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Test Report: ICL/H25/17729 Rev 1

International Maritime Organisation, Fire Test Procedure Code: 2010

Part 5 APPENDIX 1
FIRE TEST PROCEDURES FOR SURFACE FLAMMABILITY OF BULKHEAD, CEILING, DECK FINISH MATERIALS AND PRIMARY DECK COVERINGS

Sponsored By
Solar Solve Ltd,
7 Waldridge Way, Simonside Industrial Park,
South Shields, Tyne and Wear, NE34 9PZ, UK

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1 Introduction

International Maritime Organisation, Fire Test Procedure Code Part 5 Appendix 1: "FIRE TEST PROCEDURES FOR SURFACE FLAMMABILITY OF BULKHEAD, CEILING, DECK FINISH MATERIALS AND PRIMARY DECK COVERINGS"

The principle of the test method is for evaluating flammability characteristics of specimens held in the vertical orientation. By exposure to a radiant heat source and a pilot flame, means are provided to observe the times to ignition, spread and extinguishment of flames along the length. Additionally, the measurement of the stack gas thermocouples are taken as the burning progresses.

The test method provides a means for the comparative assessment of products, however, it does not model a real fire situation and the results cannot therefore be used to describe the fire hazard of materials under actual fire conditions.

2 Description of Test Specimens

The description of the specimens given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

The product was a 0.5mm thick film referenced "SOLASOLV Solar Control Window Film"

The sponsor of the test has supplied a product safety data sheet relating to the product tested and this is held in our file relating to this investigation.

3 Conditioning of Specimens

The specimens were received on 9th July 2025.

The specimens were conditioned to constant mass at 23 ± 2°C and 50 ± 5% RH, before testing.

4 Date of Test

The tests were performed on 7th August 2025.

5 Test Procedure

The test was performed in accordance with the procedure called up in International Maritime Organisation, Fire Test Procedure Code Part 5 Appendix 1: FIRE TEST PROCEDURES FOR SURFACE FLAMMABILITY OF BULKHEAD, CEILING, DECK FINISH MATERIALS AND PRIMARY DECK COVERINGS. This report should be read in conjunction with these Standards.

The product was tested with a non-combustible Backing board 12.5 ± 3 mm thick having the density of 950 ± 100 kg/m^3.

6 Test Results

The test results apply to the sample as received tested after conditioning. The test results relate only to the behaviour of the specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential hazard of the product in use. Uncertainty of measurement has not been taken into account when reporting these results.

The test results relate only to the specimens of the product in the form in which they were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and will therefore invalidate the test results. It is the responsibility of the supplier of the product to ensure that the product, which is supplied, is identical with the specimens which were tested.

Interscience has estimated an uncertainty budget as 7%

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire , it is not possible to provide a stated degree of accuracy of test results

Uncertainty measurement has not been taken into account when presenting the test results

The results of tests are summarised below in Table 1:-

Parameter	Average of 3 specimens
Critical flux at extinguishment, CFE (kW/m^2)	14.38
Heat for sustained burning, Q_{sb} (MJ/m^2)	0.49
Total heat release, Q_t (MJ)	0.01
Peak heat release, q_p (kW)	0.57
Flaming droplets	0

Full results are given in Appendix 1 Table 2 and Table 3.

7 Requirements

Table 1 : Surface flammability criteria

	Bulkhead, wall and ceiling linings	Floor coverings	Primary deck coverings
CFE (kW/m^2)	≥ 20.0	≥ 7.0	≥ 7.0
Qsb (MJ/m^2)	≥1.5	≥0.25	≥0.25
Qt (MJ)	≤ 0.7	≤ 2.0	≤ 2.0
Qp (kW)	≤ 4.0	≤ 10.0	≤ 10.0
Burning droplets	Not produced	No more than 10 burning drops	Not produced

Where:

CFE	=	Critical flux at extinguishment
Qsb	=	Heat for sustained burning
Qt	=	Total heat release
Qp	=	Peak heat release rate

8 Conclusion

When tested in accordance with the procedure called up in International Maritime Organisation, Fire Test Procedure Code Part 5 Appendix 1 we confirm that all the requirements for the test method in this normative document have been met, and the result has been determined according to that normative document. The results show that the product meets the requirements for use as Primary deck covering.

Prepared by

C. B. Chong
Fire Scientist
Date of Issue: 21st August 2025.

Approved by

S. Kumar
Technical Manager

Date of Issue Revision 1: 26th August 2025.
Reason for this revision: To amend the description in Section 3 of this report.

Appendix 1

Individual rake data from each specimen run

Table 2

	Run 1	Run 2	Run 3	Average
Time (min, s) to	s	s	s	s
ignition:	1	2	2	2
station 50mm:	2	5	3	3
station 100mm:	3	7	5	5
station 150mm:	4	11	7	7
station 200mm:	6	14	8	9
station 250mm:	8	20	9	12
station 300mm:	9	22	14	15
station 350mm:	15	32	30	26
station 400mm:	24	40	0	21
station 450mm:	43	69	0	37
station 500mm:	65			22
station 550mm:	93			31
station 600mm:				
station 650mm:				
station 700mm:				
station 750mm:				
Flaming out time:	93	69	38	67
Flaming droplets:	0	0	0	0
Final travel (mm)	550	450	350	450
Length of the test (Sec)	300	300	300	300

Table 3

Parameter	Run 1	Run 2	Run 3	Average
Length of test (s)	300	300	300	300
Heat for ignition (MJ/m^2)	0.19	0.52	0.33	0.34
Critical flux at extinguishment, CFE (kW/m^2)	6.04	13.09	23.99	14.38
Heat for sustained burning, Q_{sb} (MJ/m^2)	0.34	0.71	0.43	0.49
Total heat release, Q_t (MJ)	0.016	0.009	0.011	0.012
Peak heat release, q_p (kW)	0.73	0.46	0.53	0.57

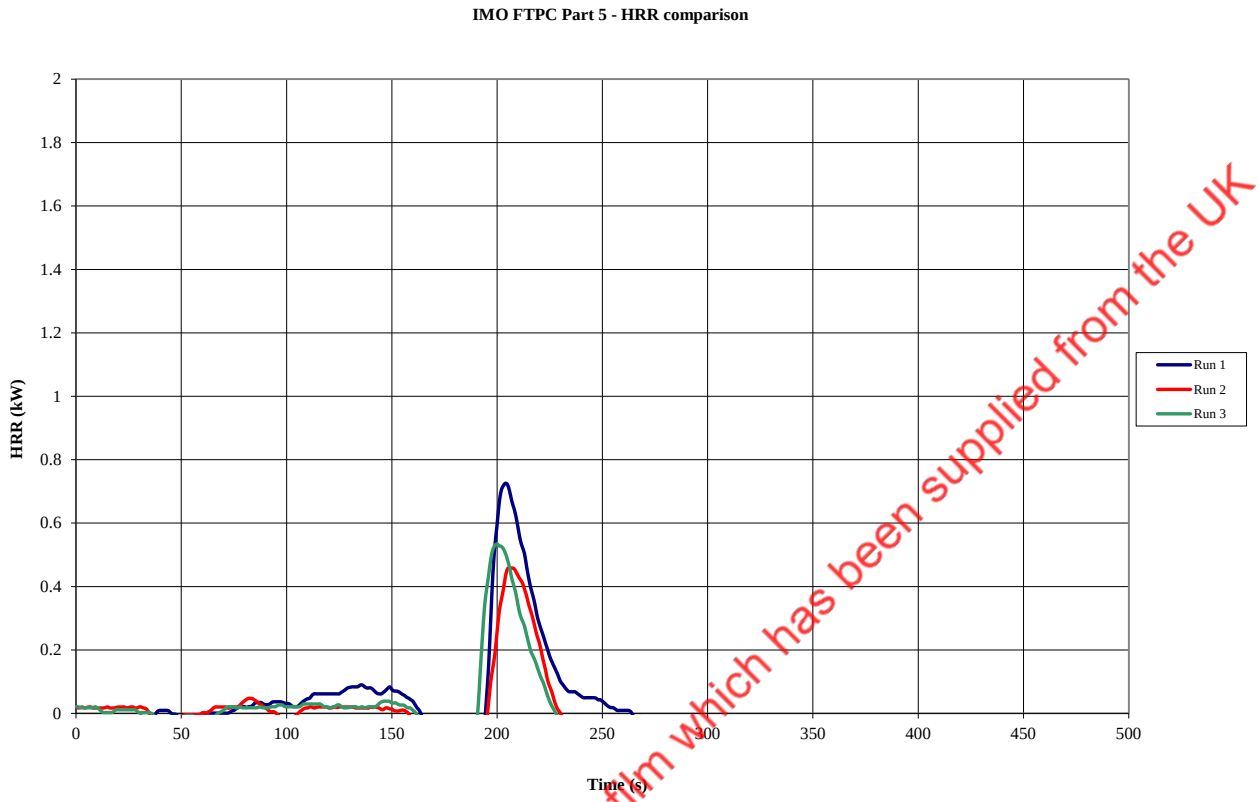

Chart 1. HRR vs time curves for the 3 specimens tested

Photo 1: Specimen before test.

Photo 2: Specimen after test.