Development of a European approach to assess the fire performance of facades

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- Introduction
- Project plan
- Results

Introduction

- Well known from numerous fires that facades can have an impact on the fire spread
- Combustible materials are used in facades
- Small scale reaction to fire tests are not representative for facade fires

- National regulations are very different in Europé
- Performance based regulations – prescriptive regulations

- Depending on the national regulations and incidents, different test methods have been developed

Project specification

- The objective of the project is the **development of a European approach to assess the fire performance of facades** and the definition of all relevant details and classifications so that the method can be used for harmonised products standards (in CEN) and for European Assessment Documents (in EOTA) for the relevant construction products (kits) within the framework of implementation of Regulation (EU) 305/2011.
- Eight different tasks were specified in the call for tender

- The **BS 8414-1** test and **DIN 4102-20** were specified as the preferred option as a basis for a large and a medium scale European test method respectively

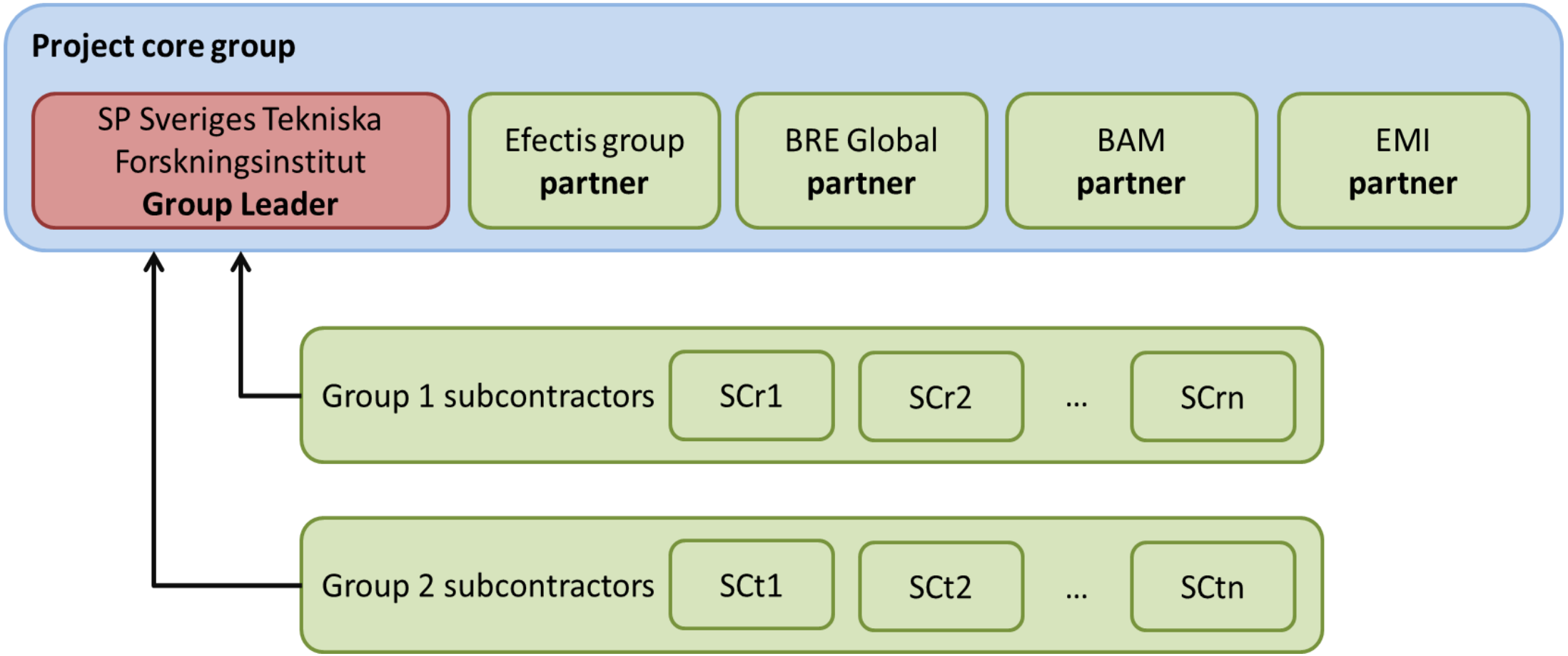
Specified tasks

- Task 1: Register of regulatory provisions
  - **Objective:** to create a concise and complete register of the regulatory provisions of all EU/EFTA member states which have regulations on the obligatory assessment of construction products used to build facades
- Task 2: Complementary verifications
  - **Objective:** to identify any verification or assessment which are recorded in the register (and thus a part of the regulatory needs of the EU/EFTA member states)
- Task 3: Falling off
  - **Objective:** to propose any additional technical and development work to cover assessment aspects concerning falling façade parts. Any additional technical work identified is to be reported along with an estimation of the relevant costs and a proposed timetable for the completion of the technical work.
- Task 4: Meeting regulatory provisions
  - **Objective:** to identify any EU/EFTA Member States which have regulatory provisions going beyond the preferred option of the use of the BS 8414 series and DIN 4102-20 as the basis for the European assessment methods and to propose adequate solutions to overcome any possible objections which may be identified during the execution of the contract

Specified tasks

- Task 5: Classification method
  - **Objective:** to develop criteria for the classification of the product performance taking into account the regulatory needs of the EU/EFTA Member States
- Task 6: Assessment method
  - **Objective:** to propose a complete and detailed product assessment method and a corresponding classification for fire performance of products (kits) for facades. This should be done on the basis of the preferred option of the use of the BS 8414 series and DIN 4102-20 as the basis for the European assessment methods and taking into account the results of the previous tasks
- Task 7: Technical reference
  - **Objective:** to elaborate the complete and detailed Technical Terms of Reference which contains all necessary technical details to allow the Commission to conclude a contract for the realisation of the round-robin programme; and to provide a detailed cost estimation of a short and efficient round-robin programme to verify the repeatability and reproducibility of the finalised assessment method proposed in Task 6
- Task 8: Reporting and meetings

Project organisation

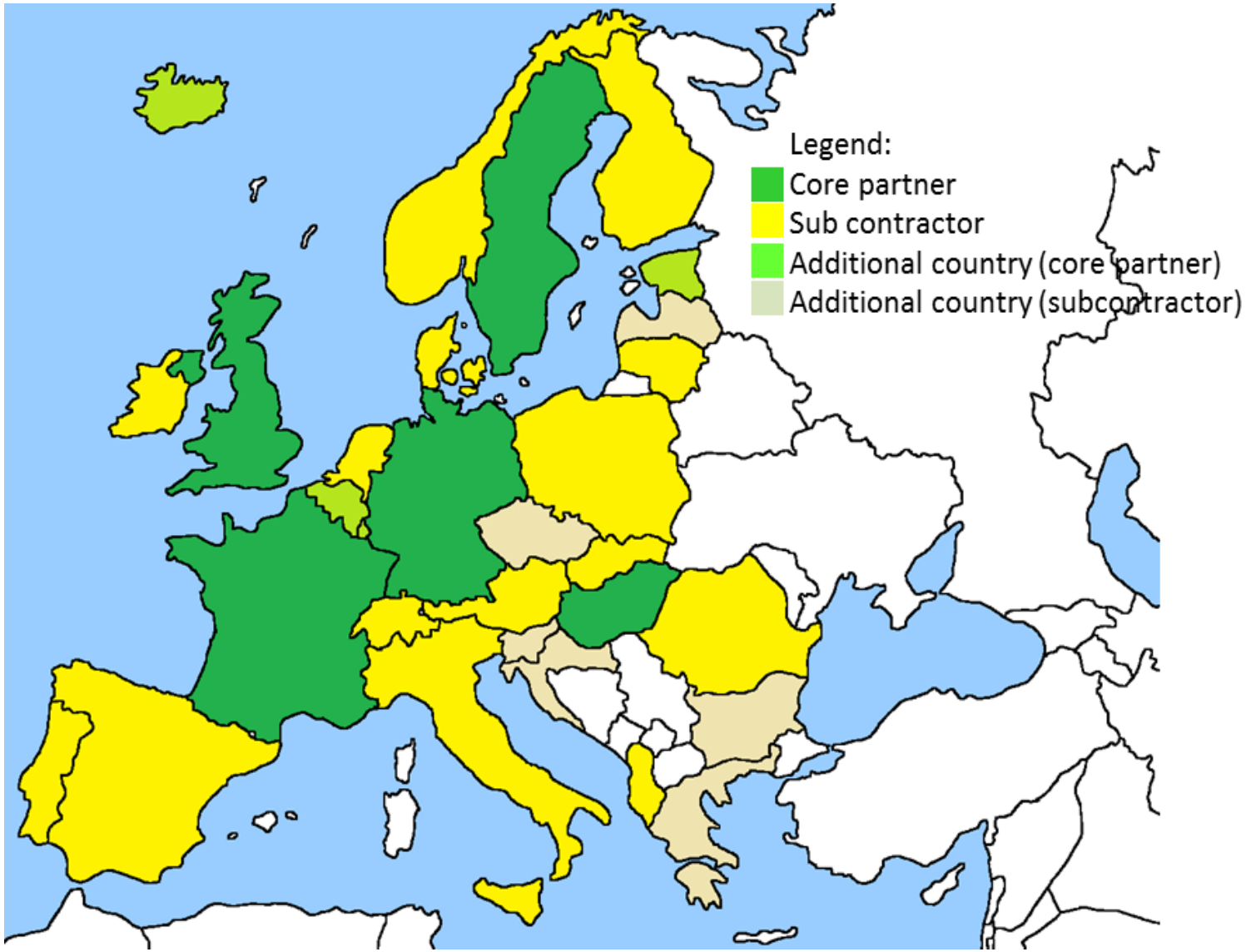


Project organisation

- Subcontractors – Group 1: for Tasks 1, 4 and 7
  - Helping to complete the register of regulatory requirements
  - Serving as a liaison between the national regulators and the project
- Subcontractors – Group 2: for Tasks 1, 2 and 3
  - Providing input to the technical background to the testing methods which are currently employed in member states
  - Commenting on the ability to include assessment criteria identified in the register

- Both groups
  - Contributing to the review process of the project by highlighting any technical issues
  - Providing input to the development and budgeting of a round robin programme to be specified

European coverage



European coverage

Country	Partner	Country	Partner
Austria	IBS	Belgium	Efectis France
Bulgaria	Ministry of interior	Croatia	Univ. of Zagreb
Cyprus	PWD	Czech Republic	PAVUS
Denmark	DBI	Estonia	RISE
Finland	VTT	France	Efectis France, CSTB
Germany	BAM, MFPA Leipzig	Greece	
Hungary	EMI	Iceland	
Italy	LSF	Latvia	Fire research centre
Lichtenstein	Efectis France	Lithuania	Fire research centre
Luxembourgh	Efectis France	Netherlands	Efectis Netherlands
Norway	SP Fire Research AS	Poland	ITB
Portugal	ITECONS	Republic of Ireland	FireSERT
Romania	CNSIPC	Slovakia	FIRES
Slovenia	ZAG	Spain	Afiti
Sweden	RISE	Switzerland	EMPA
UK	BRE		

Stakeholders

- The role of the stakeholders will be to provide guidance, direction and validation of the formulation of the projects and outputs from the Tasks:

  - Providing input to the information gathering template used
  - Assist in completing the register for each Member State based on feedback from individual members of the stakeholder bodies
  - Commenting on the implications and road blocks arising from the suggested assessment criteria identified in the register and complementary to those included in DIN 4102-20 and the BS 8414 series in the proposed method to be developed within the project
  - Contributing to the review process of findings from Tasks
  - Providing input to the development and budgeting of the round robin programme to be specified in Task 7

Stakeholders

- EOTA
- EGOLF
- CEN TC 127
- Advisory Group Fire – AGF
- European association for external thermal insulation composite systems – EAE
- PU Europé
- EUMEPS
- Construction Products Europé
- Fire Safe Europé – FSEU
- EURIMA
- PPA Europé
- European Aluminium
- ISO TC 92 – Fire Safety
- European Phenolic Foam Association
- …

Advisory Group Fire (AGF)

- The AGF is a group formed and operated by the European Commission (EC)
- The EC is responsible for the membership and activities of the AGF.
- As part of this project we are required to engage with the AGF via two meetings:
  - June 2017
  - September 2017
- Invitations to attend the AGF meetings and list of attendees are managed by the EC.

Task 1 and 2 – Register of regulatory provisions and additional requirements

- We have got answers from all EU/EFTA countries
- All countries have regulations on reaction to fire and fire resistance
- The definition of façade varies
  - Proposal: A complete external wall construction of any type or constitution
- 15 countries have additional requirements
  - 13 countries have full scale tests
  - 2 countries have medium scale tests

SP Fire 105	LEPIR 2
MSZ 14800-6:2009	BS 8414 series
1.PN-B-02867:201	Engineering guidance 16
DIN 4102-20/Önorm B 3800-5	ISO 13785 series

Task 3 – Falling off

Country	Requirement	Method
Austria	No more than 5 kg or more than 0.4 m²)	ÖNORM B 3800-5
Denmark, Norway, Sweden	There may not be any large pieces falling down from the facade	SP Fire 105
Finland	No pieces of the specimen (parts of wall) in excess of 0.1 m^2 shall fall down	Engineering guidance 16
Germany	Falling parts recorded	DIN 4102-20
Great Britain, Republic of Ireland	Spalling, delamination or flaming debris is recorded and should be considered as part of the overall risk assessment when specifying the system. Burning debris and pool fire.	BS 8414
Hungary	Heavier falling part than 5 kg	MSZ 14800-6:2009
Poland	Falling flaming parts	1. PN-B-02867:2013
Switzerland	Falling parts recorded	DIN 4102-20 / ÖNorm B 3800-5

Project plan – Task 4

- Task 4: Meeting the regulatory provisions
  - Review the verification methods identified in Task 2 which are complementary to the verification methods in the BS 8414 series and DIN 4102-20
  - Identify whether or not those verification methods identified in Task 2 could be added to these tests without changing the methods themselves through additional measurement or observations in the testing standard
  - For those verification methods which cannot be incorporated in BS 8414-1 and DIN 4102-20 the project team will propose technical developments to the BS 8414 series and DIN 4102-20 that they could be considered to address the issues identified
- Milestones
  - Draft results to be presented at the stakeholder meeting in April
  - Draft report included in the progress report
  - Draft results to be presented at the progress report meeting with EC and AGF in June

Task 4 – Rough comparison of national methods

PN-B-02867	SF 15, FP
ÖNORM B 38005	SF 30, FP
DIN 4102-20	SF 45
Engineering guidance 16	LF 15, FP
SP Fire 105	LF 15, FP, D_w
Lepir 2	LF 30, H, D_w
BS 8414	LF 30
MSZ 14800-6	LF 45, FP, D_w
ISO 13785-2	LF ??

Task 5 – Classification – first draft

- Fire exposure class - Mandatory
  - SM – small fire ~500 MJ
  - LF – large fire ~10.000 MJ
- Fire duration - Mandatory
  - 15, 30 or 45 minutes
- Horisontal fire spread
  - H – horisontal fire spread fulfilled
- Falling parts/(burning droplets and alike)
  - FP – requirements fulfilled on falling parts
- Detailing
  - D_w – windows included
  - D_{fs} – fire stops included

Project plan – Task 6

- Task 6: Assessment method
  - Task 6.1: Review of field of application
    - Identify the field of application of the assessment method, orienting it towards a direct field of application
    - A discussion of limitations with regards to extended field of application
  - Task 6.2: Identification of scope of the assessment method
    - Outline the products for which the assessment method will be applicable
  - Task 6.3: Factors affecting repeatability and reproducibility
    - Incorporate requirements to ensure repeatability and reproducibility in the assessment method
  - Task 6.4: Preparation and elaboration of assessment method
    - The combination of all of the previous subtasks, as well as the elaboration of the work which was carried out in the previous tasks into a complete assessment method

Project plan – Task 7

- Task 7: Technical reference
  - Task 7.1: Technical reference
    - Collection of the technical reference document for the proposed assessment method
    - Combination of all of the results of the work, the reporting of the project results as well as important background information
  - Task 7.2: Round robin proposal
    - Design and budgeting of a testing round robin to be carried out under the terms of a future contract

Project plan – Task 8

- Task 8: Reporting and meetings
  - Task 8.1: Reporting
    - Inception report
    - Progress report
    - Final report
  - Task 8.2: Project meetings
    - Project group meetings – at least one meeting per month (usually video meetings)
    - Meeting with EC and AGF
      - Kick-off meeting with EC – January 19, 2017
      - Inception report meeting with EC – March 16, 2017
      - Meeting with stakeholders – April 25, 2017
      - Progress report meeting with EC and AGF – week 25, 2017
      - Draft final report meeting with EC and AGF – week 39, 2017
      - Final report meeting with EC and AGF – not decided yet, probably week 44, 2017

THANK YOU!

Research Institutes of Sweden