SHARP & HOWELLS
CHEMICAL ANALYSIS & MATERIAL TESTING LABORATORY

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REPORT NO.: 23 - 0588

Report Date:	18th October 2023
Client:	Firecrunch Australasia Pty Ltd
Address:	PO BOX 370, Pyrmont, NSW, 2009
Attention:	Peter Jones
By Email:	peter@firecrunch.com.au
Sample(s):	19mm MgO Board
Sampled By:	Client
Lab Number(s):	23/A/4364
Client Reference:	FCA TG19 KFLOOR 2700x600
BMRL NATA No.:	658
Date Received:	10th October 2023
Analysis / Project:	Load testing of Fibre Boards.

Notes:

This laboratory was not involved with, consulted, or requested to undertake sampling of the specimens provided, and testing of those test specimens has been conducted as received in the laboratory.

Accordingly, no responsibility is taken for the integrity, authenticity, appropriateness, or representativeness, of any of the test specimens provided and this must be taken into account when reviewing, comparing or checking the test results published in this report.

Unless otherwise notified, all samples will be disposed of in three months from reporting date.

Yours faithfully,

Sharp and Howells Pty. Ltd.

Daniel Donehue
BSc, MRACI
Scientist

Sean Caspar
BSc. Adv. Research (Hons.), MRACI.
Scientist / Assistant Laboratory Manager

TESTING METHODOLOGY:

The following tests were conducted:

Test:	Method:
Point-Load Failure of MgO Board	In-House
Uniform Distributed Load Failure of MgO Board	In-House

Additional information:

Samples of 19mm thick MgO board were cut into 600x650 mm & 400x600 mm sections respectively.

Framing timber was attached at 400mm & 600mm centres using 30mm Countersunk Rub Head Timber screws at 200mm spacing.

A point load was applied using a 100x100 mm steel plate.

A Uniform-Distributed Load was applied using a 18mm MDF board cut to 50mm shorter than the centres and the full width to avoid any compressive moments over the supports.

RESULTS OF TESTING:

1. **Point Load – 100x100mm (0.01m²):**

Lab Number:	**23/A/4364**	
Date of Test:	**18/10/2023**	
Test Dimensions, mm:	**400 x 400 x 19**	
Deflection:	**Breaking Load, kN:**	
	Panel 1	**Panel 2**
Span/500 (0.8mm)	1.5	0.9
Span/350 (1.1mm)	1.7	1.1
Span/300 (1.3mm)	2.0	1.5
Span/250 (1.6mm)	2.2	1.7
Failure Deflection, mm:	11.7	14.7
Failure Load, kN:	**6.1**	**6.2**
Force Sustained, kN/m²:	**610**	**620**

Lab Number:	**23/A/4364**	
Date of Test:	**18/10/2023**	
Test Dimensions, mm:	**600 x 600 x 19**	
Deflection:	**Breaking Load, kN:**	
	Panel 1	**Panel 2**
Span/500 (1.2mm)	0.4	0.5
Span/350 (1.7mm)	0.7	0.7
Span/300 (2.0mm)	0.8	0.8
Span/250 (2.4mm)	0.95	1.0
Failure Deflection, mm:	27.9	30.5
Failure Load, kN:	**5.2**	**5.3**
Force Sustained, kN/m²:	**520**	**530**

RESULTS OF TESTING:

2. Uniformly Distributed Load (UDL):

Lab Number:	**23/A/4364**	
Date of Test:	**18/10/2023**	
Test Dimensions, mm:	**400 x 400 x 19 (0.16m²)**	
Deflection:	**Breaking Load, kN:**	
	Panel 1	**Panel 2**
Span/500 (0.8mm)	0.7	0.7
Span/350 (1.1mm)	0.9	1.0
Span/300 (1.3mm)	1.1	1.5
Span/250 (1.6mm)	1.6	2.2
Failure Deflection, mm:	14.0	15.7
Failure Load, kN:	**17.3**	**15.5**
Force Sustained, kN/m²:	**108**	**96.9**

Lab Number:	**23/A/4364**	
Date of Test:	**18/10/2023**	
Test Dimensions, mm:	**600 x 600 x 19 (0.36m²)**	
Deflection:	**Breaking Load, kN:**	
	Panel 1	**Panel 2**
Span/500 (1.2mm)	0.7	0.5
Span/350 (1.7mm)	0.8	0.7
Span/300 (2.0mm)	1.0	0.8
Span/250 (2.4mm)	1.1	1.2
Failure Deflection, mm:	38.1	27.9
Failure Load, kN:	**16.0**	**15.5**
Force Sustained, kN/m²:	**44.4**	**43.0**