

Test Report Nr 15469

Sponsor

BRU Group nv
Satenrozen 2A
2550 Kontich
Belgium

Material

Artificial leather

Trade Name

FR ONE ENDURANCE

Nature of the tests

Tests concerning the reaction to fire of this material according to the IMO MSC 307(88) annex 1 part 5.

This report consists of 6 pages, including 1 annex

1. THE REACTION TO FIRE

The aim of the reaction to fire tests is to determine the behaviour of the material concerning the contribution of this material to the development of a starting fire.

This behaviour is characterised by test results, only of a conventional nature, so that these test results do not have an "absolute value".

2. DESCRIPTION OF THE TEST METHOD

At the request of the sponsor, the test and the classification of the material are carried out in accordance with the prescriptions of: "IMO MSC 307(88) annex 1 part 5 - Recommendation on improved fire test procedures for surface flammability of bulkhead, ceiling and deck finish materials."

3. TEST SPECIMEN

The firm BRU Group nv, Satenrozen 2A, 2550 Kontich, Belgium provided the laboratory with a serie of 6 samples of 0,155 m x 0,800 m of a material, in order to determine the reaction to fire characteristics of the material.

Date of reception : 30/03/2012
Sampling : by the sponsor
Trade name : ENDURE

Description of the material:

| | Nominal value | Measured value |
|------------------------------------|--|-----------------|
| BACKING | | |
| Material | Non combustible backing board | |
| Thickness (mm) | 20 | 20 |
| Density | 950 | 924 |
| TOPLAYER | | |
| Material | Artificial leather, 73% PVC, 27% Coton | |
| Manufacturer | | |
| Supplier | BRU Group nv | |
| Trade name | FR ONE ENDURANCE | |
| Surface weight (g/m ²) | 889 | 855 |
| Thickness (mm) | 1 | 1,3 |
| Flame retardants | Yes | (1) |
| Fixation | Loosely mounted | Loosely mounted |

(1) Not verifiable

4. CONDITIONING

Before testing, the samples have been conditioned according to the specifications of the standards mentioned above.

Start conditioning : 30/03/2012

End conditioning : 15/05/2012

5. RESULTS

The tests have been carried out on: 15/05/2012

Position of the pilot flame: not impinging.

a) Observations:

| Specimen number | 1 | 2 | 3 | 1 | 2 | 3 |
|--------------------------|------------------|-----|-----|---|------|------|
| | FLAME SPREAD (s) | | | Heat for sustained burning (MJ/m ²) | | |
| 50 mm | 12 | 12 | 3 | 0,60 | 0,60 | 0,15 |
| 100 mm | (1) | 24 | 9 | (1) | 1,19 | 0,45 |
| 150 mm | | (1) | 9 | | (1) | 0,41 |
| 200 mm | | | 21 | | | 0,87 |
| 250 mm | | | 78 | | | 2,85 |
| 300 mm | | | 78 | | | 2,29 |
| 350 mm | | | 78 | | | 1,79 |
| 400 mm | | | (1) | | | (1) |
| 450 mm | | | | | | |
| 500 mm | | | | | | |
| 550 mm | | | | | | |
| 600 mm | | | | | | |
| 650 mm | | | | | | |
| 700 mm | | | | | | |
| 750 mm | | | | | | |
| Max. flame spread (mm) | 156 | 148 | 345 | | | |
| Duration of the test (s) | 600 | 600 | 600 | | | |

(1) not reached

b) Derived fire characteristics

| DERIVED FIRE CHARACTERISTICS | | | | | |
|---|-----|-------|-------|-------|---------|
| Specimen number | | 1 | 2 | 3 | Average |
| Average heat for sustained burning (MJ/m ²) | Qsb | (1) | (1) | 1,64 | 1,64 |
| Heat for ignition (MJ/m ²) | HFI | (2) | (2) | 0,412 | 0,412 |
| Critical flux at extinguishment (kW/m ²) | CFE | 48,53 | 48,53 | 48,53 | 48,53 |
| Peak heat release rate (kW) | Qp | 2,42 | 2,40 | 2,45 | 2,42 |
| Total heat release (MJ) | Qt | 0,13 | 0,16 | 0,45 | 0,25 |
| Falling burning particles | - | 0 | 0 | 0 | 0 |

(1) The flame spread did not reach 175 mm (2) The flame spread did not reach 150 mm

c) Additional observations

Sample 1: Charring, Flashing, Glowing, Unstable flame front.

Sample 2: Charring, Flashing, Glowing, Unstable flame front.

Sample 3: Charring, Flashing, Glowing, Unstable flame front.

d) Graph of Heat release rate (kW) in function of time (s) for each specimen :

See annex 1.

6. CONCLUSION

The test results relate only to the behaviour of the product under the particular conditions of the test. These results are not intended to be the sole criterion for assessing the potential fire hazard of the material in use.

The test results are only valid for the specimens of the product as they have been tested. Small differences in the composition or thickness of the specimen may significantly affect the performance during the test and may therefore invalidate the test results.

In order to obtain test results which are representative for the product which is supplied or used, the conformity between the test specimen and the product should be assured. This is the role of the manufacturer and/or the supplier.

The product « **FR ONE ENDURANCE** », as described in § 3 and under the conditions of the test, **has not exceeded the surface flammability criteria** mentioned in IMO MSC 307(88) annex 1 part 5 for floorcoverings and **has not exceeded the surface flammability criteria** mentioned in IMO MSC 307(88) annex 1 part 5 for wallcoverings, **therefore it meets the requirements for low flame spread** in compliance with regulations II-2/3.8, II-2/34 and II-2/49 of the International Convention for the Safety of Life at Sea, 1974, as amended.

Ghent, 26 JUNI 2012



P. SIERENS
Project Assistant

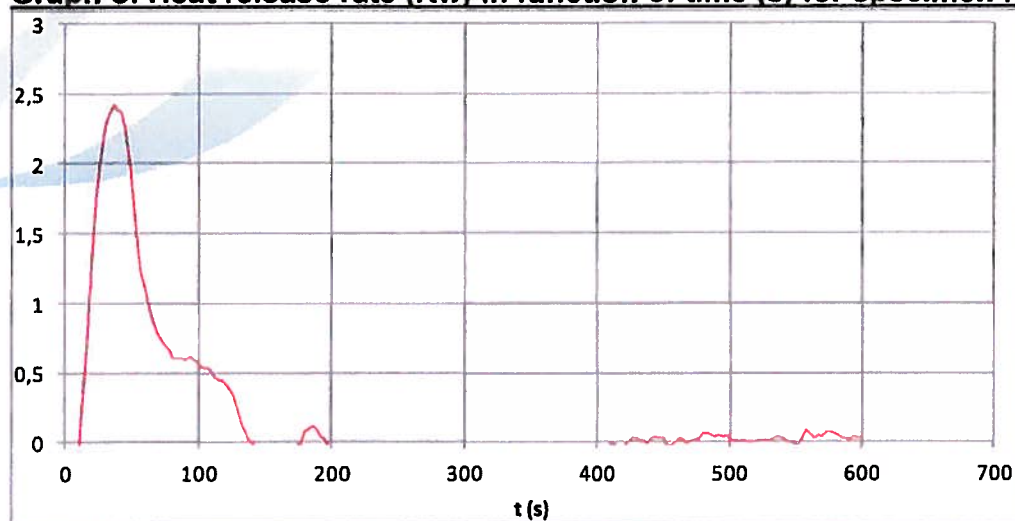


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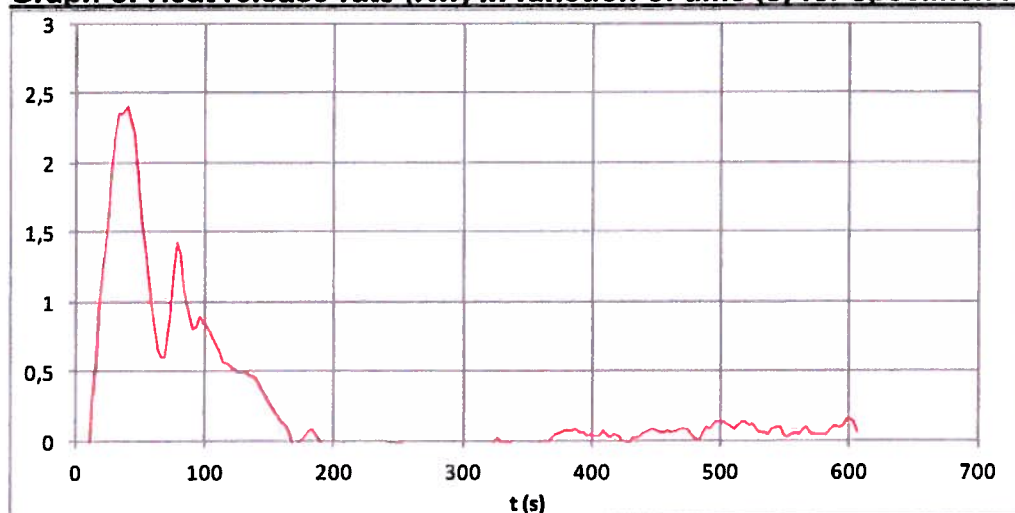
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Graph of Heat release rate (Kw) in function of time (s) for specimen Nr 1



Graph of Heat release rate (Kw) in function of time (s) for specimen Nr 2



Graph of Heat release rate (Kw) in function of time (s) for specimen Nr 3

