Construction innovation and fire safety in the framework of the CPR

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Considerations about “innovation” under the CPR

- The Construction Products Regulation (EU) No 305/2011 never mentions the word “**INNOVATION**” in its text

- Innovation is a **core value for the aluminium construction industry**, also with regard to fire safety aspects

ON INNOVATION

12. Should European legislation on construction products contain provisions specifically favouring innovation (i.e. innovative product, innovative production techniques, and innovative construction techniques)?

X Yes

☐ No

☐ No opinion

One CE mark, two ways to CE mark

Common technical language to assess the performance of construction products

- Harmonised standards
- *De-facto* mandatory
- Assessment and declaration of the performance of a construction products in relation to their essential characteristics

- European Assessment Documents
- Voluntary
- Alternative where not or not fully covered by harmonised standards
- Assessment and declaration of the performance of a construction products in relation to their essential characteristics

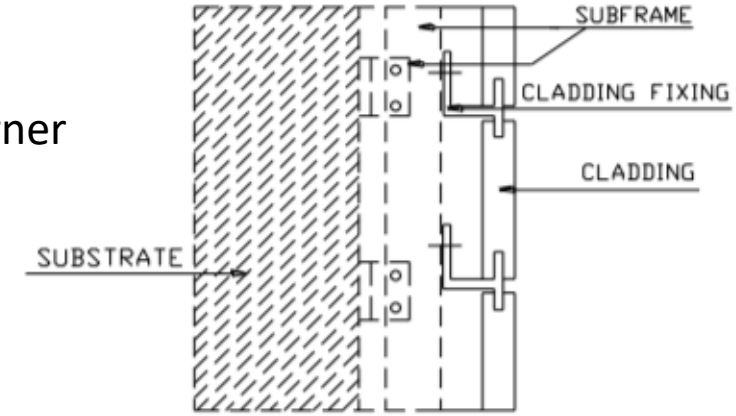
Innovative aluminium construction prouducts
Ventilated Façade Systems

- VENTILATED FAÇADE SYSTEM (VFS): **element of the building** envelope together with windows, doors, parapets, louvers, etc.
- A wall comprising outer skin panels and an airtight insulated backing wall separated by a ventilated cavity
- Covered by:
  - EAD 090062-00-0404 on “Kits for external wall claddings mechanically fixed”
  - EAD 090058-00-0404 on “Ventilated external wall cladding kits comprising a metallic honeycomb panel and its associated fixings”

Ventilated Façade Systems

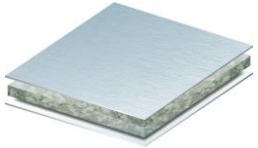
Description of the construction product according to EADs:

- **Cladding elements (aluminium sheets, ACM)**
- Cladding fixings
- Subframe components (optional)
- Thermal insulation products (optional)
- Ancillary components (cavity barrier, sealants, corner strip…)



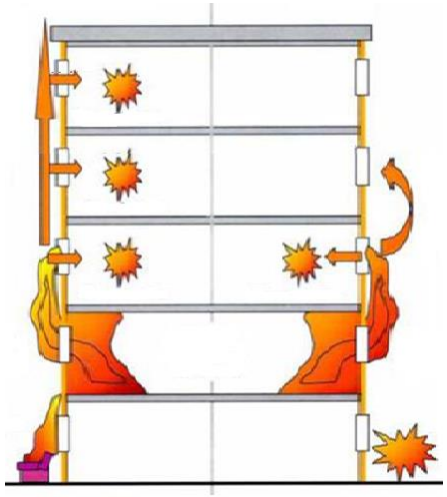
Cladding: ACM, anodization, solid aluminium

- Aluminium Composite Material: with fire retardant or mineral core, respectively reaching B1 and A2 classification according to EN standards
- Solid aluminium has an A1 classification, the highest classification for a non-combustible material
- Anodisation (i.e. production of a stable oxide layer on the surface with controlled thickness) has no effect on fire classification



Which are the VFS fire characteristics we look at?

- **Reaction to fire**
  - Assessed considering performance of components
  - Test based in “worst case” scenario, i.e. the most critical configuration
- **Façade fire performance**
  - In absence of a EU method, Member States provisions are to be followed



Façade fire performance assessment methods:

Country	Assessment method
Austria	ÖNORM B 3800-5
Czech Republic	ČSN ISO 13785-1
Denmark, Sweden, Norway	SP Fire 105
Finland	• SP Fire 105 • BS 8414
France	LEPIR 2
Germany	• DIN 4102-20 Complementary reaction-to-fire test for claddings of exterior walls, • Technical regulation A 2.2.1.5
Hungary	MSZ 14800-6:2009 Fire resistance tests. Part 6: Fire propagation test for building façades
Ireland	BS 8414 (BR 135)
Poland	PN-B-02867:2013
Slovak Republic	ISO 13785-2
Switzerland, Lichtenstein	• DIN 4102-20 • ÖNorm B 3800-5 • Prüfbestimmung für Aussenwandbekleidungssysteme
UK	BS 8414 -1:2015 and BS 8414-2:2015

Advantages of using the EAD

- **Manufacturer**
  - Clear indications about how to test their products to declare specific essential characteristics
- **National authorities**
  - Possibility to set performance requirements using the European Assessment Document
- **Users**
  - the Declaration of Performance delivers information on the performance of a product
- **Notified Bodies and Technical Assessment Bodies**
  - Clear rules about how products are assessed and how the constancy of the assessment results is controlled
- **Market surveillance**
  - Rely on one common information structure for a specific category of products

Façade fire performance assessment methods

Fire propagation of an exterior non load bearing walls according to BS standards

Façade fire performance assessment methods

Fire propagation of an exterior non load bearing walls according to NFPA 285 (US standard mandatory e.g. in UAE)

Façade fire performance assessment methods

- BS 8414 part 1 & 2 (UK)
- NFPA 285 (USA)
- DIN 4102-20 (DE)
- ÖN B 3800-5 (A)
- MSZ 14800-6 (H)
- GOST 31251 (RU)

Fire tests contributing to development of a EU method

Early 2017 - European Aluminium launches full scale fire test projects with its members

- The EC launches the project to develop a test method for fire performance of facades. The project is won by a consortium made of RISE, BAM, BRE, Efectis and EMI

Early 2018 - European Aluminium provides input to the consortium on the basis of obtained results

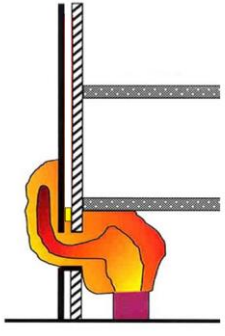
06/2018 - The EC publishes the final report

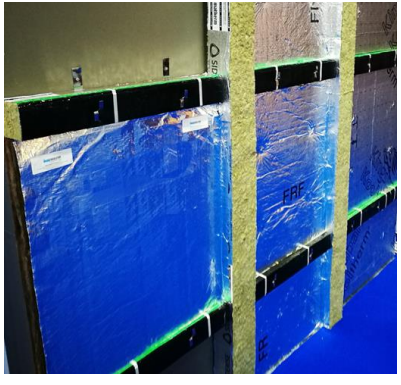
08/2018 - European Aluminium reacts to the final report asking for the choice of the so-called "proposed method" and simple classification system

09/2019 - EC decision on the way forward following the alternative method and launch of call for tender for the finalisation of the European approach

- European Aluminium availability to collaborate in the framework of this project

Holistic approach…where do we stand?





Conclusions

- The **European aluminium industry provides innovative technological solutions** in the construction sector.
- **Innovation does not mean less safety,** also when looking at fire safety
- The test methods identified in the EADs for Ventilated Façade Systems make reference to **highly consolidated standards**
- "*The CPR does not seem to have either a positive or negative effect on innovation*". That is why **innovation has to be better addressed and framed** into the relevant legislation!
- European Aluminum fully supports the **holistic approach** promoted by the European Fire Safety Week and sustained by the co-organizing associations

/ Questions? Contact us!

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