Concern: Building Regulations and Fire Safety in Scotland

Dear Convener Dornan,

We are writing with reference to the recent Local Government and Communities Committee session of Building Regulations and Fire Safety in Scotland and would like to make a comment on some of the areas discussed.

A holistic and performance-based approach to fire safety

- As part of European Fire Safety Week, during the Building Day on the 19th of November (programme for the Building Day) representatives from Scottish Building Standards and C.S. Todd & Associates gave a presentation on the steps Scotland has taken to improve guidance and legislation following the Scottish Building Standards Compliance and Fire Safety Consultation in 2018. The presentation highlighted that Scotland is taking a sound holistic approach on fire safety by addressing building design, fire safety installations and organizational requirements including enforcement measures. Currently, Scotland is also still looking to maintain the outcome-based goals of the Building Regulations, by allowing for evidence based alternative approaches to demonstrate compliance with the requirements for fire safety of facades.

- Following recommendations from the Building Standards (Fire Safety) Review Panel, the large scale testing method BS 8414 currently remains as an alternative approach of demonstrating compliance with the regulations relating to restricting External Fire Spread and Spread of Fire within Cavities, whilst also maintaining prescriptive guidance based on material performance.

BS 8414 is a robust test and widely adopted

- The BS 8414 test is designed to replicate a full fire inside a room, breaking out through a window of a multi-storey building and exposing the external wall cladding to fire. It is designed to evaluate the rate and extent of fire spread at the face as well as within a cladding system. It allows for testing of construction products in their end use applications and allows for an examination of the complex interactions and interfaces of these components in a system.

- The BS 8414 has been shown to be able to differentiate between robust systems and systems which have a high risk to (rapid) flame propagation. The UK Government tests performed after the Grenfell tower fire clearly demonstrated the ability to differentiate between systems such as that used on Grenfell which
clearly failed to comply with BR 135 criteria in only a few minutes (link fire test reports) and systems which show a better fire performance. The BS 8414 has been adopted (or a variant thereof) by many countries worldwide. A recent report by Tenos International Fire Engineering Consultants has concluded that BS 8414 applies a higher fire load than another internationally used large scale cladding test, NFPA 285, and that its fire load is already higher than that seen in real-scale experiments, done in Dalmarnock in 2006, reflecting real life scenario fires (Modelling of the Growth Phase of Dalmarnock Fire Test One-Rein, Guillermo; Jahn, Wolfram; Torero, Jose L (Fire and Materials 2011 Conference, 2011-02).

Large-scale system fire tests are also used to regulate the performance of cladding systems in Australia, Belgium, UAE (all having a version of BS 8414), Canada, China, Denmark, New Zealand, Norway, Sweden and USA.

The Modern Building Alliance is not aware of a building anywhere in the world where there has been a very significant cladding fire with extremely rapid fire spread with a system that passed, or would pass, a BS 8414 test.

Below we have outlined examples of other regulatory frameworks within the EU which use large scale fire tests as part of their compliance process:

- Belgium will change their building regulations from January 2020 to move away from the European classification system and start using either the French LePIR2 or the BS 8414 as route to compliance for buildings above 25 m.
- Denmark has a performance-based approach with evidence acceptance from several European large-scale tests
- Sweden is using the SP Fire 105 (Swedish large-scale façade test) to confirm compliance for buildings with more than 8 stories

Ways to avoid unintended consequences

Finally, moving towards a system which only relies on material specification of A1/A2 fire performance may have unintended consequences. The test methods used to determine this Euroclass performance involve very small sample sizes of materials tested in isolation. This means that no performance of the material in its end use application is captured, and in particular, how it will work with other construction materials and products in a system, in the event of a fire. A move towards material specification would also mean, that products could be excluded that offer a number of benefits with regard to energy efficiency, sustainability and being lightweight, even though they have shown in a real scale system scenario test (BS 8414) that they meet the fire safety requirements.

We hope that Scotland, complementing its holistic approach on fire safety, continues to allow for performance-based solutions as a robust evidence based approach for meeting the functional requirements of the Building Regulations.

Yours faithfully,

Quentin de Hults
Executive Chair of Modern Building Alliance
About the Modern Building Alliance

We are an alliance of trade associations and companies representing the plastics industry in the construction sector. Plastics are increasingly used in building and construction applications to make our buildings more sustainable, from window frames and durable pipes to state-of-the-art insulation solutions. An essential pillar of our cause is the ambition for greater fire safety across the construction industry. It is a key driver of our product design and manufacturing: improving the fire safety in buildings is a joint responsibility of the whole value chain involved in building and construction. That’s why, by engaging with policy makers and stakeholders, we are committed to supporting the EU in ensuring safe and sustainable construction for people across Europe.