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Surface flammability of bulkhead, ceiling and deck finish materials according to IMO 2010 FTP Code, part 5

(1 appendix)

Introduction

SP has by request of Universal Metaltek performed fire tests according to IMO 2010 FTP Code, part 5. The purpose of the tests is to form a basis for technical fire classification.

Product

Product called “HONYLITE Aluminum Honeycomb Panel”, comprising of aluminum honeycomb core sandwich between thin layer of two component adhesive and aluminum sheets on both sides. The product has a nominal area weight of 6.5 kg/m² and a nominal thickness of 20 mm. The product has an “aluminium” colour. (Batch No: BN1617-IMO-1001, Production Date: 01 Dec, 2016)

Manufacturer

M/s Universal Metaltek, Uttar Pradesh, India.

Sampling

The samples of the product were delivered by the manufacturer. It is not known to SP Fire Research, if the samples received are representative of the mean production characteristics.

The samples were received December 8, 2016 at SP 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.

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Criteria

According to IMO 2010 FTP Code, part 5, materials used as bulkhead, wall and ceiling linings must have surface flammability values meeting the following limits: $CFE \geq 20.0 \text{ kW/m}^2$, $Q_{sb} \geq 1.5 \text{ MJ/m}^2$, $Q_t \leq 0.7 \text{ MJ}$, $q_p \leq 4.0 \text{ kW}$ 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 samples of the product called "HONYLITE Aluminum Honeycomb Panel", when applied to a non-combustible board, type "Promatect H", having a nominal density of 680 kg/m^3 , meets the technical fire requirements for low flame spread of bulkhead, wall and ceilings linings, according to the criteria mentioned above.

As the tested samples of the product called "HONYLITE Aluminum Honeycomb Panel", 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.

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Performed by

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Appendix

1 Test result

Appendix 1

Test results – IMO 2010 FTP Code, part 5

Product

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Application

No other backing than the non-combustible required in the standard.

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	10:10		11:22		11:46	
Flames at flame front went out	-		-		-	
Burning droplets	No		No		No	

NI = No ignition.

*This value is not calculated since the flame front did not pass 25 mm from a standard position.

Appendix 1

Derived fire characteristics

Test no	1	2	3	Average	Surface flammability criteria
Heat for ignition, MJ/m ²	NI	NI	NI	NI	—
Average heat for sustained burning, Q _{sb} , MJ/m ²	NI	NI	NI	NI	≥ 1.5
Critical flux at extinguishment, CFE, kW/m ²	>50.0	>50.0	>50.0	≥50.0	≥ 20.0
Total heat release, Q _t , MJ	NI	NI	NI	NI	≤ 0.7
Peak heat release rate, Q _p , kW	NI	NI	NI	NI	≤ 4.0

NI = No ignition.

Measured data

Thickness 20 mm.

Area weight 6.7 – 6.8 kg/m².

Conditioning

Temperature (23 ± 2) °C.

Relative humidity (50 ± 5) %.

Date of test

December 28, 2016.