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STRUCTURAL CERTIFICATION - RESIDENTIAL

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 residential 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 - Residential

TYPE	Stair width (mm)				
	750	1000	1200	1500	1800
	Minimum thickness (mm)				
BLACKBUTT	26	32	38	48	58
BIRCH	30	39	45	56	68

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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Victoria Building Practitioners Board No. EC-47900