Uniflex Group (Aust) Pty Ltd

Span Tables for TRULAM Beams and Posts

Condition and Use Requirements

Uniflex Group (Aust) P/L

Span Tables for Merbau GL 18 Beams and GL 13 Posts

PREFACE

This document provides span tables for dressed seasoned Merbau Glued-laminated timber beams and posts which may be used to supplement the design information provided in AS 1684 Residential Timber Framed Construction, Part 2: Non-Cyclonic areas and Part 3: Cyclonic Areas, as applicable.

It provides builders, designers and other specifiers with a valuable source of information relating to Uniflex Gluelam for many common applications in domestic construction. The format of some tables within this document have been customized where appropriate to reflect common practices.

Span tables are included for:

GL 18 Beams and

GL 13 Posts

3 July 2014

Mr Albert Adi
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Dear Sir
Re: GL18 and GL 13 Span Tables

We hereby certify that the span tables prepared for Uniflex Group (Aust) P/L for merbau GL18 beams and GL13 Posts, have been prepared, generally in accordance with the design criteria contained in AS 1684.1 – 1999, Residential timber-framed construction, and therefore satisfy the intent of the structural requirements of the Building Code of Australia.

In preparation of these span tables, reliance has been placed upon the characteristic strength and stiffness material properties for GL 18 and GL13 given in AS 1720.1 2010, as certified by the GLTAA Qualification Certificate, May 2016.

The span tables have been prepared based on the general requirements of the following:

- AS1170.1 – Structural design actions Part 1 Permanent, imposed and other actions
- AS 4055 - Wind loads for housing
- AS 1720.1 - Timber Structures: Part 1 – Design methods
- AS1684.1 - Residential timber-framed construction, Part 1: Design criteria
- The design software, 'Timbaspan Professional', developed for the preparation of the span tables contained in AS 1684 – 2010.

This certification will remain valid until 10 July 2022 or earlier should the design properties or other criteria in the relevant Australian Standards be revised so as to require a revision of the span tables.

Yours Faithfully

Colin MacKenzie
FIEAust; CPEng; RPEQ; NPER

GLUED LAMINATED TIMBER
ASSOCIATION OF AUSTRALIA

CERTIFICATE OF QUALIFICATION

The Glued Laminated Timber Association of Australia (GLTAA) HEREBY CERTIFIES that **Uniflex Group (Aust) Pty. Ltd.** At their glulam plant in Pasuruan, East Jawa, Indonesia glulam plant is licensed by the Glued Laminated Timber Association of Australia to use the GLTAA Mark in respect of products listed hereunder which comply with applicable provisions of **AS/NZS 1328.1**, *Glued laminated structural timber Part 1: Performance requirements and minimum production requirements*, that the quality control system in effect at said plant is periodically inspected and verified by the Glued Laminated Timber Association of Australia Inspectorate at University of Melbourne and that, in the judgement of GLTAA, said company is capable of complying with applicable manufacturing and testing provisions of said Standard in respect of products manufactured at said plant and listed below. Conformance with the Standard in respect of any specific or particular product is the sole responsibility of the manufacturer; GLTAA's offers no guarantee of the product here-under but assurance that the said company is qualified to produce product meeting the said Standard and that its plant is periodically inspected and verified by the GLTAA Inspectorate.

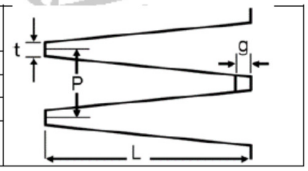
Product commercial Name	GL13 Posts (Up to 190x190mm), GL18 Glulam (Up to 290x45mm)
Certifed Company	*Uniflex Group (Aust) Pty. Ltd.*
Address	*51 Kawarren Street, North Balwyn VIC 3104*
Date of Registration	30 May 2016
Registration Number	G-25
Species	Merbau

Adhesive Types

Adhesive ID in the GLTAA qualified adhesives list	Manufacturer	Brand Name	Type
6	AkzoNobel	1734 Resin and 2734 hardener	Resorcinol formaldehyde PRF

Finger Joint Profile for GL)

Finger joint profile	High speed steel cutter GL18 (mm)	High speed steel cutter GL13 (mm)
Length (L)	18.5	15
Pitch (P)	5	4
Tip Width (t)	0.65	0.6
Tip gap (g)	0.5	0.5



Signature:
Director GLTAA Inspectorate
Date: **30 May 2016**

INTRODUCTION

This document provides span tables for the selection of structural timber members used in specific applications in the construction of domestic and similar framed buildings; Class 1 and Class 10 as defined in the Building Code of Australia (BCA).

The span tables provided were generated utilizing the structural design software *"Timber Span Professional"* and the design criteria of *AS 1684 Residential timber-framed construction, Part 1 : Design criteria.*

SCOPE

This document is primarily concerned with determination of timber member sizes. Other aspects associated with the successful design and construction of houses, including building practice, bracing and tie-down, is beyond the scope of this document. Users should consult the Building Code of Australia (BCA) and AS 1684 for additional information. The span tables given in this document must be used strictly in accordance with the building practice, definitions and general requirements given in AS 1684, Residential timber-framed construction, Part 2: Non-cyclonic areas and Part 3 Cyclonic Areas as applicable and accepts as given below.

APPLICATION

The information in this document is provided specifically for conventional timber framed buildings, and is applicable to single and two storey construction with a maximum roof pitch of 35º (70:100), and building shapes that are essentially rectangular or a combination of essentially rectangular elements. Other geometric building limitations shall be in accordance with As 1684.2 Clauses 1.4.4 to 1.4.7

DESIGN CRITERIA

The general basis of the design used in preparation of the span tables in this document is *AS 1684 Residential timber-framed construction, Part 1: Design criteria* and *AS 1720 Timber structures Part 1: Design methods.*

The design loadings recommended in *AS 4055 Wind loads for housing* were taken into account in the member computations, with appropriate allowances for the distribution of concentrated or localized loads over a number of members where relevant.

This document caters for non-cyclonic wind classifications N1, N2 & N3 and C1 and C2 as defined by *AS 4055 Wind loads for housing.*

DIMENSIONS AND TOLERANCES

The member sizes given in the span tables are the minimum dressed dimensions at the time of machining, subject to the following tolerances:

Depth	-2 mm, +2 mm,
Breadth	-2 mm, +2 mm

CHARACTERISTIC VALUES

The characteristic values for strength and stiffness used in the preparation of the span tables are those defined for glued laminated timber, GL18 and GL 13 respectively, by *AS 1720 Timber structures Part 1: Design methods.*

SPECIES, PROPERTIES AND USE

Some basic properties for seasoned Merbau are given in the table below:

PROPERTY	Timber Species – Merbau (Kwila)
Strength Group	SD3
Joint Group	JD2
Density (seasoned) (kg/m^3)	850
Tangential Shrinkage (%)	2.5
Above ground durability class (AS 5604)	Class 1
Bushfire resistant (AS 3959)	Yes
Termite resistant (AS 3660.1)	Yes
Lyctid Susceptibility	Susceptible

Uniflex Glued-laminated timber **shall not** be used in ground contact or in permanently damp situations but are **suitable** for used above ground, exposed to the weather and well ventilated.

DEFINITIONS APPLICABLE TO USE OF SPAN TABLES

Roof Load Width, Floor Load Width and Area supported referred to in the span tables shall be as defined in AS 1684.2 Clause 2.6.

VERTICAL LAMINATION

Where double beam members are given in the span tables i.e. 2/190x42, they shall be vertically laminated using nails or screws in accordance with AS 1684.2 Clauses 2.3. or, alternatively they be spaced and laminated in accordance with Clause 4.2.1.4.

NOTCHES AND HOLES

Member sizes are based on maintaining the full cross section of the member.

Beams and posts shall not be notched, trenched or housed within the span of the member.

Vertical holes through the depth of 42 mm thick members shall not be permitted.

Vertical holes up to 14 mm diameter may be drilled in the outer 1/3rd of the span, through the depth of double 42 mm thick members where they are nail or screw laminated. Vertical holes in the middle 1/3rd of the span of doubled members are not permitted.

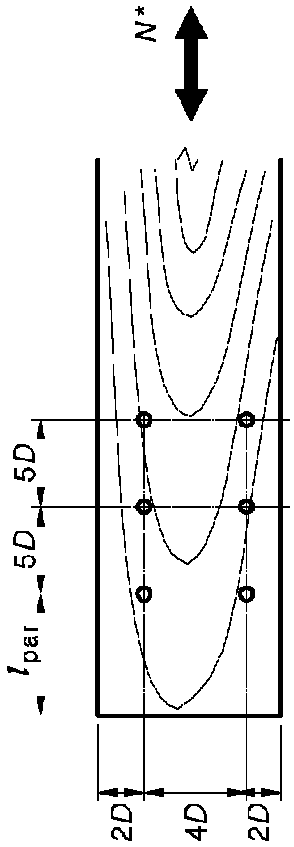
Horizontal holes through the thickness of members may be installed as shown below where:

N* and S* are load directions

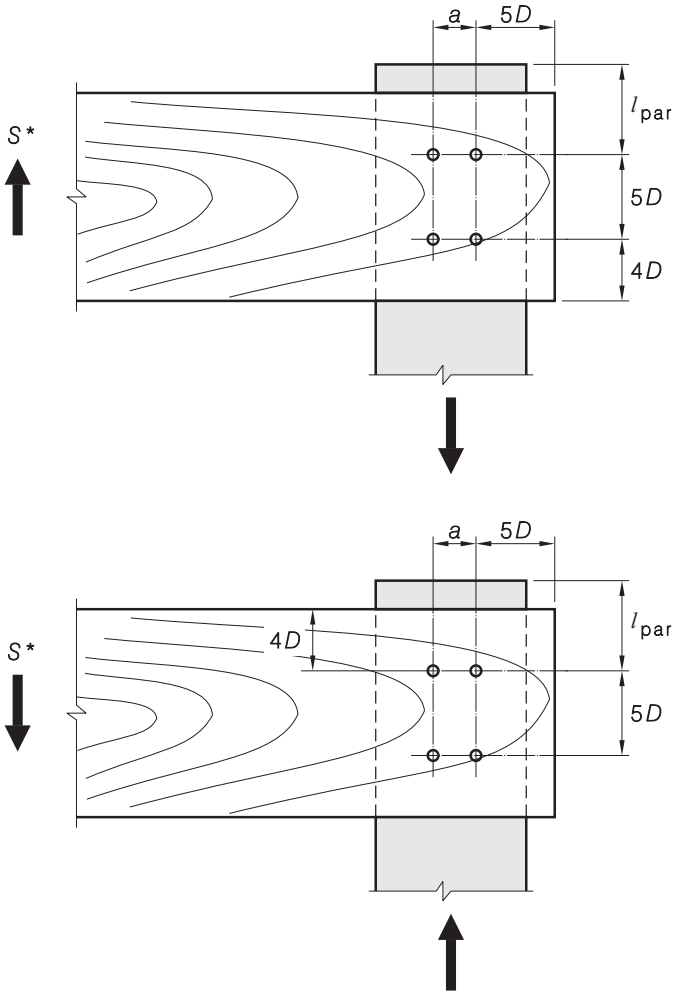
D = Dia of bolt

l_{par} is 6D and a is 3 D

Posts



Beams



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