

'A raging inferno': testimony reveals how deadly cladding ended up on Grenfell

Tower

Public statements by Arconic, Celotex and Kingspan at times contrast what inquiry was told had been said in private

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Wed 16 Dec 2020

After the [Grenfell Tower fire](#) in June 2017, the companies that made the cladding reacted with horror.

The insulation manufacturer Celotex said it was “shocked by the tragic events”. The “rainscreen” maker Arconic was “devastated” and stressed that the causes of the fire were “not yet known”.

Kingspan, which made some of the insulation, said everyone at the firm had been “deeply shocked”.

The public inquiry into the Grenfell fire has finished its work for this year, after weeks in which it has heard remarkable testimony that has put these firms under harsh scrutiny; on occasions, contrasting public pronouncements with what they were saying in private.

Adrian Williamson QC, counsel for the bereaved and survivors, said the evidence revealed “an industry in which Arconic, Celotex and Kingspan were [content to push hazardous products](#) into the marketplace and sought to market them dishonestly”.

For instance, the inquiry heard how in 2013 Celotex executives had known that “in the event of a fire [its insulation] would burn”. In 2007 Kingspan’s tests had also caused “a raging inferno”.

In 2009 an Arconic executive had shared images of a burning tower fitted with similar panels to those it sold to Grenfell “to show you how dangerous PE [polyethylene] can be when it comes to architecture”.

‘Burning ferociously’

[Ivor Meredith](#) had been “a bit of a DJ and a raver” as well as a technical manager for Kingspan. The inquiry was told that when he had not been making party trips to Amsterdam, his job was to help get the Irish firm’s insulation on to the tall apartment blocks sprouting up everywhere in Britain’s cities.

Since 1992, any material on a high-rise had to be of limited combustibility, but the rules changed in 2005. If a combination of materials passed a fire test it could be used.

That year Kingspan had carried out a test on a 6-metre high wall using its K15 brand of phenolic foam.

It had been “unrepresentative of normal cladding construction”, but it passed. Meredith’s job was to maintain the impression that the material could be used in line with building regulations.

This had been made harder when Kingspan altered the foam’s chemical mix. When tested in 2007 the new formula had become a 600C “raging inferno”.

Meredith sent an “animated report” to make sure his bosses were aware, but he was “criticised for not being very positive about our products”, he told the inquiry.

Despite the new formula, Kingspan had stuck to using the 2005 test pass to help sell the foam boards. Meredith had run more tests “to get the technology to pass, to justify our lie”, he said.

One strategy had been to test the spread of flame across the foil which covered the boards. This was “a bit of a cheat”, the inquiry heard.

Adrian Pargeter, Kingspan’s director of technical, said the test had been in line with building regulations guidance that either “the product or surface material of a composite product” meet fire standards.

But this effectively meant “you could staple the foil facer to dynamite and put it on a building above 18 metres and call it class 0”, suggested counsel to the inquiry, Richard Millett QC.

More full-scale tests failed in 2007 and 2008 but the results had not been communicated to clients, Meredith said.

If Kingspan was challenged it had responded aggressively. When Wintech, a facade engineering company, had raised questions, the technical manager Philip Heath had told Meredith: “Wintech can go f*ck themselves, and if they are not careful we’ll sue the arse off them.”

Heath had been similarly dismissive when a contractor had complained: “You have not substantiated ... on what basis the Kooltherm K15 is suitable for buildings over 18m?”

“[They] are getting me confused with someone who gives a dam [sic],” Heath said.

The role took its toll on Meredith, who told the inquiry he “always had concerns about K15”.

“I tried to do my best to sit on my thoughts,” he said. “It was a nightmare.”

For 18 months before he was sacked his recreational partying had become a serious drug habit.

He had summed his predicament up in an exit interview: “I have been put in a situation where I have had to maintain performance that perhaps our products don’t deserve.”

‘We didn’t even have to get any real ale down him’

Construction materials come with safety certificates which designers, builders and building control officers rely on as assurance they aren’t breaking fire safety laws.

It is an arcane world: the British Board of Agrément (BBA) rules on a material’s performance; Local Authority Building Control (LABC) decrees if a material meets regulations; and NHBC, a warranty and insurance provider for new homes, assesses risk.

They are supposed to guarantee safety but product manufacturers at Grenfell treated them as “mere marketing tools”, the inquiry heard.

It was “great news” in 2009, when Heath told colleagues that LABC had awarded K15 a certificate for use on high-rise buildings, saying that it was “limited combustibility”.

It had in part been based on a certificate acquired the previous year, which had made no mention that it related only to testing of a specific use of the material against a masonry wall. Kingspan had not told the BBA about the change in the foam’s chemistry making it burn like a “raging inferno”.

Heath told a colleague they had thrown so much data at the LABC certifier “we probably blocked his server”.

“We didn’t even have to get any real ale down him!” he had said.

Later, when the BBA had been alerted to concerns about its certificate, Heath had told his colleagues to “let the file gather dust”.

The reason for stalling, Meredith explained, had been that if changes were made “it could limit sales”.

Heath had said it was so he could explore the implications with the marketing department.

‘An accident waiting to happen’

The inquiry heard testimony that influential people had known there were problems.

In 2014 the NHBC called the LABC certificate “all garbage”.

In Whitehall, Brian Martin, the government official responsible for building regulations about fire, had also heard about foam insulation being used on high-rise residential towers and had emailed NHBC with “a friendly warning” that such foam insulations were not of limited combustibility.

But Kingspan had pushed back saying there had been two successful tests, even though the inquiry heard one of these had been a fail.

It was “a deliberate lie”, counsel to the inquiry Kate Grange QC suggested to Kingspan executive Tony Millichip.

“That was never my intention,” he replied.

A few months later when the NHBC had warned it might advise builders not to use K15, Kingspan had threatened legal action.

In October 2014 Kingspan hired the engineering consultancy Arup to ratify its test data. Its expert was “deeply concerned”, she told NHBC. “The use of highly combustible materials in residential buildings is now simply an accident waiting to happen.”

But sales on high-rises had continued.

‘A failure of moral fibre’

Celotex, a Suffolk-based firm acquired in 2012 by the French materials giant Saint-Gobain, had watched Kingspan’s success with envy, the inquiry was told.

Its method had suggested a path to seizing part of a £10m-a-year insulation market. It had called it “the Kingspan route”.

Kingspan “do not have a piece of paper that states they can specifically be used behind any cladding panel”, [Jonathan Roper](#), who was then an assistant product manager at Celotex had told his colleagues.

Roper had cautioned they might “take the view that our product realistically shouldn’t be used behind most cladding panels” because it might burn.

But they had pressed ahead anyway, copying Kingspan, the inquiry heard.

It was a fateful moment. Celotex provided most of the foam insulation on Grenfell.

Roper, a 23-year-old business studies graduate in his first job, had spotted a crucial fact: “Contractors do not know enough about the fire test to challenge [it].”

The firm’s first test in February 2014 had failed in 26 minutes.

So Celotex had tried again, this time concealing a thin sheet of fire retardant magnesium oxide board behind the main cladding panel to reduce the chance of flames reaching the top of the test rig and triggering a fail.

Celotex executives knew it had been “unreflective” of how cladding was actually used, Roper told the inquiry.

“The rig was being over-engineered to achieve a pass,” he said, adding that even at the time it had seemed “dishonest”.

After the system passed, his boss, Paul Evans, had told him the product would be sold and “the decision had been made to omit the magnesium oxide from any reference going forward”.

Evans had asked Roper to produce slides about the test for “general use” to reflect that. They did not mention the first failed test either.

Roper told the inquiry he had “felt incredibly uncomfortable with what I was being asked to do”.

By August 2014 a certificate had been secured from the LABC saying that it was “acceptable for use in buildings with storeys above 18 metres”.

The LABC had apparently cut and pasted the wording from an email sent by Roper. Celotex’s action had been an “intentional, deliberate and dishonest” attempt to mislead customers, Roper agreed.

John Hoban, the Royal Borough of Kensington and Chelsea building control officer had consulted that very certificate to assure himself the material was safe before approving the Grenfell works.

A new product manager, Deborah Berger, asked to see the BRE test report after the product launch in October 2014 and was so alarmed at the picture of the test rig showing the fire-resistant magnesium oxide panels she scrawled “WTF?” in the margin.

“I thought Celotex was a good company that prided itself on doing the right thing, on being honest,” she said. “I was really shocked.”

Another member of the technical team, Jamie Hayes, had heard colleagues discussing the need for the BRE to remove a photo of the test rig from its report which showed the fire retardant panels, because it was “a dead giveaway”. He had not acted.

“It was a failure of courage and a failure of character and a failure of moral fibre on my part not to do so,” he said.

‘Bad behaviour’

The inquiry has already concluded that plastic-filled aluminium cladding panels used to wrap Grenfell Tower during its refurbishment were the primary cause of fire spread. But the inquiry heard that for years before that [Claude Wehrle](#) and his colleagues at Arconic had known of the danger they posed.

Just 18 months before the Grenfell fire, the technical manager at the French division of the US materials giant had emailed the sales team about a fire at a building beside a tower which used the same material as Grenfell.

“We were very lucky,” Wehrle had written. “The Wolleck Tower is 10 metres from a fire ... fortunately, the wind didn’t change direction, but ... we really need to stop proposing in architecture! We are in the ‘know’, and I think it is up to us to be proactive ... at last.”

In 2013, there had been a fire in a high-rise in Dubai using aluminium composite material (ACM) panels. Arconic’s representative in the UK, Richard Geater, had emailed fabricators to say that the cladding “is like a chimney which transports the fire from bottom to top ... within shortest time”.

He added: “We have taken random samples and done a live test in Bangkok in front of architects, they almost fainted. Indeed, this panel is a whole cheat and burns fiercely.”

But Arconic had pressed on selling. In May 2013, Deborah French, a UK sales executive, had emailed customers saying: “We supply both PE and FR [fire retardant] core and can control and understand what core is being used in all projects.” But FR was not proposed at Grenfell.

By the Summer of 2015 Wehrle had emailed colleagues with what he admitted as an “anti-commercial” opinion: “PE is dangerous on facades, and everything should be transferred to fire-resistant as a matter of urgency.”

Arconic gave the instruction to no longer use PE on projects in France in May 2016, said Barwise. But no warning had been given to Grenfell.

The companies and their legal defences

Kingspan told the inquiry it had not known its material was being used on Grenfell and has argued that non-combustible insulation could also fail fire tests. It apologised for “process shortcomings and unacceptable conduct”.

Celotex said it was not a manufacturer’s responsibility to meet building regulations, but admitted “unacceptable conduct on the part of a number of former employees”.

Arconic said it was entitled to expect the UK regulatory regime to maintain safety, that its product had been “misused” and “the principal cause of the Grenfell tragedy was the failure by those responsible for the refurbishment of the tower”.

The inquiry will resume on 11 January 2021.