

KVADRAT

REACTION TO FIRE TEST REPORT



Test standard: AS/NZS 3837:1998 (R2016)

Test sponsor: Kvadrat

Product: Twilight 0212

Job number: RTF260756

Revision: R1.0

Test dates: 14 and 17 April 2026

Accredited for compliance with ISO/IEC 17025:2017 – Testing



JENSEN HUGHES

Quality management

Revision	Date	Revision description		
R1.0	30 April 2026	Initial issue.		
		Prepared	Reviewed	Authorised
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Formerly Warringtonfire Australia Pty Ltd¹

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1.0 Introduction

This report documents the findings of the reaction to fire test of “Twilight 0212” in accordance with AS/NZS 3837:1998 (R2016).

Jensen Hughes Fire Testing Pty Ltd (Jensen Hughes) performed the test on 14 and 17 April 2026 at the request of the test sponsor listed in Table 1.

Table 1 Test sponsor details

Test sponsor	Address
Kvadrat	Lundbergsvej 10 8400 Ebeltoft Denmark

2.0 Test specimens

The description of the test specimens is detailed in Table 2. Unless otherwise specified:


The information regarding the specimen was provided by the test sponsor.

All measurements were taken by Jensen Hughes.

Jensen Hughes was commissioned to modify the specimens so they met the geometric requirements of the test standard.

All measurements – unless indicated – were measured by Jensen Hughes.

Table 2 Test specimen description

Description	
Product	Twilight 0212
Batch number	41216-7403-212
Manufacturer	Kvadrat
Product description (nominated by manufacturer)	The composition included 59% polyester FR and 41% polyester. The material had a textured khaki side and a smooth ecru sateen side.
Received size	3000 mm long × 500 mm wide × 0.64 mm thick
Prepared sample size	100 mm long × 100 mm wide × 0.64 mm thick
Area Density	Before conditioning: 0.35 kg/m ² After conditioning: 0.35 kg/m ²
Colour	Beige and Khaki
Substrate	10 mm thick plasterboard
Test face	Top Face (textured khaki face)
Photographs of a representative prepared specimen	Top face 

Description

	Bottom face	
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3.0 Test procedure

Table 3 details the test procedure for this reaction to fire test.

Table 3 Test procedure

Item	Detail
Test standard	The test was performed in accordance with AS/NZS 3837:1998 (R2016).
Variations	None. As the specimens were very thin and light with a plasterboard substrate, the small mass and minimal smoke generated contributed to suspect smoke results.
Pre-test conditioning	The specimens were received on 27 March 2026. Before testing, the specimens were conditioned to a constant mass at a temperature of 23 ± 2 °C and a relative humidity of $50 \pm 5\%$.
Sampling / specimen selection	The specimens were supplied by the sponsor of the test. Jensen Hughes was not involved in any selection or sampling procedure.
Test orientation	Horizontal
Separation distance	All specimens were tested with a separation distance of 25 mm between the base plate of the cone heater and the upper surface of the specimen.
Specimen preparation	A 100 mm × 100 mm × 10 mm thick square of plasterboard was used as a substrate. All specimens were wrapped in a single layer of aluminium foil which covered the sides and the bottom.
Specimen mounting	The sample was thermally stable so additional support such as a wire grid was not used. A retaining frame was used, leaving an average exposed specimen surface area of 8.836×10^{-3} m ² . The specimen was tested without an air gap.
Spark ignitor	The spark ignitor was turned off after the specimen ignited.
Number of tests	Six specimens were subjected to an irradiance of 50 kW/m.
Test end condition	The tests were ended 2 minutes after any flaming or other signs of combustion ceased, in accordance with section 2.5.2 (e) of AS/NZS 3837:1998 (R2016).
Frequency of measurement	Data was collected every 1 second.
Orifice plate calibration factor	0.042323 (14 April 2026) and 0.042608 (17 April 2026)
Test face	Top face (textured khaki face)
Test operator	Jerry Xu

4.0 Test results and observations

4.1 Test results

Table 4 shows a summary of the results for the test specimens.

Table 4 Test results

Parameter	Abbreviation	Units	Results						Mean
			Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	
Thickness		mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Irradiance		kW/m ²	50	50	50	50	50	50	50
Test duration		s	235	207	227	260	212	223	227
Time to sustained flaming		s	38	40	71	58	58	73	56
Time to flame out		s	115	87	107	140	92	103	107
Exhaust flow rate		m ³ /s	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Sampling interval	Δt	s	1	1	1	1	1	1	1
Specimen mass									
Initial	$m_{initial}$	g	3.5	3.5	3.5	3.6	3.5	3.5	3.5
At sustained flaming	m_s	g	2.8	2.8	0.4	1.6	1.3	0.5	1.6
Final	m_{final}	g	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average mass loss per unit area	\dot{m}_A	kg/m ²	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Pyrolysed mass loss		wt%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average loss rate between ignition and end of test	\dot{m}	g/(m ² s)	5.8	6.6	5.9	5.6	6.0	6.0	6.0
Average loss rate between 10% - 90% of mass loss	$\dot{m}_{A,10-90}$	g/(m ² s)	16.0	17.0	20.1	16.3	23.1	12.0	17.4

Parameter	Abbreviation	Units	Results						Mean
Heat release rate (HRR)									
Average for the first 60s after ignition	$\dot{q}_{A,60}$	kW/m ²	102.2	92.9	65.3	90.8	73.6	57.2	80.3
Average for the first 180s after ignition	$\dot{q}_{A,180}$	kW/m ²	36.6	33.7	24.6	33.1	26.6	21.8	29.4
Average for the first 300s after ignition	$\dot{q}_{A,300}$	kW/m ²	22.1	20.3	14.8	20.0	15.9	13.1	17.7
Peak	\dot{q}_{max}	kW/m ²	252.7	237.1	271.0	218.1	309.0	241.6	254.9
Total	$Q_{A,tot}$	MJ/m ²	7.4	6.8	5.7	7.2	6.0	4.8	6.3
Average effective heat of combustion	$\Delta h_{c,eff}$	MJ/kg	18.5	17.2	14.4	18.0	15.1	12.0	15.9
Smoke production									
Total during non-flaming phase	S_{A1}''	m ² /m ²	25.2	34.6	167.4	34.0	52.9	61.7	62.6
Total during flaming phase	S_{A2}''	m ² /m ²	184.4	170.7	147.1	158.4	152.0	102.9	152.6
Total	$S_{A1}'' + S_{A2}''$	m ² /m ²	209.6	205.3	314.5	192.3	204.9	164.6	215.2
Average specific extinction area	SEA	m ² /kg	428.9	431.9	741.5	-49.1	155.1	46.0	292.4

4.2 Test observations

- + Within 5 seconds of exposure, all specimen started to shrink.
- + At about 26 seconds of exposure, all specimen started to emit smoke.
- + Between 38 seconds and 73 seconds of exposure, all specimens had ignited.
- + Between 87 seconds and 140 seconds of exposure, all specimen self-extinguished.

5.0 Application of test results

5.1 Validity

This document is the original version of this test report and is written in English. In case of doubt the original version prevails over a translation. This document is issued subject to Jensen Hughes' standard terms and conditions.

The results of these fire tests may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

Reports are statements of fact prepared in accordance with the referenced version of the standards stated in Section 3 of this report. Reports are based upon the information provided to Jensen Hughes. Jensen Hughes takes no responsibility for the accuracy or completeness of such information.

The results stated in this report apply to the sample as received. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the test sponsor. The test sponsor should then obtain appropriate documentary evidence of compliance from Jensen Hughes Fire Testing or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test specimens that were tested.

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5.2 Uncertainty of measurement

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurements obtained from a reaction to fire test, it is not possible to provide a stated degree of accuracy of the result.

Appendix A Test data

A.1 Heat release rate

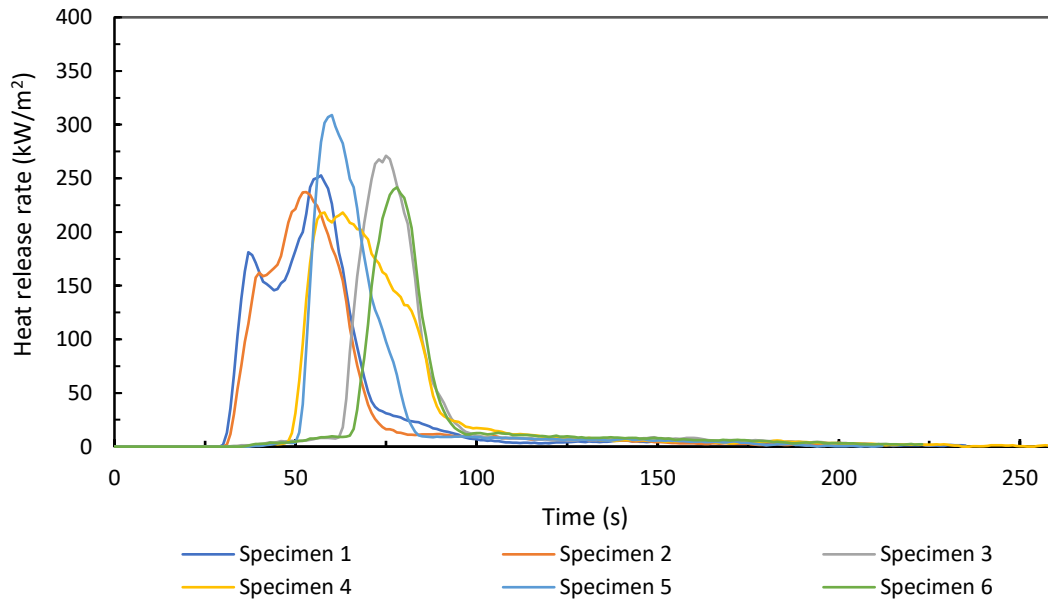


Figure 1 Heat release rate vs time

A.2 Total heat release

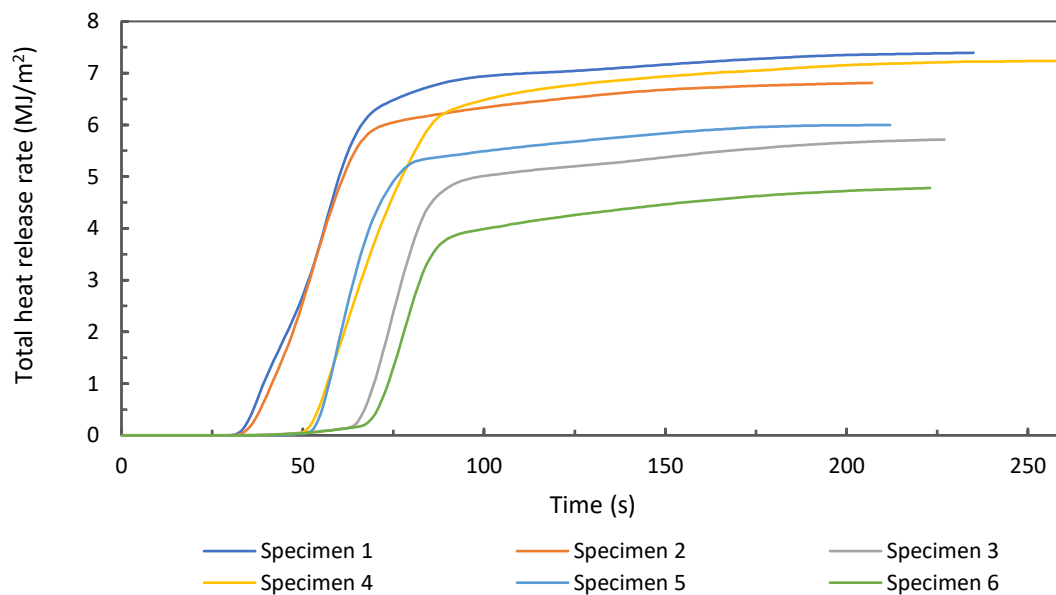


Figure 2 Total heat release vs time

A.3 Average heat release

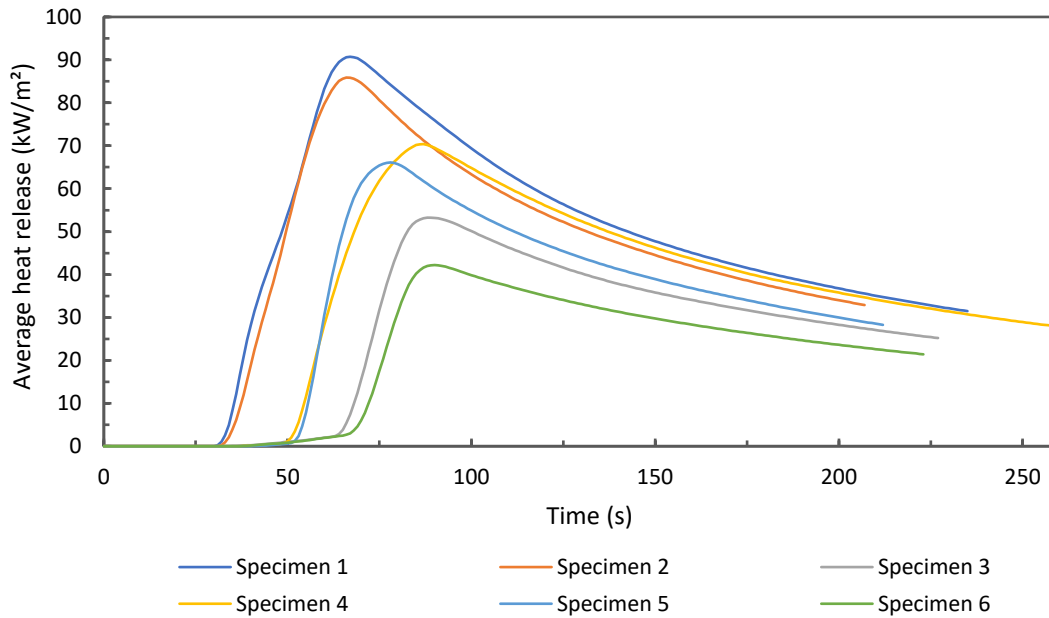


Figure 3 Average heat release vs time

A.4 Smoke production rate

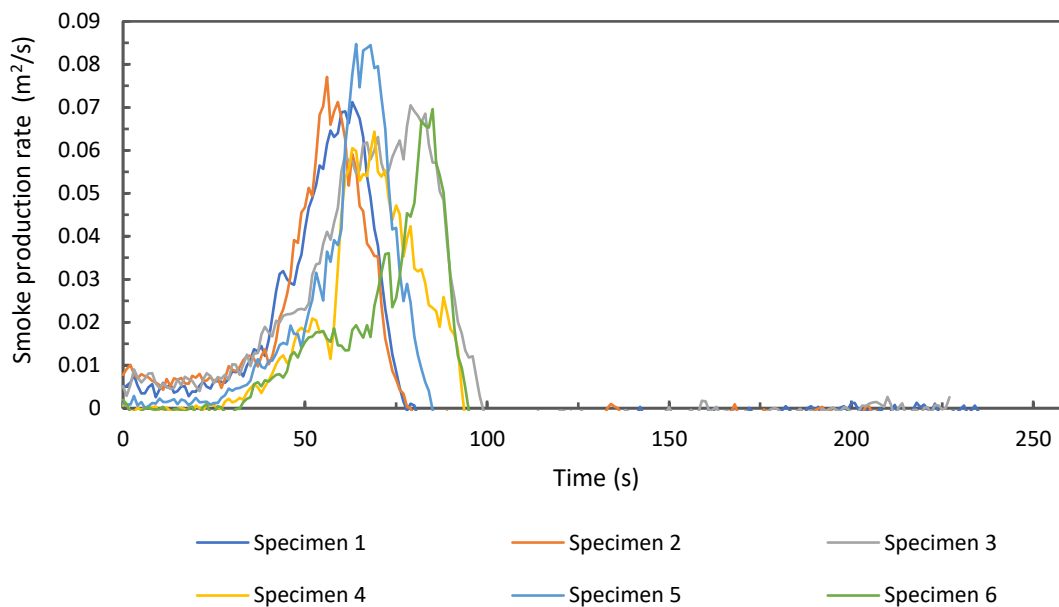


Figure 4 Smoke production rate vs time

A.5 Total smoke production

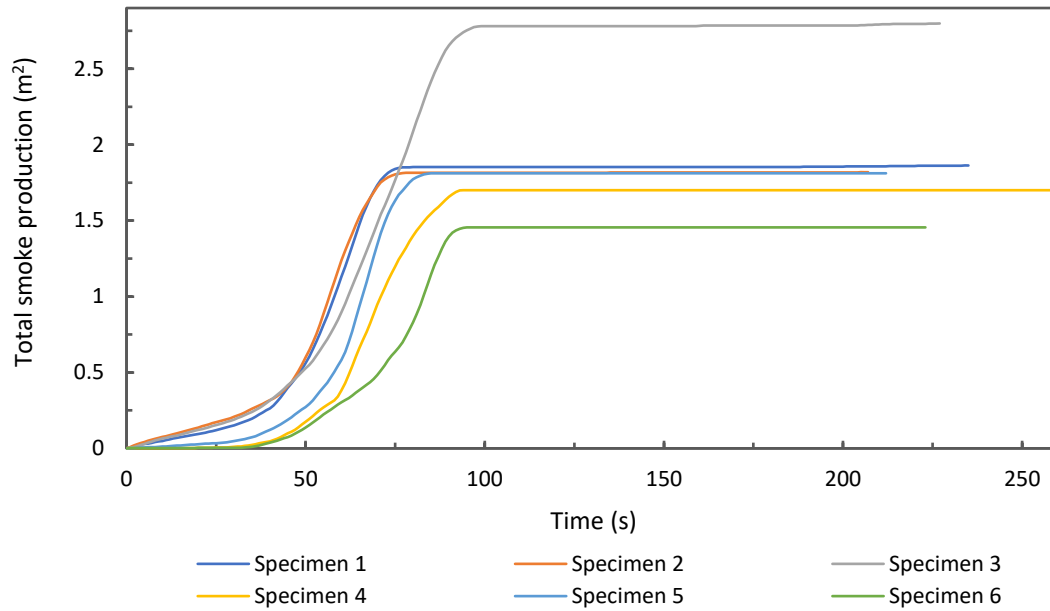


Figure 5 Total smoke production vs time

A.6 Mass loss rate

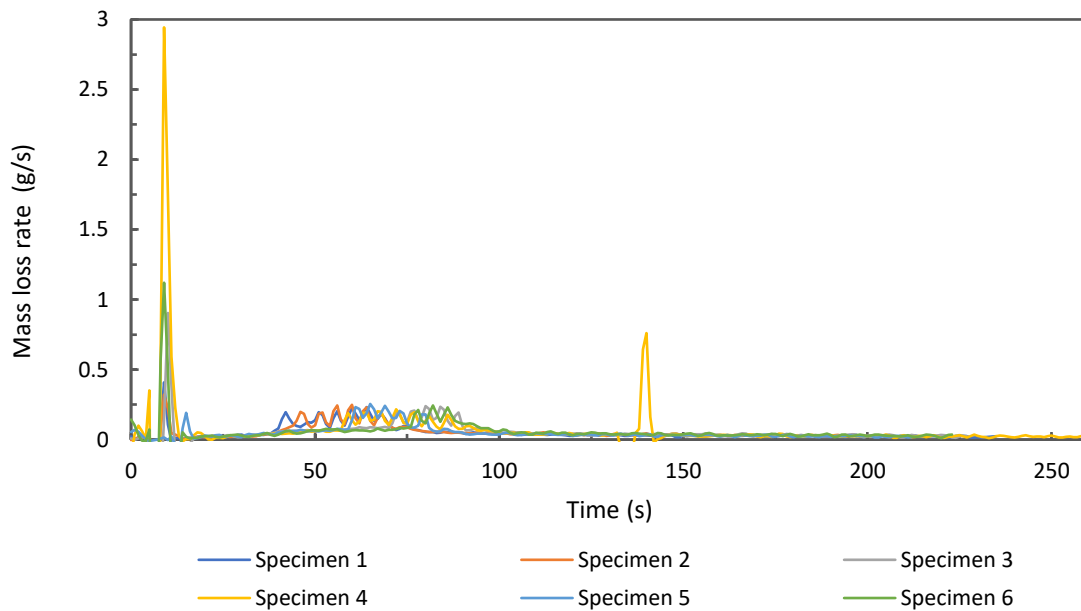


Figure 6 Mass loss rate vs time

Appendix B Test specimen photographs

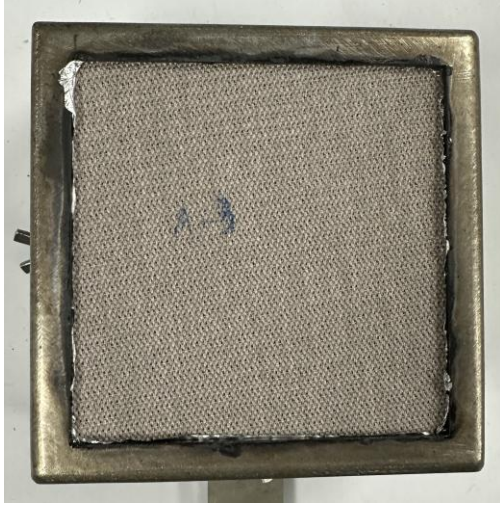


Figure 7: Specimen prior to testing



Figure 8: Specimen after testing



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