

CERTIFICATE

Material Fire Test Certificate

IGNL-8417-01-01C I01 R00

DATE OF TEST 06.11.2024
 ISSUE DATE 18.11.2024
 EXPIRY DATE 17.11.2029

AS 1530.1:1994
 Combustibility test for materials

SPONSOR
The Building Agency
 14 Link Drive, Wairau Park
 Wairau Auckland 0627

TEST BODY
Ignis Labs Pty Ltd
 ABN 36 620 256 617
 3 Cooper Place
 Queanbeyan NSW 2620
 Australia
 www.ignislabs.com.au
 (02) 6111 2909
Test body is the test location



NATA Accredited Laboratory
 Number: 20534 Site number: 24604
 Accredited for compliance with
 ISO/IEC 17025 - Testing



Test Supervisor
 Darren Laker



Technical Lead
 Jessica Ying

Specimen Identification

Aluco Dual

Specimen Description

The sponsor described the specimen as engineered solid aluminium panels. It is composed of 100% uncoated aluminium. It has a nominal thickness of 2.5 mm and has an end use as exterior cladding.

The specimen was received as aluminium discs with a measured nominal thickness of 1.17 mm. Half of the discs contained a centre hole, and the discs were sacked into specimens by Ignis Labs. Each specimen consisted of 40 discs, with 20 discs containing a centre hole.

Ignis Labs was not responsible for the sampling stage. All specimens were sampled and fabricated by the test sponsor. The test results apply to the specimens as received.

The test specimens are cylindrical, and each has:

(a) Nominal diameter (mm):	44.76
(b) Nominal height (mm):	49.72
(c) Nominal volume (cm ³):	78.21
(d) Nominal Mass (g):	201.03
(e) Colour:	Silver

Test Method

Five (5) specimens were tested in accordance with Australian Standard 1530 Methods for fire tests on building materials, components and structures, Part 1 – 1994: Combustible test for Materials. The test apparatus is constructed in accordance with the requirements of ISO 1182:2010 which has been verified to be equivalent to the apparatus requirements of AS 1530.1:1994 with the exception that a suitable alternative insulating material was used to fill the annular space between the furnace tubes, as specified in Clause 4.2 of ISO 1182:2010.

Observations

The tested specimens exhibited equivalent results, and none ignited. The specimens, being aluminium, have a melting temperature of approximately 600 °C and as such are considered to be thermally unstable at the test temperature. In accordance with Appendix A4 of AS 1530.1 for thermally unstable materials, the information recorded by specimen thermocouples may not be used to determine the combustibility. The tests were stopped when the specimens began to exhibit signs of melting. Specimens were stopped after approximately 27 to 36 minutes of testing without reaching equilibrium. After the test, the specimens were no longer shiny and had partially melted. Neglected mass loss was observed.

Results

The specimen achieved the following results:

	Symbol	Arithmetic
Mean furnace thermocouple temperature rise:	ΔT _f	10.04 °C
Mean specimen centre thermocouple temperature rise:	ΔT _c	0.13 °C
Mean specimen surface thermocouple temperature rise:	ΔT _s	5.63 °C
Mean duration of sustained flaming:		0.0 s
Mean mass loss:		0.01 %

Combustibility

The specimens are NOT deemed COMBUSTIBLE according to the test criteria specified in Clause 3.4 of AS 1530.1-1994

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Disclaimer These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use. The information contained in this document is provided for the sole use of the recipient and no reliance should be placed on the information by any other person. In the event that the information is disclosed or furnished to any other person, Ignis Labs Pty Ltd accepts no liability for any loss or damage incurred by that person whatsoever as a result of using the information.

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SUMMARY OF MEASUREMENTS AND OBSERVATIONS OF SPECIMENS UNDER TEST

Parameter	Symbol or expression	Unit Symbol	Specimen Results				
			1	2	3	4	5
Atmospheric temperature	-	°C	21.00	21.90	23.70	24.30	24.70
Humidity	-	%RH	54.10	55.60	42.30	39.80	41.40
Height	h	mm	49.94	49.40	50.07	49.59	49.60
Diameter	d	mm	44.78	44.63	44.98	44.63	44.80
Initial specimen volume	V	cm ³	78.61	77.24	79.52	77.54	78.15
Initial specimen mass	msi	g	201.39	201.15	200.40	201.35	200.88
Density	r	kg/m ³	2561.89	2604.22	2520.12	2596.72	2570.44
Sample holder weight	w	g	14.93	14.05	13.79	14.02	13.74
Final specimen mass	msf	g	201.41	201.13	200.43	201.37	205.43
Mass loss	$\Delta m = (msi - msf) / msi * 100$	%	-0.01	0.01	-0.01	-0.01	-2.27
Total duration of sustained flaming	Cumulative total of duration of flaming	s	0.00	0.00	0.00	0.00	0.00
Initial furnace thermocouple temperature	Tfi	°C	749.40	749.30	751.00	748.00	750.30
Maximum furnace thermocouple temperature	Tfm	°C	717.40	708.20	717.20	723.40	713.50
Final furnace thermocouple temperature	Tff	°C	707.40	698.40	703.70	714.00	706.00
Furnace thermocouple temperature rise	$\Delta T_f = T_{fm} - T_{ff}$	°C	10.00	9.80	13.50	9.40	7.50
Maximum specimen centre thermocouple temperature	Tcm	°C	646.87	647.87	650.27	647.27	649.77
Final specimen centre thermocouple temperature	Tcf	°C	646.87	647.87	650.00	647.27	649.40
Specimen centre thermocouple temperature rise	$\Delta T_c = T_{cm} - T_{cf}$	°C	0.00	0.00	0.27	0.00	0.37
Maximum specimen surface thermocouple temperature	Tsm	°C	689.77	684.57	693.67	673.57	696.67
Final specimen surface thermocouple temperature	Tsf	°C	679.87	678.77	692.40	664.07	695.00
Specimen surface thermocouple temperature rise	$\Delta T_s = T_{sm} - T_{sf}$	°C	9.90	5.80	1.27	9.50	1.67
Test duration	t	min	27.90	28.20	35.40	28.40	31.10

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END OF TEST CERTIFICATE