



Timgib Pty Ltd T/A
TGA ENGINEERS

ABN: 40 146 706 783

20 Sydney Road
BAYSWATER VIC 3153
PO BOX 301 BOX HILL 3128

Email: admin@tgaengineers.com
rob@tgaengineers.com

Tel: (03) 9780 4866

STRUCTURAL CERTIFICATION - COMMERCIAL

TGA Engineers were engaged to prepare and certify the 3RT Technologies Pty Ltd stair tread board span tables are in accordance with structural engineering design principles and the relevant Australian and New Zealand standards.

Characteristic design parameters have been tested and determined in accordance with AS4063.2-2010, *Determination of characteristics values* for the Blackbutt and Birch products adopted in the design.

The serviceability requirements have been checked in accordance with design criteria set out in Low Rise Domestic and Similar Framed Structures Part 1 Design Criteria. CSIRO Division of Building Research – Special Report.

Span tables nominating the minimum thickness for a given span are tabulated for commercial applications in table 1. The loadings adopted are in accordance with table 2.

The information detailed in this document is for interior applications only (ie not for use in external decks etc).

This document only provides information regarding structural sizing and all other regulatory requirements are to comply with the National Construction Code and local authorities.

The span tables are in accordance with engineering principles and the appropriate Australian and New Zealand Standards and in accordance with the requirements of the following documents.

References:

- AS 1170.1-2002 SAA Loading Code Part 1 Dead and Live Loads and Load Combinations.
- AS 1720.1-2002 SAA Timber Structures Code Part 1 Design Methods
- AS 1684.2 – 2002 SAA Timber Construction Structures Code
- Low Rise Domestic and Similar Framed Structures Part 1 Design Criteria. CSIRO Division of Building Research – Special Report.
- AS/NZS 4063.2-2010 Part 2 – Determination of Characteristics Values
- Stairs, Balustrades and Handrails, Class 1 buildings – constructions, wood solutions

TABLE 1 – Stair treads - Commercial

TYPE	Stair width (mm)				
	750	1000	1200	1500	1800
	Minimum thickness (mm)				
BLACKBUTT	28	34	40	50	60
BIRCH	32	41	48	60	72

TABLE 2 – Loadings (AS1170.1 – Structural design actions)

Occupancy	UDL (kPa)	PLL (kN)	Line Load (kN/m)
Residential	2.0	2.7	2.2
Commercial	4.0	4.5	2.2

Yours Sincerely,



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Robert A Nestic B.Eng (Hons)
Victoria Building Practitioners Board No. EC-47900