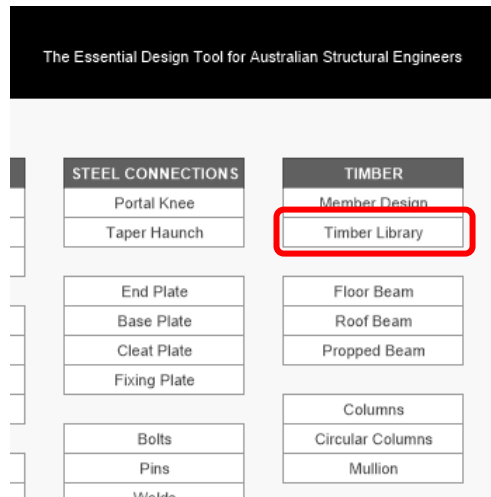




Custom Timber Grades

Rev 0, Created 7 June 2021

Using the [Timber Library] in Structural Toolkit, a custom timber grade can be created and loaded into the timber design modules. This guide aims to explain how this is done.



Creating the Custom Timber Grade

With the [Timber Library] module open, click on the [Custom] tab at the bottom. This will open an interface that allows manual values to be input, which will serve as the basis for the custom timber type.

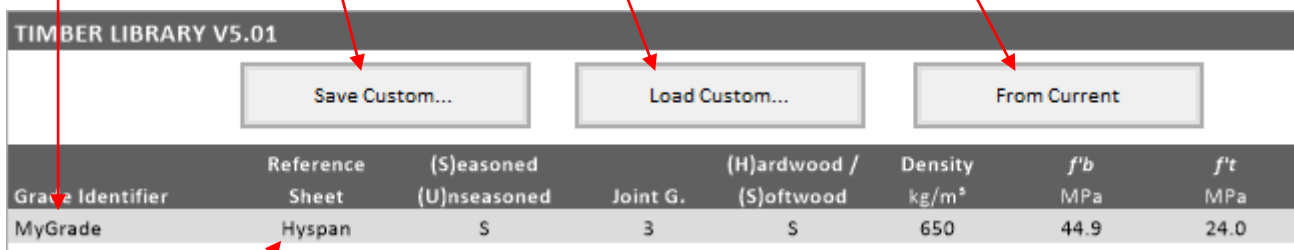


Name of new grade

Saves the input data to a file.

Loads an existing file.

Imports data from [Properties] tab (see below).



Determines the timber sizes available to the custom type. Refer tabs at the bottom of the module for info.

Size modifier depends on timber type. Refer AS 1720.1 for details on relevant grades.

f _s MPa	f _c MPa	E MPa	G MPa	Type	Apply Size modifiers
4.6	41.0	13,200	660	L	N



Rather than input the values manually for a custom timber grade, the [Properties] tab can be used to auto-fill the [Custom] tab using the [From Current] button. In the [Properties] tab, the user can select a "Grade" using the drop down, and then click [Get by Grade] to auto-fill the relevant values for that grade.

Stress grade - Table 2.4

Grade =	HYSPAN		Comment =		
Description =	hySPAN		Density =	650 kg/m ³	
Seasoned =	S (S)easoned,(U)nseasoned		Weight =	0.117 kN/m	
Type =	S (H)ardwood,(S)oftwood		Joint group = JD	3	
Sub type =	L (G)lulam,(M)GP,(L)vl,(O)ther		Strength group = SD	6	
f'b =	40.1 MPa	f'c =	41.0 MPa	E =	13200 MPa
f't =	21.2 MPa	f's =	4.6 MPa	G =	660 MPa
Dead only (pbd) =	0.99 Table E1	pcd =	1.20 Table E3		
pb =	0.99 Table E1	pc =	1.20 Table E3		
pbu =	0.91 Table E1 (r=1)	pbu =	1.08 Table E1 (r=1)		
j2 =	2 (δ Duration of load - Cl 2.4.1.2)	Axis =	X (X),(Y)		
Service class =	N (1),(2),(3),(S)evere/Adverse,(N)ot applicable		Normal axis		
Laminated =	Y (Y)es,(N)o				
No. Fixed Together =	1	g31 =	1.00	Bend. load effect ratio =	0.25
No. Members =	1	g32 =	1.00	Comp. load effect ratio =	0.25
Total No. Members =	1				
			Refer Cl 2.4.5		

Retrieve grade:
If you require a grade not listed method in the 'Select Member...' dialog t... use the 'Select Grade'... dialog t... Note, both the seasoning and h... must be set as required.

Get by Grade

Get by Description

Get Section Data

Select...

Service class:
Service class defined in AS/NZS

From here, go back to the [Custom] tab and click [From Current], which will transfer the data to this tab. From here the user can further edit the values as they desire.

Note that for some grades (e.g. HYSPAN), the size modifier is already built in as shown below. In these cases, the "Apply Size Modifier" should be set to "N".

Density	f'b	f't
kg/m ³	MPa	MPa
=IF(dD<95,50,50*(95/dD)^0.154)		

For other timber grades, the shear stress may be dependant on the direction.

f's
MPa
=IF(axis="X",4.6,4.6)

Once the data input by the user is satisfactory, [Save Custom...] can be clicked to save the custom timber type. Save the *.xml file to a library location that is not within the project.

Using the Custom Timber Grade

To load a custom timber grade into a design, after clicking the [Select] button on the side, click the [Load] button. This will allow the user to load in their saved file.



Section Type: F7 KD Pine **No. Members:** 1

Current Size: 400 x 45 F7 KD Pine

Section Size	Wt (kg/...	D (mm)	W (mm)	Ix (x10 ⁵ ...	A (mm ²)
290 x 45	7.178	290	45	91.459	13050
290 x 35*	5.583	290	35	71.135	10150
240 x 45	5.940	240	45	51.840	10800
240 x 35*	4.620	240	35	40.320	8400
190 x 45	4.703	190	45	25.721	8550
190 x 35	3.658	190	35	20.005	6650
140 x 45	3.465	140	45	10.290	6300
140 x 35	2.605	140	35	8.003	4000

Main Axis North of Lat. 25°S/16°S # -Not current, *-Check Availability

Select a member

Library Version: 5.01

OK Cancel

Once the file has been loaded in, the "Section Type" will become "Custom", and the "Reference Sheet" selected earlier will serve as the basis for the default sizes that can be chosen for the custom member. Clicking [OK] will then apply this member to the design.

Section Type: Custom material (From Hyspan) **No. Members:** 1

Current Size: 400 x 45 HYSpan

Section Size	Wt (kg/...	D (mm)	W (mm)	Ix (x10 ⁵ ...	A (mm ²)
360 x 45	10.530	360	45	174.960	16200
300 x 75	14.625	300	75	168.750	22500

Selecting a non-standard size for the new Grade

The new grade may have sizes that are not part of the standard sizes available. Use the [Custom] to input the size required.

Custom Section Size

Height: 420 mm

Width: 75 mm

OK Cancel

If you have any questions or require further guidance, contact our support team.