To: Kevin Stewart MSP, Minister for Local Government, Housing and Planning cc:
Building Regulations Team

To: Local Government and Communities Committee via Clerk of Committee, Peter McGrath

Dear Sir/Madam,

I am writing to you on behalf of the European Phenolic Foam Association which represents manufacturers concerned with the production of phenolic thermal insulation products for the construction and industrial markets. Our attention has been brought to recent discussions held at the Local Government and Communities Committee on Building Regulations and Fire Safety in Scotland. We are led to believe that part of these discussions considered removing the use of the BS 8414 large scale façade fire test for the purposes of assessing construction systems for use on the facades of high rise buildings in favour of a prescriptive approach whereby only products achieving A1 or A2 classifications in accordance with BS EN 13501-1, commonly known as the Euro-class system will be permitted. If this information is correct then we would like to take this opportunity to express our views on this issue in the hope that a more balanced position can be reached when guidance on the fire performance of high rise facades is being considered.

As a trade association of phenolic insulation manufacturers, we have been following both Dame Judith Hackitt's Independent Review of Building Regulations arising from the Grenfell tragedy in June 2017 and the on-going public enquiry itself. We fully support Dame Judith's conclusions that an 'outcomes' based approach is a simpler and more effective means of evaluating fire performance of building facades than prescriptive rules and complex guidance.

To our knowledge, no fatalities or serious injury has resulted from any cladding fires on high rise buildings which have been tested to BS 8414: Parts 1 or 2 and successfully met the acceptance criteria stipulated in BR135. This test assesses the complete performance of cladding systems including the cladding products themselves, thermal insulation, cavity and fire breaks, fixings and supports, gaskets and sealants etc. whilst the thermal output of the timber crib heat source utilised in the test is representative of a typical fire from a dwelling or office scenario and is, furthermore, considered to be one of the most severe tests of its type worldwide.

This test method is currently under review by The British Standards Institute to re-assess its ability to evaluate the fire performance of cladding systems and the view of the experts within this BSI committee is that, with the additional amendments proposed, it is indeed sufficiently robust for this purpose. In addition, the recent publication of rules to establish the scope of test results (BS 9414) means that the evaluation regime is stronger than ever.

We note that the Fire Protection Association (FPA) participated in the 'call for evidence' committee meeting mentioned at the start of this letter and hope that they disclosed their participation in both the development of BS 9414 and the on-going review of BS 8414. Similarly, both the Mineral Insulation Manufacturer's Association (MIMA) and Edinburgh University have also been active participants in both these pieces of work indicating that all of the organisations fully supported the use of these standards for the purposes of evaluating the fire performance of high rise building facades.

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Indeed, one of the most compelling pieces of evidence supporting the use of the BS 8414 test is the joint demonstration by the FPA and one of the MIMA members (Rockwool Limited) at the UK fire college at Moreton-in-Marsh during May 2013. They selected this test to demonstrate the comparable performance of three insulation products when exposed directly to the heat source and the visual result conclusively shows no discernible difference between the surface spread of flame of stone-wool and phenolic foam insulation products. Whilst the UK Phenolic Foam Association had no involvement with this public demonstration, the fact that a video of the event can be found in the public domain makes it appropriate to bring it to your attention and provide the following e-link to the 'YouTube' website: https://www.youtube.com/watch?v=e06j3RNyaRc

What this demonstration clearly indicates is that there is no robust argumentation for the preferential use of Euro-class A1 and A2 insulation products on the facades of high rise buildings whilst imposing a blanket ban on the use of all other classified insulation products. Products with classifications of B to F can differ enormously from one another in their reaction-to-fire performance and as the FPA and Rockwool have clearly demonstrated, a class B/C insulation product can exhibit similar surface flame spread characteristics as a class A1 product because there are inevitably other factors to consider.

Adopting guidance based solely on the reaction-to-fire classification of products will, for example, fail to address the dangers to the safety of fire fighters and those trying to escape arising from falling debris. Many façade systems are fixed to the building substrate and thereby supported using aluminium fixings and supports. Whist aluminium is classed as A1 (non-combustible), its relatively low melting temperature of approximately 660°C is reached within a short period of time during a fully developed fire, resulting in the possibility for significant parts of the cladding system, whether A1/A2 or not, to become dislodged and fall to the ground with potentially fatal consequences. Observations and possible quantification of such falling debris can be evaluated in a large scale façade fire test but such information is not available through an individual product based reaction to fire system.

It must also be recognised that flame spread and melting temperatures are not the only reaction-tofire characteristics that should be considered when assessing the effect of an external façade fire. The potential thermal energy of an insulated building façade is also an important factor when assessing the fire risk. However, using ISO 1716 test results simply in terms of energy per unit weight (MJ/kg) of product does not provide a meaningful comparison of what is applied to a building façade in practice. In the case of thermal insulation, material density and thermal efficiency of the material must also be considered when calculating the additional calorific potential of the façade system.

As an example of external thermally insulated and rendered systems (ETICs), typical Euro-class A1 and A2 insulation products with a density of 140 kg/m³ would need to be 180mm thick to meet the current building regulations thermal (U value) requirement of 0.25 W/m²K. This would equate to approximately 50 MJ/m² and 75 MJ/m² respectively in terms of potential energy of applied insulation. Although a typical phenolic foam with a far lower density (35 kg/m³) and greater thermal efficiency would still have a slightly higher potential energy of approximately 95 MJ/m³ in a similar system, the differences are far less significant than one might assume if only the energy per unit weight (MJ/kg) of product was considered.

Taking all of this information into consideration, it becomes clear that formulating guidance purely on the basis of EN 13501-1 product performance will not provide the desired advancement to fire safety but only provide an unnecessary and unwarranted distortion within the construction products market. Based upon the points raised above, it is our strong opinion that the best and most appropriate route for demonstrating the holistic fire safety of high building facades is for **all** systems and relevant products to be subjected, assessed and classified through the use of the large scale BS 8414 test, which was developed specifically for this purpose.

If we can be of any further assistance in this matter, we would of course be willing to offer our full cooperation with yourselves to ensure a safe and satisfactory outcome.

Yours sincerely

[Name Redacted]

[Name Redacted]
(on behalf of the UK and European Phenolic Foam Associations)

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