

AUSTRALIAN ENGINEERED SOLUTIONS

MEGAjoist™



MEGAjoist™
Installation Guide



To find out more about MEGAjoist™ products & system

visit our web site: www.megajoist.com.au

PH: 1300 794 840

A SOLID SOLUTION

Rev: 13/06/22



Australian
Engineered
Solutions



GENERAL

The MEGAjoist™ products comprise solid timber flanges, and intermediate timber webs that are glued together which acts more like a timber beam than a truss, thus giving the completed floor system a more solid feel.

- Conventional framing practice can be applied to MEGAjoist™ installations: however, to get maximum benefit from using the MEGAjoist™ system, builders are strongly advised to take advantage of its unique features by adopting the following guidelines.
- To meet the requirements of the current National Construction Code (NCC), all installation work must comply with AS 1684 – 2021 and where applicable with MEGAjoist™ installation guidelines and details.
- For details not covered in this manual please contact our registered structural engineer for further advice.

DESIGN:

FLOOR LOADING: The MEGAjoists have been designed for the following Dead and Live Loads:

Dead Loads – are constant in magnitude and fixed in location throughout the lifetime of the structure. Floor dead loads used for the MEGAjoist system is 0.5 kPa. (50 kg/m²). For any loads greater than this (eg. Lightweight concrete floor panels etc.) please contact our registered structural engineer for advice.

Live Loads – are temporary loads due to furniture or people which may vary over time. Floor live loads adopted are either 1.5 kPa (suitable for domestic floors) or 3 kPa (suitable for most commercial floor applications).

MEGAjoist CENTERS – The span tables are based on the floor truss centres being a maximum of 450mm.

SAFETY WARNING

Under no circumstances should the MEGAjoists be loaded up with heavy construction materials or any other excessive loads during installation and construction. It is the installer/builder's responsibility to ensure the floor joists are not loaded by more than 150kg/m² during the construction phase.

Overloading of the floor trusses may result in structural failure which could cause personal injury or death.



ROOF LOADING: The MEGArrafters have been designed for the following Dead and Live Loads:

Dead Loads – Lightweight sheet roof only of loads 0.4 kPa. (40 kg/m²) have been adopted for the MEGArafter system. For any loads greater than this, or concentrated loads (eg. Tiled roofs/hot water units etc.) please contact our registered structural engineer for advice.

Live Loads – are temporary loads due to people which may vary over time. Roof live loads used for production is either 0.25 kPa (25 kg/m²) as a distributed load, and 1.1 kN (110 kg) as a concentrated load. For any loading that exceeds this (eg. snow loading etc.) please contact our registered structural engineer for advice.

Wind Loads – are loads exerted on the trusses due to wind. These are an important consideration for the design of the trusses. The MEGArrafters have been designed for an N2 standard wind category under the NCC. For any higher wind load regions (eg. N3 or greater) please contact our registered structural engineer for advice.

SAFETY WARNING

Under no circumstances should the MEGArrafters be loaded up with heavy construction materials or any other excessive loads during installation and construction. It is the installer/builder's responsibility to ensure the floor joists are not loaded by more than 25kg/m² during the construction phase.

Overloading of the roof trusses may result in structural failure which could cause personal injury or death.

FLOOR RACKING LOADS:

Lateral wind loads on the on the end or side of a structure can cause wind racking loads or a shear effect through the ends of the trusses sitting on external load bearing walls.

Hence the trusses must be end-blocked with solid blocking or cross braces at the ends of the building and at 1800 max centres in accordance with AS1684.

FLOOR JOIST STRONG BACKS:

Strong backs should be 120 x 35 MGP10 as a minimum and fixed to the **top** of the joist as per the details at no more than 1500mm maximum centres.

OTHER FACTORS THAT CAN AFFECT FLOOR PERFORMANCE

- Method of installation – proper installation is essential for reliable performance.
- Fixing of sheeting to joist - flooring must be nailed and glued to the top chords of the trusses.
- Floor joist centres – a maximum of 450mm centres should be adopted.
- Correct installation of strong backs – using batten screws in order to eliminate squeaking.
- Deflection of the sheeting material between joists can be reduced by decreasing the joist spacing or using a thicker and/ or stiffer floor sheeting
- Floor loading/spans – The correct span tables should be used

HANDLING AND STORAGE

Care must be taken when the trusses are strapped down and transported to site.

The MEGAjoists can be laid flat nested in rows or stacked on top of each other, provided they are clear of ground and should not be left exposed to weather for extended periods of time without adequate protection.

Each truss should be inspected for damage prior to installation.

SAFETY WARNING

The reliability and safe use of these products can be seriously impaired if they are damaged. Do not install any damaged products. This could result in structural failure which could cause personal injury or death. Contact MEGAjoist on (03) 5981 4960 if any damage is noted.



TRIMMING LIMITATIONS FOR MEGAjoist PRODUCTS

The MEGAjoist products can be trimmed on site to a maximum of **10mm** in accordance with the trimming details.

Should the trusses require further trimming contact you MEGAjoist supplier for further advice.

DOCKING OF MEGAjoist PRODUCTS

The MEGAjoist products can be specifically designed for limited onsite docking – please contact your MEGAjoist supplier for further advice.

Under no circumstances should on site docking be undertaken without further advice.

SAFETY WARNING

Under no circumstances should the trusses be trimmed any more than 10mm or docked any more than allowed for by the specified docking amount.

Over docking will seriously compromise the performance of the trusses and may result in structural failure which could cause personal injury or death. Contact MEGAjoist on (03) 5981 4960 if you require any further advice.

MEGArafter BOTTOM CHORD TIES

Bottom chord ties 90 x 45 MGP10 as a minimum should be fixed to the bottom chord of the MEGArafters at no more than 5000mm max centres. Refer to the MEGArafter standard detail.

MEGArafter ROOF BRACING & TIE-DOWNS

Roof bracing should be installed in bays as close as 45 degrees as possible and in accordance with AS 1684.

Generally structural engineering drawings will show the bracing layout, alternatively the truss layout supplied will show the bracing plan.

The tie-downs used are proprietary products such as uni-grips etc. that should be installed as per the manufacturer's recommendations.

MEGAjoist SPAN TABLES:

JOIST	Flanges	FLOOR JOISTS (450 CTS)		RAFTERS raked at 1 to 2.5° (Sheet roof)	
		1.5 KPa	3.0 KPa*	600 CTS	900 CTS
		MAX. SPAN	MAX. SPAN	MAX. SPAN	MAX. SPAN
MJ250	90 x 45 MGP10 pine	4500	4000	5400	5100
MJ300	90 x 45 MGP10 pine	5000	4300	5800	5500
MJ350	90 x 45 MGP10 pine	5500	4800	6500	6100
MJ400	90 x 45 MGP10 pine	6000	5200	7000	6500
MJ450	90 x 45 MGP10 pine	6500	5800	7500	7000

Note: 3kPa trusses should have 190 x45 web blocks *

JOIST	Flanges	ALL FLOOR LOADS (UPTO 3.0kPa* LL)			
		450 CTS			
		MAX. SPAN	O/HANG		
MJ250	90 x 45 MGP10 pine	4000	1600		
MJ300	90 x 45 MGP10 pine	4300	1800		
MJ350	90 x 45 MGP10 pine	4800	2000		
MJ400	90 X 45 MGP10 pine	5200	2200		
MJ450	90 x 45 MGP10 pine	5800	2400		

Note: In compiling the span tables in this manual, the requirements of the relevant Australian standards and codes along with established industry standard design guidelines for Residential/commercial construction have been followed. In a particular, the following codes and references have been used:

- AS 1720.1 Timber Structure – design methods
- AS1170.1 Structural design actions-permanent imposed and other actions

SEVICEABILITY CRITERIA

Max Dead load deflection - lesser of span/300 or 12mm ($j_2 = 2$)

Max Dead & Live load deflection – lesser of span/300 or 12mm for roofs of 7mm for floors.

The 7mm maximum full dead and live load deflection criteria results in a stiff floor system.



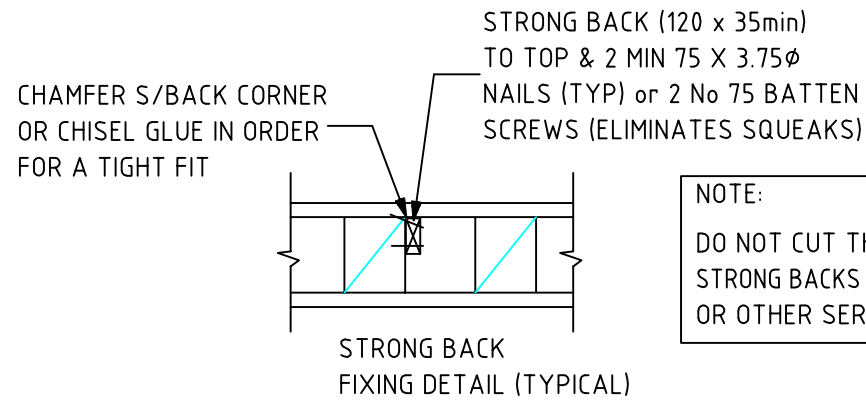
MEGAjoist & MEGArafter STANDARD DETAILS



MEGAjoist DETAILS

INSTALLER NOTE:
FOR ANY QUESTIONS REGARDING THESE DETAILS PLEASE CONTACT THIS OFFICE ON (03) 5981 4960 FOR TECHNICAL ADVICE.

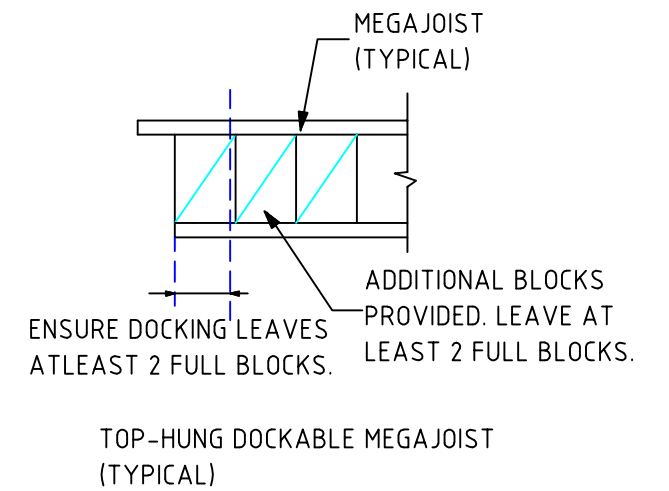
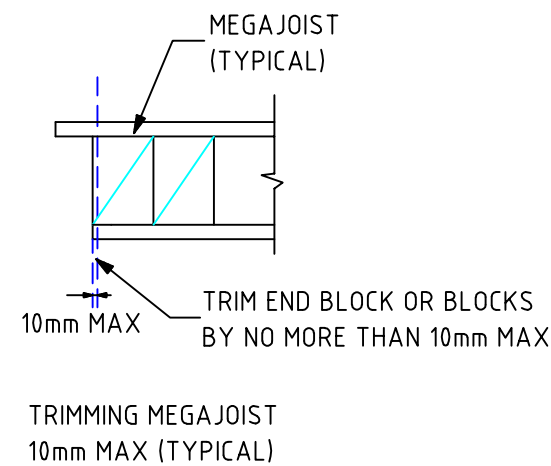
NOTE:
ALL JOISTS @ 450 MAX CTS U.N.O. FIXING DETAILS TO BE IN ACCORDANCE WITH MEGAjoist STANDARD DETAILS & THE CURRENT EDITION OF AS 1684.



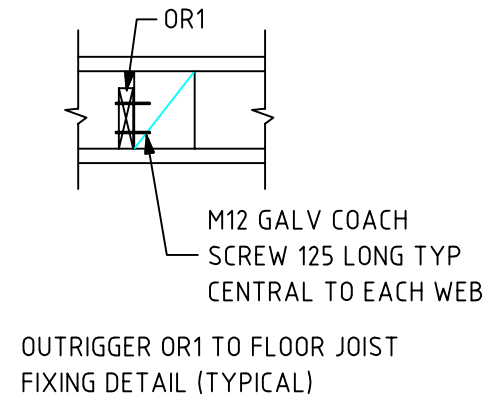
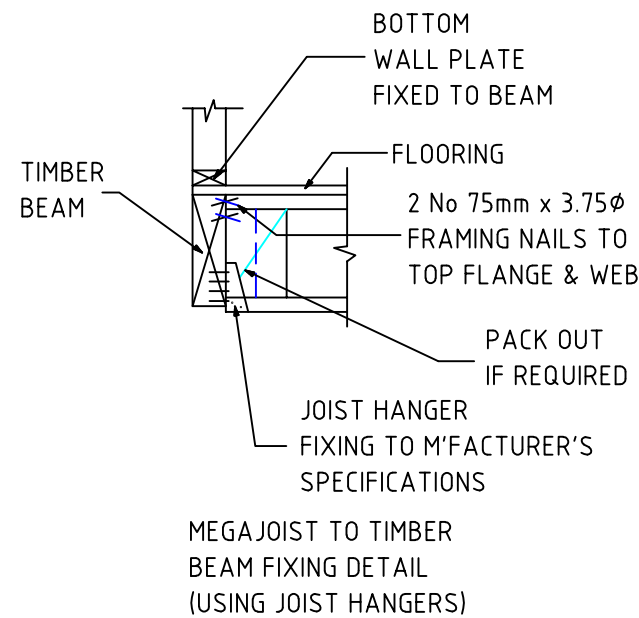
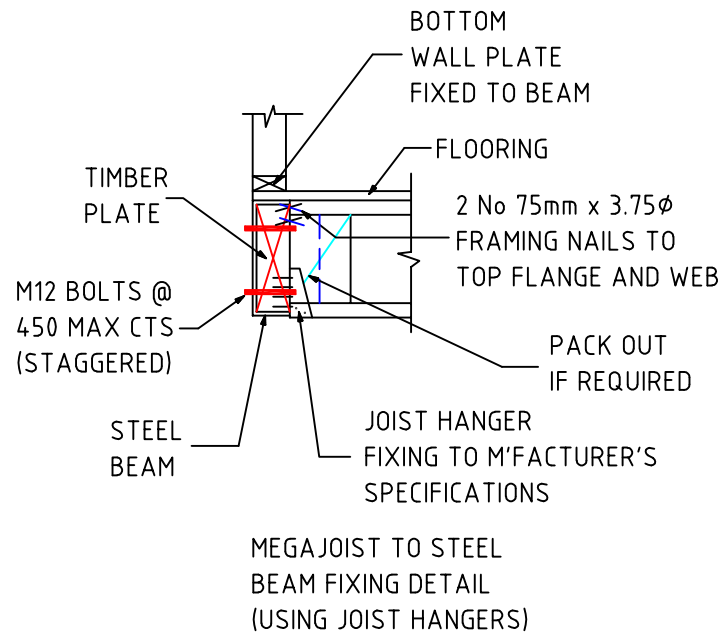
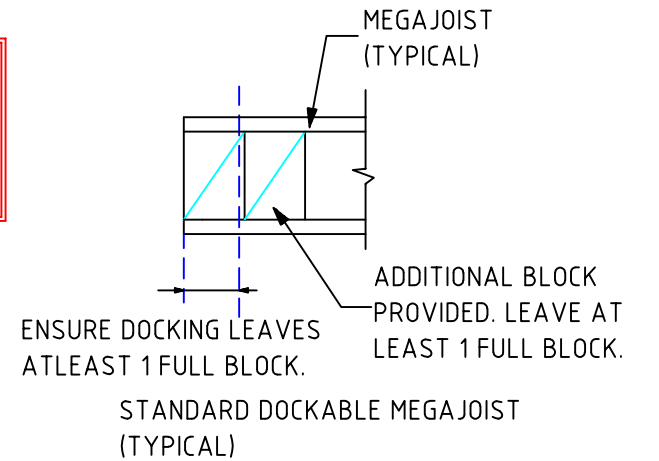
NOTE:
DO NOT CUT THROUGH STRONG BACKS FOR PLUMBING OR OTHER SERVICES

STRONG BACKS SHOULD BE INSTALLED:

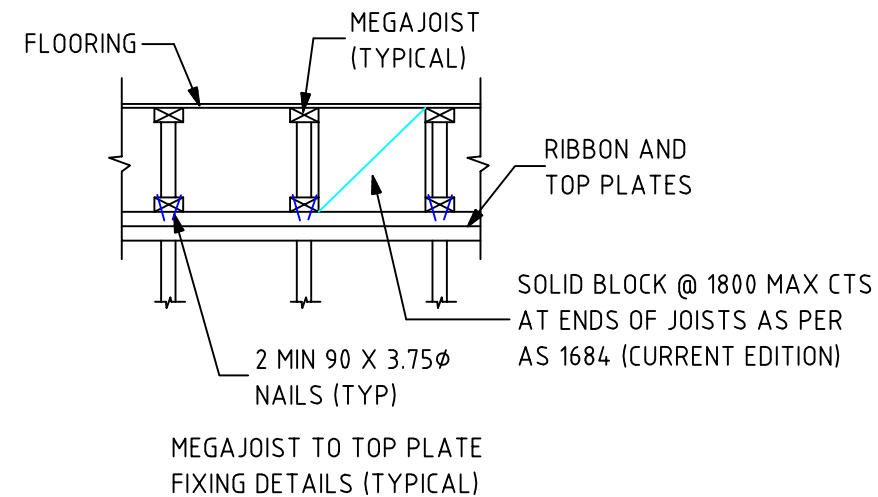
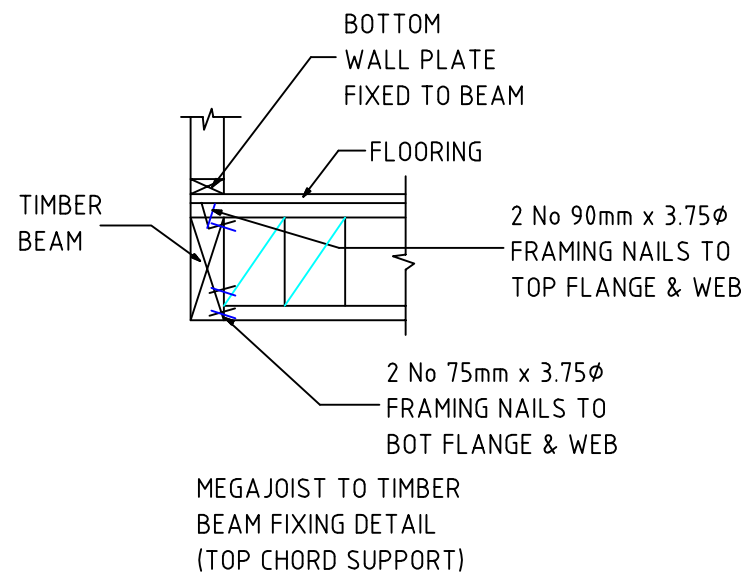
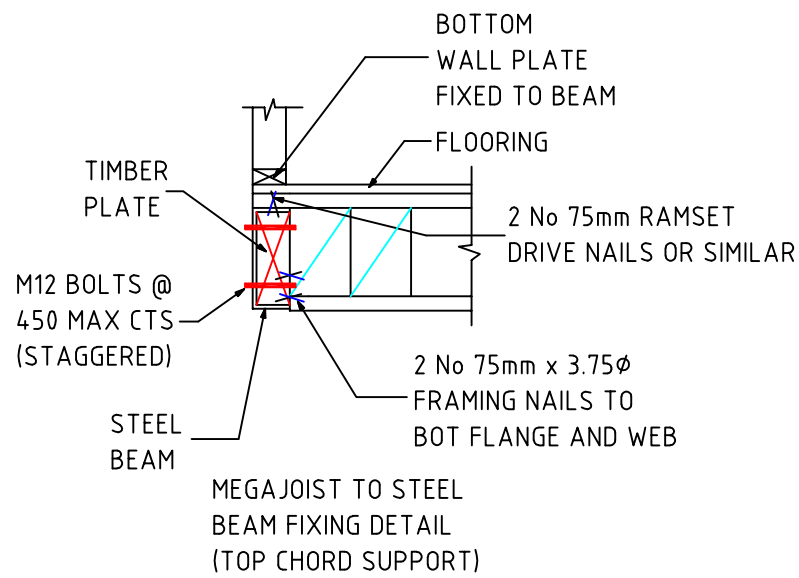
- 1) AT NO MORE THAN 1500mm MAX CTS
- 2) TO THE TOP FLANGE AS SHOWN ON THE DETAIL
- 3) USE FULL LENGTH STRONG BACK AS SUPPLIED
- 4) TO OVERLAP AT LEAST 3 JOISTS AT JOINS



INSTALLER WARNING - DANGER:
DOCKING OF TRUSSES BEYOND ALLOWABLE LIMITS MAY CAUSE STRUCTURAL FAILURE, INJURY OR DEATH. REFER TO INSTALLATION GUIDE FOR FURTHER INSTRUCTIONS.



INSTALLER WARNING:
FLOOR LIVE LOADS ARE DESIGNED FOR 150 kg/m². DO NOT LOAD UP FLOORS WITH HEAVY CONSTRUCTION MATERIALS. STRUCTURAL FAILURE, INJURY OR DEATH.



DETAILS: DATE: JUNE '22 REVISION 3



PO Box 554 Dromana, Vic 3936
Telephone: 5981 4960
ABN 99 137 010 489

TITLE

MEGAJOIST STANDARD INSTALLATION DETAILS

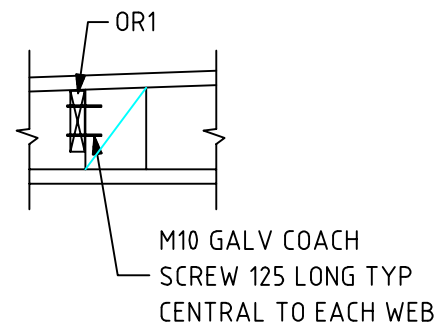
D01 Sheet number 1 of 2

REV:	Date	Issue
3	11/06/22	Details added
2	02/02/21	Some details amended
1	16/08/16	T-JOIST details added
0	9/02/14	Issued for construction

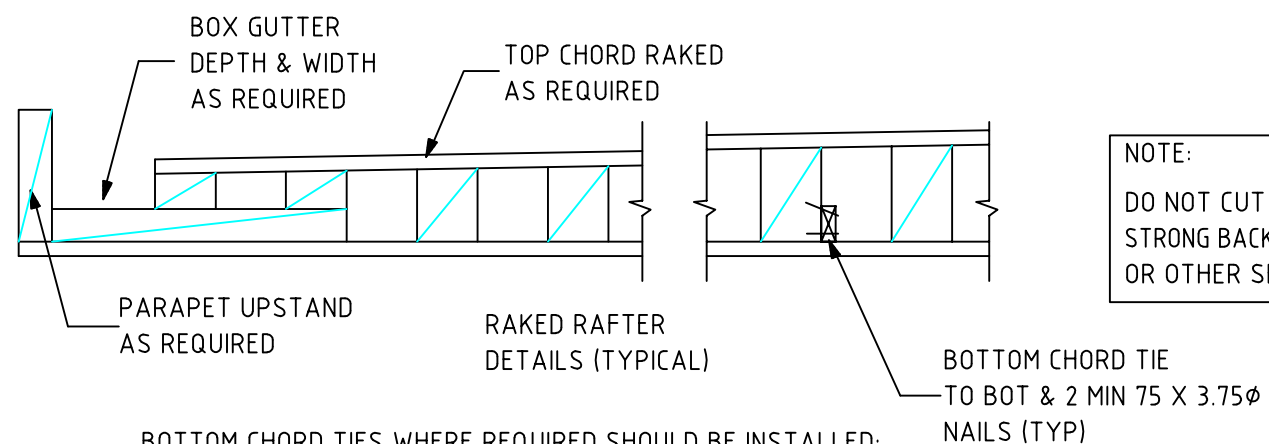
MEGArafter DETAILS

INSTALLER NOTE:
FOR ANY QUESTIONS REGARDING THESE DETAILS PLEASE CONTACT THIS OFFICE ON (03) 5981 4960 FOR TECHNICAL ADVICE.

NOTE:
ALL RAFTERS @ 900 MAX CTS U.N.O. ROOF BRACING AND TIE-DOWNS TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS1684.



OUTRIGGER OR1 TO RAFTER FIXING DETAIL (TYPICAL)

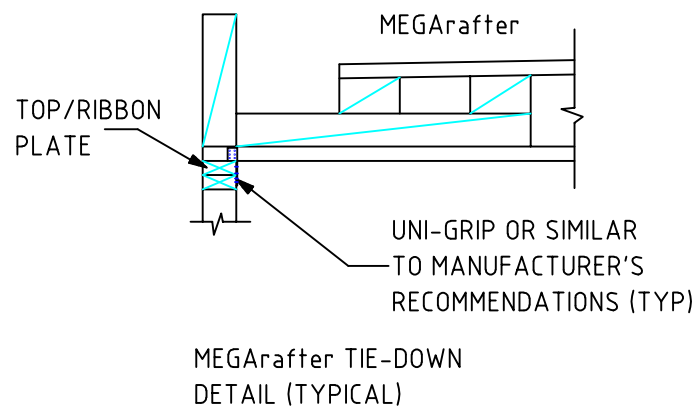


BOTTOM CHORD TIES WHERE REQUIRED SHOULD BE INSTALLED:

- 1) AT NO MORE THAN 5000mm MAX CTS (GENERALLY CENTRAL)
- 2) TO THE BOTTOM FLANGE AS SHOWN ON THE DETAIL
- 3) USE FULL LENGTH OF BOTTOM CHORD TIE AS SUPPLIED
- 4) TO OVERLAP AT LEAST 3 RAFTERS AT JOINS

INSTALLER WARNING:

ROOF LIVE LOADS ARE DESIGNED FOR 25 kg/m². DO NOT LOAD UP FLOORS WITH HEAVY CONSTRUCTION MATERIALS. STRUCTURAL FAILURE, INJURY OR DEATH.



MEGArafter TIE-DOWN DETAIL (TYPICAL)

DETAILS: DATE: JUNE '22 REVISION 0



PO Box 554 Dromana, Vic 3936
Telephone: 5981 4960
ABN 99 137 010 489

TITLE

MEGARAFTER STANDARD INSTALLATION DETAILS

D02

Sheet number
2 of 2

REV:	Date	Issue
0	11/06/22	Issued for construction