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Note to IGEM Gas Transmission & Distribution Committee

Amendments to Building Regulations, The Fire Safety Bill & External Gas Risers

Building Regulations

The Building Regulations 2010 require that external walls of buildings resist the spread of fire over the walls and from one building to another adequately. Statutory guidance is provided in Approved Document B on Fire Safety Volumes 1 and 2.¹

The Building (Amendment) Regulations 2018 came into force on 21st December 2018. They extend to England and Wales but they only apply to buildings in England.

The amendments restricted the use of materials in an external wall and specified attachments to those achieving Class A2-s1, d0 or Class A1 in accordance with BS EN 13501-1:2007+A1:2009 i.e. they are required to be non-combustible.

The amendments apply to building work, as defined in Regulation (3) of the Building Regulations 2010 including erection of new buildings and material changes of use, on buildings with a storey at least 18 metres above ground level that contain one or more dwellings, an institution, or a room for residential purposes (excluding hostels, hotels, or a boarding house).

The Building (Amendment) Regulations 2018 include a list of exempt attachments. The list does not include any reference to utility apparatus of any type. Consequently, new external gas risers attached to buildings in England, where the top storey is 18m or more above ground level², must be non-combustible.

Fire Safety Bill³

The Regulatory Reform (Fire Safety) Order 2005, commonly referred to as the “Fire Safety Order”, consolidated a number of different pieces of fire legislation. It applies to all non-domestic premises, including communal areas of residential buildings with multiple homes. The Order designates those in control of premises as the responsible person for fire safety and they have a duty to undertake assessments and manage risks. The Order is enforced by Fire and Rescue Authorities.

The Fire Safety Bill, which is going through Parliament at the moment, clarifies that for any building containing two or more sets of domestic premises the Order applies to the building’s structure and external walls and any common parts,

¹ Volume 1 addresses dwellings including blocks of flats where the top storey is less than or equal to 18m in height. Volume 2 addresses buildings other than dwellings and blocks of flats where the top storey is greater than 18m in height.

² The measurement is taken from mean ground level to the top of the floor of the top storey. It is also very possible that following consultation the height used to specify a building as being high rise will be reduced from 18m to 11m.

³ A Bill is a proposed law presented to Parliament for consideration. It becomes an Act on receipt of Royal Assent following its passage through the parliamentary process.



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including the front doors of residential parts. It also clarifies that external walls in the order include “doors or windows in those walls” and “anything attached to the exterior of those walls (including balconies).” These amendments are expected to provide for increased enforcement action in these areas, particularly where remediation of aluminium composite material (ACM)⁴ cladding is not taking place.

This Bill extends and applies to England and Wales. Separate fire safety legislation is in place in Scotland and Northern Ireland. Fire Safety is devolved in Wales but the Bill amends the shared legislation, with the same delegated powers applying to English and Welsh Ministers.

From the above it is conceivable that GTs will be asked by building owners or their representatives undertaking fire risk assessments on the one hand and by local Fire and Rescue Authorities on the other hand, to justify the continued use of external gas risers on their buildings.

External Wall Fires

The following PowerPoint slide was used by the Building Research Establishment at the Firex exhibition in 2014 and also within a London Fire Brigade briefing pack that was disclosed during Phase 1 hearings to the Grenfell Tower Inquiry.

bre

External Fire Spread

- Fires allowed to develop may flash over and break out through windows.
- Flames spread up over or through the cladding.
- Flames can extend over 2m above window opening. Regardless of cladding materials.
- If fire re-enters building secondary fires may then develop

From the above slide it can be seen that even if combustible cladding has not been installed on the exterior wall, a fire escaping from an internal room e.g. kitchen, through a window can extend over 2m above the window.

⁴ ACM cladding was present at Grenfell Tower.



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Geberit Mapress Stainless Steel External Gas Riser System

I understand that the Geberit Mapress stainless steel system has been tested to DVGW G 5614(P):2013-12 at 800°C to demonstrate that it is resistant to high temperature. However, I do not know whether such tests are compatible with those specified in Approved Document B to the Building Regulations. This could be a suitable topic for desk top research by an appropriate expert.

Wask PE External Gas Riser System

The Wask PE External Gas riser System has been in use for many years. PE pipe, jointed with drawlock fittings, is installed within GRP sleeves to house entry tee fittings which take gas into the dwellings.



Crane/Wask have advised the G/5 panel that fire tests have never been carried out on the system.



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In early 2014 DNVGL, at the request of SGN, undertook a desktop study⁵ of the fire resistance capability of the GRP sleeves in response to queries raised by the City of Edinburgh Council. The report's conclusion was

"... the Wask PE Riser System has been designed to meet a minimum 30min fire resistance and provide an enhanced level of building safety from its external positioning in comparison with existing internal steel gas supply network pipe configurations.

The limited combustibility of GRP sleeving as tested provides a Class 2 classification for resistance to surface spread of flame should not compromise the fire resistance standard of the external wall positioning or adversely contribute to a fire event. It is accepted within the English Building Regulations (notes to Approved Document B (Fire Safety) Appendix A – Table A2) that in circumstances where structures are in open air and it is not likely to be affected by a fire in the building there is no requirement to meet the minimum fire resistance of the external wall supporting structure."

However, the G/5 panel's concern is not so much with the surface fire spread of the GRP sleeve as with the effect of fire on the continued integrity of the gas carrying PE pipe within the GRP sleeve. The panel strongly suspects that if a GRP sleeve containing a gas carrying PE pipe was engulfed by flame for any length of time, the PE pipe would melt, gas would escape and, given that the GRP sleeve system is not gas tight, the gas would aggravate the fire.

The panel acknowledges that its suspicions are no more than "opinion engineering" and it believes that those suspicions should be proved or disproved by properly structured testing.

A supplementary question, inspired by BRE's slide on page 2 above, relates to the minimum distance a lateral pipe can be located above an opening through which an internal fire could escape.

Implications for IGEM/G/5 Edition 3 & Possible Areas for Research

Confirmation is required that the Geberit Mapress Stainless Steel System is non-combustible.

Unless satisfactory factual/test result based answers are provided to the concerns expressed over the PE riser system, reference to such systems will not be included in IGEM/G/5 Edition 3 and by inference they will be no longer supported by IGEM.

A further possible area for research is into mitigation measures for existing PE riser systems should building owners or Fire and Rescue Authorities deem that they present an unacceptable risk following their fire risk assessments.

Prepared by Rodney Hancox, Chairman IGEM/G/5 Panel 26th June 2020

⁵ GL Nobel Denton Report No. 14803 dated 14th January 2014.