# AS 1530.1 -1994: Methods for fire tests on building materials, components and structures

Part 1: Combustibility test for materials



Report No: IGNL-2036-01

Report Sponsor: **Thermal Cladding Solution** 19 Endurance Avenue Queanbeyan NSW 2620

> Product Name TCS

Test Date: 13 July 2018

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# **DOCUMENT REVISION HISTORY**

Issue	Revision	Date	Purpose of Issue	Prepared by	Reviewed by
01	00 Draft 02	28 July 2018	Draft issue for client review	BHB	DC
01	01	29 July 2018	Approved to send to client	BHB	DC
02	00	07 March 2020	Revised	BHB	FW

Reviewed by Darren Cope Laboratory Manager

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## **1. TEST SUMMARY**

SPONSOR:	Thermal Cladding Solutions						
ADDRESS:	19 Endurance Avenue QUEANBEYAN NSW 2060 AUSTRALIA						
SAMPLE IDENTIFICATION:	Multilayer 10mm white render						
TRADE NAME:	TCS						
DESCRIPTION OF MATERIAL:	The tested material is an insulated render product predominantly a white Portland cement base which is a powdered solid, spray or troweled on to a wall.						
CONSTRUCTION	The test specimens are cylindrical and each have –						
OF TEST	(a). Nominal diameter:	45.21 mm					
SI LEIVILIN.	(b). Nominal height:	49.91 mm					
	(a). Nominal volume: 80124 mm <sup>3</sup>						
	(a). Nominal volume: 80124 mm <sup>3</sup> (c). Nominal mass: 40.44 g						
	(d). Colour:	White					
OBSERVATIONS:	Five (5) samples were tested in accordance with Australian Standard 1530 Methods for fire testes on building materials, components and structures, Part 1- 1994: Combustibility Test for Materials.						
	<insert photo=""></insert>						
TEST RESULTS:	Mean furnace thermocouple temperature rise $\Delta T_f$ : 10.62°C						
	Mean specimen centre thermocouple temperature rise $\Delta T_c$ : 0.10°C						
	Mean specimen surface thermocouple temperature rise $\Delta T_s$ : 12.3°C						
	Mean duration of sustained flaming: 0 seconds						
	Mean mass loss: 17.13 %						
COMBUSTIBILITY:	The material is NOT deemed COMBUSTIBLE according to the test criteria specified in clause 3.4 of as 1530.1-1994						

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.



### 2. TEST CALCULATIONS

Parameter	Symbol or	Unit			Results			
	expression	symbol	1	2	3	4	5	
Atmospheric temperature			18.50	19.90	21.10	21.00	20.30	
Humidity			35.20	32.50	31.70	31.80	32.40	
Height	h	mm	49.51	49.67	50.05	49.35	50.97	49.91
Diameter	d	mm	45.61	44.41	45.36	45.25	45.41	45.21
Initial specimen volume	V	mm <sup>3</sup>	80891.51	76938.83	80879.80	79362.29	82548.18	80124.12
Initial specimen mass	msi	g	46.50	48.50	48.00	50.50	50.50	48.80
Density	r	kg/m <sup>3</sup>	574.84	630.37	593.47	636.32	611.76	609.35
Sample holder weight	w	g	16.00	16.00	16.00	16.00	16.00	16.00
Final specimen mass	msf	g	39.00	38.50	40.50	41.00	43.20	40.44
Mass loss	∆m=(msi- msf)/msi*100	%	16.13	20.62	15.63	18.81	14.46	17.13
Total duration of sustained flaming	Cumulative total of duration of flaming*	S	0.00	0.00	0.00	0.00	0.00	0.00
Initial furnace thermocouple temperature	Tfi	°C	746.10	753.30	750.40	757.00	744.90	750.34
Maximum furnace thermocouple temperature	Tfm	°C	806.90	804.00	809.00	811.10	804.00	807.00
Final furnace thermocouple temperature	Tff	°C	794.30	798.10	796.00	797.00	796.50	796.38
Furnace thermocouple temperature rise	∆Tf=Tfm-Tff	°C	12.60	5.90	13.00	14.10	7.50	10.62
Maximum specimen centre thermocouple temperature	Tcm	°C	742.50	745.90	729.30	733.90	745.20	739.36
Final specimen centre thermocouple temperature	Tcf	°C	742.50	745.90	728.90	733.80	745.20	739.26
Specimen centre thermocouple temperature rise	ΔTc=Tcm-Tcf	°C	0.00	0.00	0.40	0.10	0.00	0.10
Maximum specimen surface thermocouple temperature	Tsm	°C	803.50	804.70	811.60	805.10	799.80	804.94
Final specimen surface thermocouple temperature	Tsf	°C	799.36	799.09	789.70	785.27	789.78	792.64
Specimen surface thermocouple temperature rise	ΔTs=Tsm-Tsf	°C	4.14	5.61	21.90	19.83	10.02	12.30
Test duration		min	30.00	30.00	29.97	30.00	30.00	29.99



#### FIGURE 1:



#### FIGURE 2:





#### FIGURE 3:



#### FIGURE 4:

SAMPLE 4 – TEST GRAPH





#### FIGURE 5:

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