REPORT

issued by an Accredited Testing Laboratory

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Date	Reference	Page
2019-01-11	8P09646	1 (2)

Saint-Gobain Byggevarer AS
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Surface flammability of bulkhead, ceiling and deck finish materials according to IMO 2010 FTP Code, part 5

(1 appendix)

Introduction

RISE has by request of Saint-Gobain Byggevarer AS performed a fire test according to IMO 2010 FTP Code, part 5. The purpose of the test is to form a basis for technical fire classification.

Product

According to the client: Product called ”weberfloor 450 light”, consisting of 90 – 98 % Portland cement and 2 – 10 % expanded Polystyrene. The product has a nominal thickness of 30 – 600 mm, and a nominal density of 550 kg/m^3. The product has a grey colour. The product has an organic content of 2 – 10 %.
End-use of the material: weberfloor 450 light is a light weight mortar for use on steel-, galvanised steel- and aluminium-decks as well as on existing concrete, stone and ceramics.

Manufacturer

Saint-Gobain Byggevarer AS, Oslo, Norway.

Sampling

The sample of the product was delivered by the manufacturer. It is not known to RISE Safety – Fire Research, if the sample received is representative of the mean production characteristics.

The sample was received on December 6, 2018 at RISE Safety – Fire Research.

Test results

The test results are given in appendix 1. The test results relate only to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Accred. No. 1002
Testing
ISO/IEC 17025

Criteria

According to IMO 2010 FTP Code, part 5, as amended, materials used as primary deck coverings must have surface flammability values meeting the following limits: CFE ≥ 7.0 kW/m^2, Q_{sb} ≥ 0.25 MJ/m^2, Q_t ≤ 2.0 MJ, Q_p ≤ 10.0 kW and no burning droplets are produced.

The above follows the subsequent nomenclature:

CFE = critical flux at extinguishment;

Q_{sb} = average heat for sustained burning;

Q_t = total heat release;

Q_p = peak heat release rate.

According to IMO 2010 FTP Code, part 5, appendix 4, surface materials and primary deck coverings with both a total heat release (Q_t) of not more than 0.2 MJ and a peak heat release rate (Q_p) of not more than 1.0 kW (both values determined in accordance with part 5 of annex 1) are considered to comply with the requirements of part 2 of annex 1 (criteria for smoke and toxicity given in the same document) without further testing.

Assessment

The tested sample of the product called ”weberfloor 450 light”, when applied to a alkyd primed 3 mm steel plate meet the technical fire requirements for low flame spread of primary deck coverings, according to the criteria mentioned above.

As the tested sample of the product called “weberfloor 450 light “, applied as specified above, had a total heat release (Q_t) of not more than 0.2 MJ and a peak heat release rate (Q_p) of not more than 1.0 kW it also meets the technical fire requirements according to IMO 2010 FTP Code, Part 2 without further testing.

RISE Research Institutes of Sweden AB
Safety - Fire Research Materials

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Appendix

1 Test results

Appendix 1

Test results – IMO 2010 FTP Code, part 5

Product

According to the client: Product called ”weberfloor 450 light”, consisting of 90 – 98 % Portland cement and 2 – 10 % expanded Polystyrene. The product has a nominal thickness of 30 – 600 mm, and a nominal density of 550 kg/m^3. The product has a grey colour. The product has an organic content of 2 – 10 %.
End-use of the material: weberfloor 450 light is a light weight mortar for use on steel-, galvanised steel- and aluminium-decks as well as on existing concrete, stone and ceramics.

Application

The product was applied, with a nominal thickness of 45 mm, on a alkyd primed 3 mm steel plate, by the client. The alkyd primer weberfloor 4716 was diluted 5:1.

Test procedure

The pilot flame of propane gas was placed impinging to the specimen.

Observations made during fire test

Test no	1		2		3	
The flame front reached, mm	Time, min:s	Heat for sustained burning, MJ/m^2	Time, min:s	Heat for sustained burning, MJ/m^2	Time, min:s	Heat for sustained burning, MJ/m^2
50	NI	-	NI	-	NI	-
Duration of test, min:s	10:00		10:00		10:00	
Flames at flame front went out	-		-		-	
Burning droplets	No		No		No	

NI = No ignition.

Appendix 1

Derived fire characteristics

Test no	1	2	3	Average	**Surface flammability criteria**
Heat for ignition, MJ/m^2	NI	NI	NI	-	—
Average heat for sustained burning, Q_{sb}, MJ/m^2	NI	NI	NI	-	**≥ 0.25**
Critical flux at extinguishment, CFE, kW/m^2	>50.0	>50.0	>50.0	>50.0	**≥ 7.0**
Total heat release, Q_t, MJ	NI	NI	NI	-	**≤ 2.0**
Peak heat release rate, Q_p, kW	NI	NI	NI	-	**≤ 10.0**

NI = No ignition.

Heat release rates, graphs

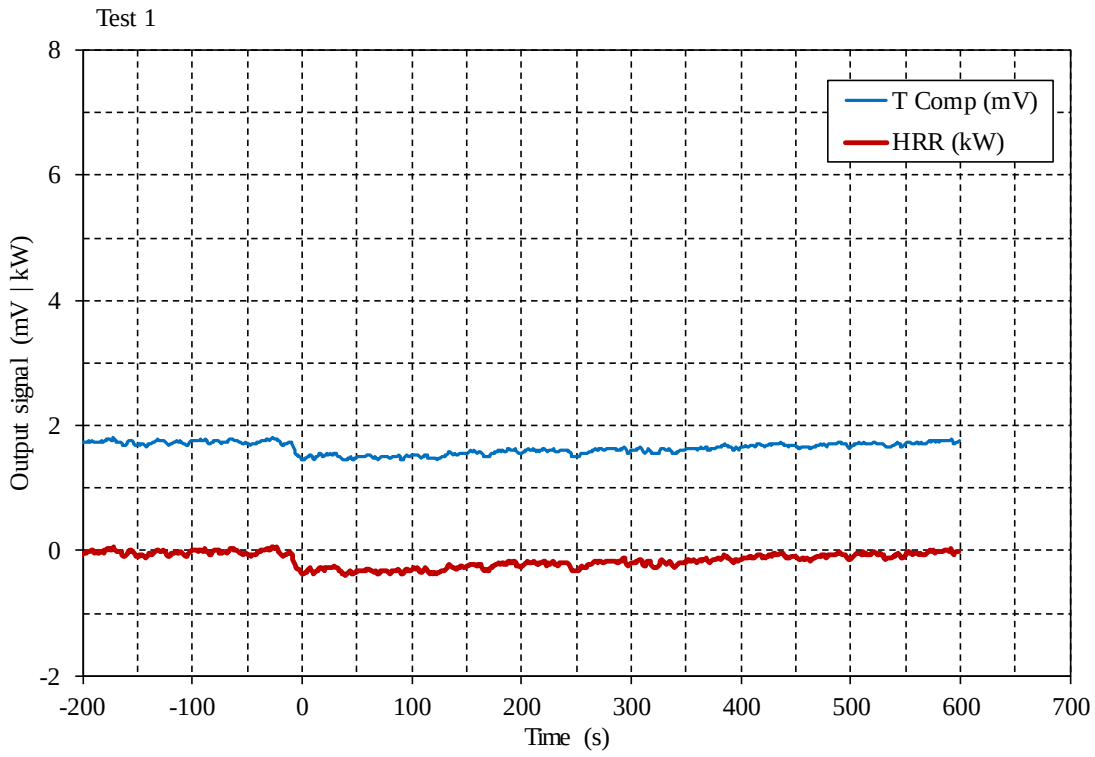

Figure 1 Heat release rate for test no 1

Total heat release: No ignition. Peak heat release: No ignition.

Appendix 1

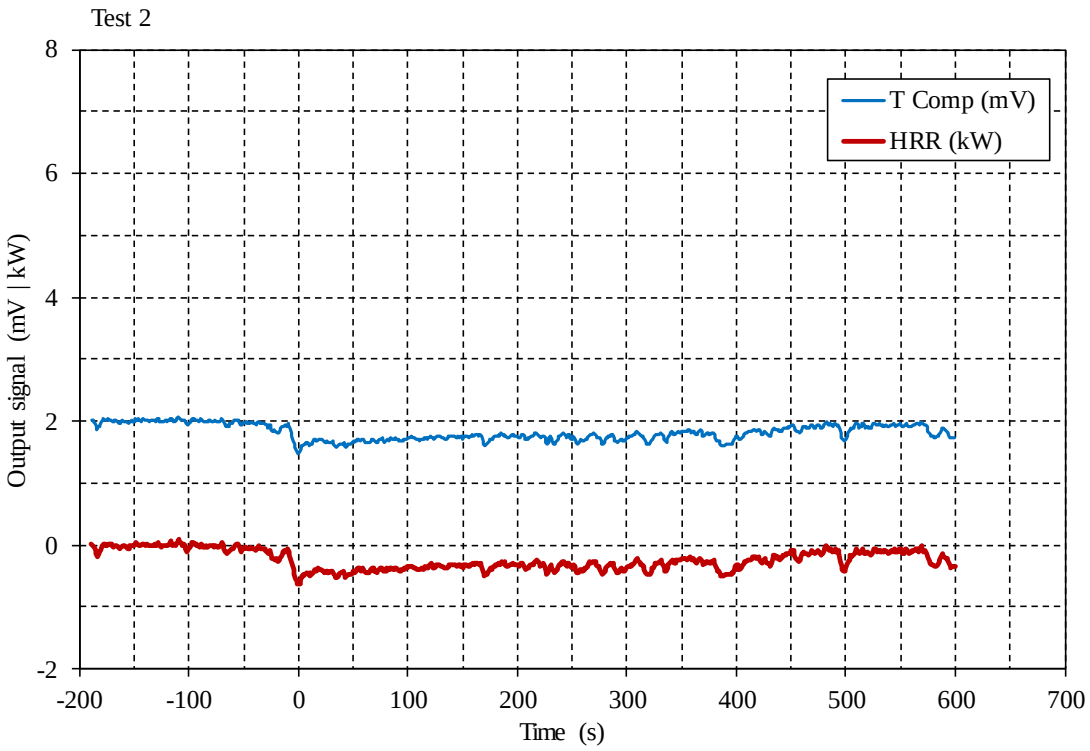

Figure 2 Heat release rate for test no 2

Total heat release: No ignition. Peak heat release: No ignition.

Appendix 1

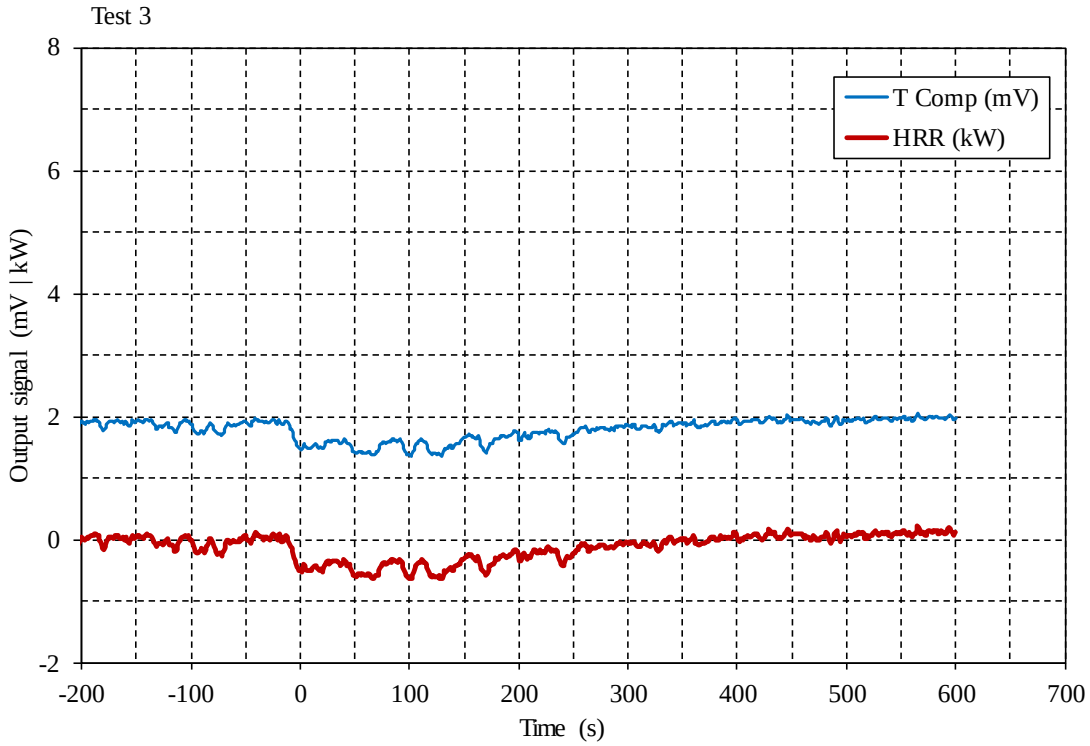

Figure 3 Heat release rate for test no 3

Total heat release: No ignition. Peak heat release: No ignition.

Measured data

Thickness 49.7 – 50.0 mm, including steel plate.

Area weight 45.8 – 47.2 kg/m^2, including steel plate.

Density 923 - 945 kg/m^3, including steel plate.

Conditioning

Temperature (23 ± 2) °C.

Relative humidity (50 ± 5) %.

Date of test

January 9 and 10, 2018.