Certificate of Test

QUOTE No.: NC8527 **REPORT No.: FNC12729**

COMBUSTIBILITY TEST FOR MATERIALS IN ACCORDANCE WITH AS 1530.1-1994

TRADENAME: Glass Fibre Reinforced Concrete (GRC)

SPONSOR:
Satu Bumi (Australia) Pty Ltd
Unit 2, 343 Packington Street
NEWTOWN VIC 3220
AUSTRALIA

DESCRIPTION OF TEST SAMPLE:
The sponsor described the tested specimen as a glass fibre reinforced concrete material comprised of Portland cement, silica sand, water, pozzolan, plasticizer, defoamer, Xypex water proofing admixture and AR glass roving.

Nominal thickness: 50 mm
Nominal density: 2200 kg/m^3
Colour: raw concrete grey

TEST PROCEDURE:
Five (5) samples were tested in accordance with Australian Standard 1530 Methods for fire tests on building materials, components and structures, Part 1- 1994: Combustibility Test for Materials.

An alternative suitable insulating material was used to fill the annular space between the furnace tubes, as specified in Clause 4.2 of ISO 1182:2010.

RESULTS:
The following calculated results were obtained, refer also to Summary of measurements:

Arithmetic mean	$= \frac{\Sigma\, results}{5}$
Mean furnace thermocouple temperature rise **(°C)**	0.39
Mean specimen centre thermocouple temperature rise **(°C)**	9.72
Mean specimen surface thermocouple temperature rise **(°C)**	0.44
Mean duration of sustained flaming (s)	0
Mean mass loss (%)	9.83

DESIGNATION:
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.

DATE OF TEST: 15 April 2021

Issued on the 17th day of May 2021 without alterations or additions.

Faustin Molina
Testing Officer

Stephen Smith
Team Leader, Reaction to Fire & Façade Fire Laboratory

End of Report

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

CSIRO INFRASTRUCTURE TECHNOLOGIES

14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555 www.csiro.au

SUMMARY OF MEASUREMENTS AND OBSERVATIONS OF SAMPLES UNDER TEST C12729

Parameters	Symbol or expression	Unit symbol	Sample Number				
			1	2	3	4	5
Initial specimen mass	m_{si}	g	130.07	126.82	129.74	127.36	130.97
Final specimen mass	m_{sf}	g	117.95	113.91	117.33	114.78	117.57
Mass loss	$\Delta m = \frac{Msi - Msf}{Msi} \times 100$	%	9.32	10.18	9.57	9.88	10.23
Total duration of sustained flaming	Cumulative total of duration of flaming*	s	0	0	0	0	0
Initial furnace thermocouple temperature	T_{fi}	°C	755	749	746	754	748
Maximum furnace thermocouple temperature	T_{fm}	°C	771	778	774	765	772
Final furnace thermocouple temperature	T_{ff}	°C	770	777	774	765	772
Furnace thermocouple temperature rise	$\Delta Tf = Tfm - Tff$	°C	1	1	0	0	0
Maximum specimen centre thermocouple temperature	T_{cm}	°C	757	757	760	750	753
Final specimen centre thermocouple temperature	T_{cf}	°C	742	752	747	741	746
Specimen centre thermocouple temperature rise	$\Delta Tc = Tcm - Tcf$	°C	15	5	13	9	7
Maximum specimen surface thermocouple temperature	T_{cm}	°C	770	780	778	773	773
Final specimen surface thermocouple temperature	T_{sf}	°C	770	779	777	773	773
Specimen surface thermocouple temperature rise	$\Delta Ts = Tcm - Tsf$	°C	0	1	1	0	0
Test duration	-	min	55	75	60	70	75

- Any individual duration flaming less than 5 seconds was discarded

End of Test Certificate

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