conjunction with non-combustible or limited combustibility insulation. The fundamental issue here is that, following the Grenfell Tower fire, the testing commissioned by the Department for Communities and Local Government demonstrated that the PE-cored ACM cladding failed the large-scale BS 8414 fire tests both when combined with PIR insulation and when combined with non-combustible synthetic mineral fibre insulation. These were not marginal fails; they were out and out failures of the test. Both systems failed in under eight minutes because of flame height. In other words, despite its apparent Euro class B classification, the PE-cored ACM cladding system used for Grenfell Tower was incapable of meeting the safety standards set by BR135, regardless of whether non-combustible mineral fibre installation or PIR 22 insulation was installed behind it. This strongly indicates that the PE-cored ACM cladding was not safe for use, regardless of the type of insulation with which it was combined.

The fourth issue is this: what issues arise from the fact that PE-cored ACM cladding and PIR and phenolic insulation were used in the refurbishment? The first question which arises here and which this module will be exploring is how and why the PE-cored ACM cladding could ever have been certified as Euro class B when in fact it failed, and failed so badly, to pass any of the large-scale BS 8414 fire tests, regardless of the type of insulation used behind it. The second question, therefore, is whether the linear route to compliance is fit for purpose, or whether instead it is better to carry out large-scale fire tests to ensure that the cladding system as a whole can meet the relevant requirements of the Building Regulations. It's appreciated that opinions may be divided on this issue but Kingspan Insulation believes that one of the lessons to be learned from this tragedy is that it is inherently safer to test any particular cladding system as a whole rather than to assume that it would be safe because each component has passed, or has apparently passed, some smaller-scale test. We understand that the value of large-scale testing will be considered in Module 6, and we welcome that.

The third question which follows from the failure of the PE-cored ACM cladding systems to pass BS 8414 tests when used with non-combustible mineral fibre insulation is this: would the nature or speed or spread of the Grenfell Tower fire have been any different had synthetic mineral fibre been used behind the PE-cored ACM cladding instead of PIR or phenolic insulation? This third question is of course an issue of very real importance, not least in terms of understanding the impact of different insulation types in cladding fires. The DCLG tests show that a system using PE-cored ACM plus synthetic mineral fibre insulation failed just as quickly as the system using PIR insulation. Furthermore, extensive computer modelling undertaken by independent fire experts, Efectis, and published in a series of peer-reviewed academic papers, shows that the influence of the PE-cored ACM cladding was so dominant in the Grenfell Tower fire that replacing the PIR insulation with synthetic mineral fibre insulation would not have made any material difference to the nature or extent of the fire. That research was partly funded by Kingspan Insulation, but it was entirely independent of the company. That research also shows that if A2-rated ACM, ie limited combustibility cladding, had been used with PIR insulation, then the fire would not have spread over the building façade.

It therefore appears to Kingspan Insulation from the evidence currently available that the decision to use PE-cored ACM cladding had the gravest possible consequences, regardless of what decision was then taken in respect of the type of insulation to be installed behind it. Ultimately it will be a matter for the experts instructed by the Inquiry to provide their independent opinion evidence on these issues, and we look forward to the Inquiry examining these important issues in depth in due course.

Fifth, I come to the testing, certification and promotion of K15. As at May 2015, when the first K15 sheets were delivered for use on Grenfell Tower, four systems incorporating K15 had been tested to BS 8414 and had successfully met the BR135 criteria. By the time of the second supply of K15 for use in the refurbishment in September 2015, two more cladding systems incorporating K15, so six in total, had been successfully tested to BS 8414. A further 11 successful BS 8414 tests have been undertaken since September 2015 involving cladding systems using K15. However, the tragedy of the Grenfell Tower fire has caused Kingspan Insulation to review in detail the product development, testing, certification and promotion of K15. As I have said, this review has identified some important process shortcomings, particularly in relation to the way certain tests of cladding systems undertaken in 2005 and 2014 were conducted and relied upon for the marketing of K15. Those issues have been set out in the witness statements provided by the company's employees and have been summarised in its written opening statement. In particular, as to the testing, it's recognised that there were production process changes after the original 2005 BS8414 test, and that a new test should have been carried out following these changes. However, that 2005 test has now been replicated as closely as is possible using current standard K15 and it passed. It's also recognised that another of the six successful tests undertaken by September 2015, namely a 2014 test using a terracotta cladding system, had used a research and development variant of K15 and so that test should not have been relied upon. However, two further BS 8414 tests of similar terracotta systems using current standard K15 were undertaken in 2015 and 2016 and both also passed and met the criteria in BR135. The four other BS 8414 tests which had been carried out by September 2015 were all successful tests of cladding systems using current standard K15.

Some shortcomings in respect of K15 marketing and product literature have also been identified, which again have been set out in the witness statement and in the opening statement. As at today's date, a total of 15 BS 8414 tests of cladding systems incorporating current standard K15 have successfully met the criteria used by BR135. That includes three tests using A2 ACM panels as well. Kingspan Insulation is confident that ADB-compliant cladding systems that incorporate K15 are safe. Furthermore, many regulatory regimes around the world allow the use of suitably tested systems incorporating K15 on tall buildings. It is important to emphasise that a large-scale fire test such as BS 8414 is a test of the entire cladding system. A failed BS 8414 test therefore means that the cladding system as a whole has failed, but it does not necessarily follow that there is a problem with the insulation. An example of this is the failed BS 8414 22 test carried out in 2007 on a Sotech system using K15. Certain individuals at Kingspan Insulation were naturally very concerned about this failure and expressed their concerns in emails, some of which have been quoted in the written submissions of other core participants. What has received less attention, however, is the fact that a very similar if not identical Sotech cladding system was tested shortly afterwards using non-combustible synthetic mineral fibre insulation instead of K15, and that also failed the test. That's set out in paragraph 46 of our written statement. The reality is that such failed tests demonstrate that the BS 8414 system was working robustly in identifying that some cladding systems were not capable of passing the test, regardless of the type of insulation used behind them.

The sixth issue I would like to mention is the initiatives taken by the company since the tragedy. Kingspan Insulation has implemented wide-ranging improvements of its processes and procedures, addressing the specific shortcomings that it has identified historically, but also improving its procedures generally. These changes have been set out in witness evidence and summarised in the written opening statement provided by the company. They include, briefly: first, improvements to product traceability; second, the introduction of a new protocol and guidance on fire testing; third, a review of the marketing literature and performance claims relating to its insulation products; fourth, the publication on its website of all BS 8414 test reports of systems incorporating standard K15, whatever the outcomes of those tests; fifth, new marketing protocols; sixth, a new code of conduct; seventh, improved technical support provided under the Kingspan assured technical support programme; eighth, a new accreditation protocol governing new or amended certification procedures; and ninth, improved change management procedures.

Finally , I conclude by saying that Kingspan Insulation is committed to assisting this Inquiry to get to the truth as to both how and why this tragedy occurred, and what can and should be done to ensure that no future tragedies of this nature can occur. The company will continue to support the work of the Inquiry at every step of the way.

So, Mr Chairman, thank you, and thank you for the opportunity to make these submissions."