

Test on a HDF timber panel with an IXPE underlay and particle board substrate in accordance with AS ISO 9239.1 - 2003

Fire Testing Report

Author: Faustin Molina
Report Number: FNR 12054
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Client: Htt Flooring Pty Ltd

Commercial-in-confidence

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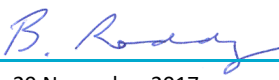
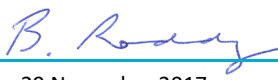
Test Report Details

Document: Fire Testing Report	Test Standard: AS ISO 9239.1 - 2003
Client: Htt Flooring Pty Ltd	Proposal number: NR7768

Test Report Status and Revision History

VERSION	STATUS	DATE	DISTRIBUTION	COMMENT	ISSUE NO.
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A	Final for issue	29 November 2017	Htt Flooring Pty Ltd		FNR 12054

Test Report Authorisation

AUTHOR	REVIEWED BY	AUTHORISED BY
Faustin Molina  29 November 2017	Brett Roddy  29 November 2017	Brett Roddy  29 November 2017

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1 Summary

Sponsored Investigation Report Number FNR 12054

Test on a HDF timber panel with an IXPE underlay and particle board substrate in accordance with AS ISO 9239.1 - 2003

2 Test Details

2.1 Sample Identification

MTF Laminate Flooring

2.2 Sponsor

Htt Flooring Pty Ltd
2/8 Gunya Street
REGENTS PARK NSW 2143
AUSTRALIA

2.3 Manufacturer

Htt Flooring Pty Ltd
2/8 Gunya Street
REGENTS PARK NSW 2143
AUSTRALIA

2.4 Job Number

NR7768

2.5 Test Date

26 October 2017

2.6 Description of Sample

The sponsor described the tested specimen as a high density fibreboard (HDF) timber flooring panel with an irradiation cross-linked polyethylene (IXPE) and a polyethylene (PE) film underlay which is fixed into a particle board substrate. The HDF flooring surface is fixed into the IXPE underlay and particle board substrate with nails.

Nominal thickness of HDF timber panel: 12.3 mm
Nominal thickness of IXPE underlay: 2 mm
Nominal thickness of PE film: 0.06 mm
Nominal thickness of particle board: 19 mm
Nominal total mass: 24.34 kg/m²
Colour: light brown (timber)

2.7 Documentation

The following documents were supplied by the sponsor as a full and complete description of the sample:

- Test Agreement and form FTAF33 dated 19 April 2017.

3 Method

3.1 Conditioning of Specimens

Prior to the test, the specimens were conditioned to constant mass at a temperature of $23 \pm 2^\circ\text{C}$ and a relative humidity of $50 \pm 10\%$.

3.2 Test Method

Four specimens were tested in accordance with AS ISO 9239; Australian Standard, Reaction to fire tests for floorings, Part 1: Determination of the burning behaviour using a radiant heat ignition source, 2003.

One specimen was tested in the transverse direction and 3 specimens were tested in the longitudinal direction.

The test specimen is placed in a horizontal position beneath a radiant panel angled at 30° to provide a heat curve along the test specimen. After 2 minute preheat stage, a pilot burner, consisting of a 250-mm line burner, is used to ignite the test specimen. The pilot burner is applied to the test specimen for a period of 10 minutes.

The time the flame front passes each 50-mm marking along the specimen is noted, and the most distant point reached at any time during the test is measured to the nearest 10-mm.

3.3 Duration of Test

The test is terminated after either 30 minutes of test time has passed or, for Building Code of Australia compliance with Specification C1.10, when the flames on the specimen self-extinguish.

4 Results and Observations

Observations

4.1.1 SPECIMEN 1

The specimen ignited upon application of the pilot flame. Blistering and charring of the specimen was observed in areas of ignition.

4.1.2 SPECIMEN 2

The specimen ignited upon application of the pilot flame. Blistering and charring of the specimen was observed in areas of ignition.

4.1.3 SPECIMEN 3

The specimen ignited upon application of the pilot flame. Blistering and charring of the specimen was observed in areas of ignition.

4.1.4 SPECIMEN 4

The specimen ignited upon application of the pilot flame. Blistering and charring of the specimen was observed in areas of ignition.

4.2 Results of Tests

Mean distance of flame travel: 330 mm

Average Critical Radiant Flux: 6.8 kW/m²

Average integrated smoke value: 9 % x min

Complete results are summarised in Table 1, Table 2, and Table 3.

These test results relate 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.

Table 1 Flame front travel times (seconds)

DISTANCE (mm)	SAMPLE 1 (s)	SAMPLE 2 (s)	SAMPLE 3 (s)	SAMPLE 4 (s)
50	144	178	160	161
100	306	553	341	321
150	610	793	665	624
200	817	965	812	757
250	930	n/a	1006	924
300	1168	n/a	1221	1097
350	n/a	n/a	n/a	n/a
400	n/a	n/a	n/a	n/a
450	n/a	n/a	n/a	n/a
500	n/a	n/a	n/a	n/a
550	n/a	n/a	n/a	n/a
600	n/a	n/a	n/a	n/a
650	n/a	n/a	n/a	n/a
700	n/a	n/a	n/a	n/a
750	n/a	n/a	n/a	n/a
800	n/a	n/a	n/a	n/a
850	n/a	n/a	n/a	n/a
900	n/a	n/a	n/a	n/a

Table 2 HFX values

	10 MINUTES		20 MINUTES		30 MINUTES	
	DISTANCE (mm)	RADIANT FLUX (kW/m ²)	DISTANCE (mm)	RADIANT FLUX (kW/m ²)	DISTANCE (mm)	RADIANT FLUX (kW/m ²)
Sample 1	150	10.2	n/a	n/a	n/a	n/a
Sample 2	120	10.5	n/a	n/a	n/a	n/a
Sample 3	140	10.3	300	7.4	n/a	n/a
Sample 4	150	10.2	310	7.2	n/a	n/a
Average	140	10	305	7	n/a	n/a
S.D.	14.1	0.1	7.1	0.2	n/a	n/a

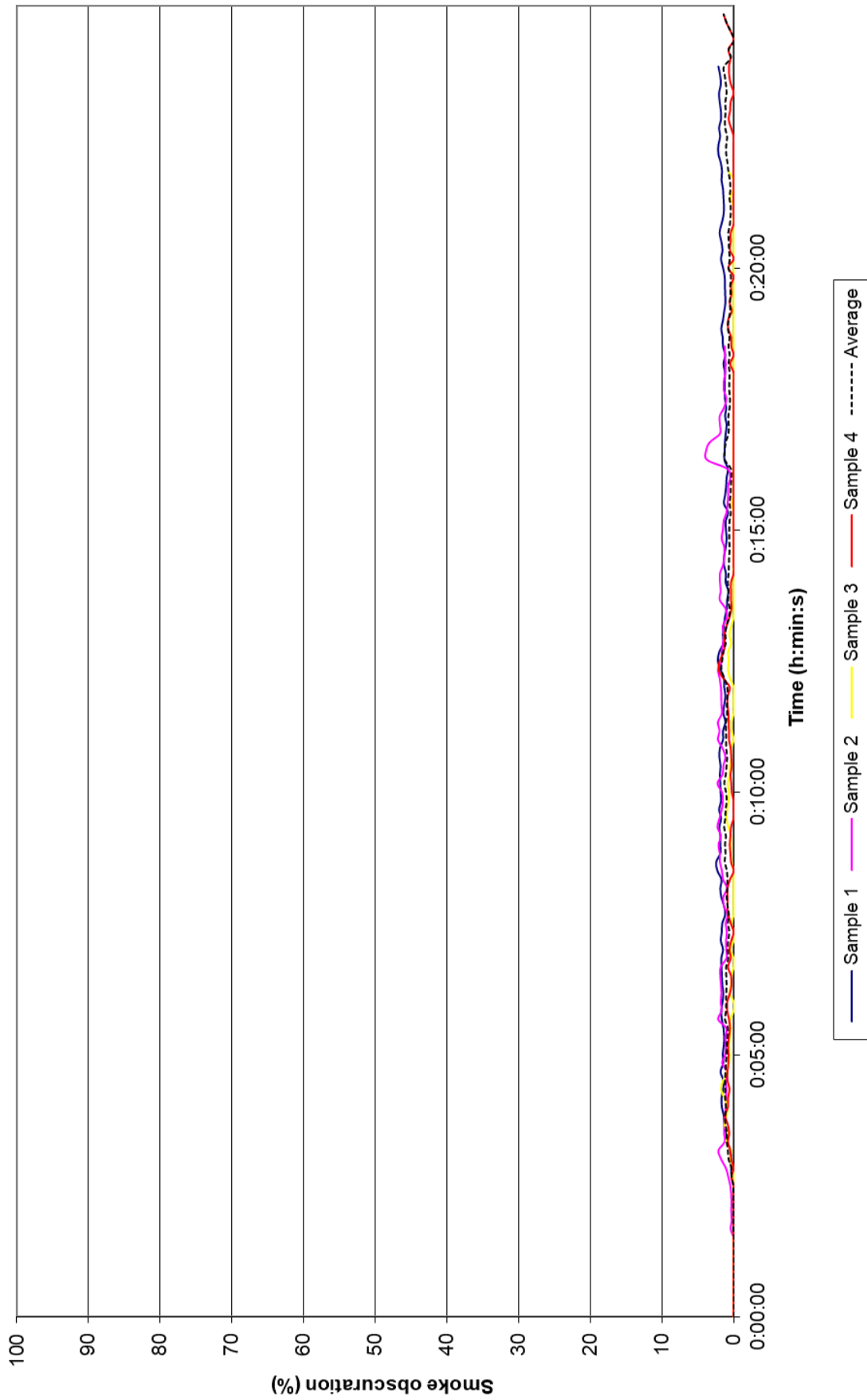
Table 3 Critical Heat Flux/HF-30 values

	TEST DURATION (s)	TEST SAMPLE DIRECTION	MAXIMUM FLAME SPREAD DISTANCE (mm)	CRF (kW/m ²)	HF-30 (kW/m ²)	SMOKE OBSCURATION INTEGRAL (%.min)	MAX. LIGHT ATTENUATION (%)
Sample 1	1428	longitudinal	330	6.8	n/a	16	2.4
Sample 2	1115	transverse	200	9.4	n/a	12	3.9
Sample 3	1313	longitudinal	310	7.2	n/a	3	1.8
Sample 4	1487	longitudinal	340	6.6	n/a	5	2.1
Average	1335.8		326.7	6.8		9	2.5
S. D.	163.95		15.28	0.32		6	0.9

Notes:

1. As specified in section 8.1 of AS ISO 9239.1:2003, the CRF value is read to the nearest 0.2 kW/m².

Figure 1 Light attenuation vs. Time



5 Test Certificate

Figure 2 Certificate of Test FNR12054C

Certificate of Test

Quote No.: NR7768

No. FNR12054C

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This is to certify that the specimen described below was tested by CSIRO Infrastructure Technologies in accordance with Australian Standard ISO 9239, Reaction to fire tests for floorings, Part 1: Determination of the burning behaviour using a radiant heat source, 2003, on behalf of:

Htt Flooring Pty Ltd
2/8 Gunya Street
REGENTS PARK NSW 2143
AUSTRALIA

A full description of the test specimen and the complete test results are detailed in the Division's sponsored investigation report numbered FNR 12054.

SAMPLE IDENTIFICATION: MTF Laminate Flooring

DESCRIPTION OF SAMPLE:

The sponsor described the tested specimen as a high density fibreboard (HDF) timber flooring panel with an irradiation cross-linked polyethylene (IXPE) and a polyethylene (PE) film underlay which is fixed into a particle board substrate. The HDF flooring surface is fixed into the IXPE underlay and particle board substrate with nails.

Nominal thickness of HDF timber panel:	12.3 mm
Nominal thickness of IXPE underlay:	2 mm
Nominal thickness of PE film:	0.06 mm
Nominal thickness of particle board:	19 mm
Nominal total mass:	24.34 kg/m ²
Colour:	light brown (timber pattern)

TEST PROCEDURE: Samples were tested in accordance AS ISO 9239; Australian Standard, Reaction to fire tests for floorings, Part 1: Determination of the burning behaviour using a radiant heat ignition source, 2003. Four (4) samples were tested in accordance with AS 9239.1-2003. The test results were based upon the samples tested in the longitudinal direction.

SAMPLE CLASSIFICATION:

Mean distance of flame travel:	330 mm
Average Critical Radiant Flux:	6.8 kW/m ²
Average integrated smoke value:	9 % x min

Testing Officer: Faustin Molina Date of Test: 26 October 2017

Issued on the 29th day of November 2017 without alterations or additions.

Brett Roddy
Team Leader, Fire Testing and Assessments

NATA Accredited Laboratory
Number: 165
Corporate Site No 3625
Accredited for compliance with ISO/IEC 17025 - Testing.

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-End of Report-

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