

GIRDER BRACKETS





FOR FIXING A STANDARD TRUSS TO A GIRDER TRUSS. AVAILABLE WITH OPTIONAL LOCATOR TABS

APPLICATION:

The FastFit MkIII Girder Bracket can be installed with either M12 bolts or MiTek anti-split self-drilling screws for speedy installation. It is also able to accommodate scissor trusses with a bottom chord pitch up to 20 degrees.

Uses

- FastFit MkIII Girder Brackets are designed to fix standard trusses to the side of girder truss bottom chords, using either fast fitting screws or M12 bolts. Alternatively, it can be fixed using the combinations of screws and bolts.
- FastFit MkIII Cyclonic Girder Brackets, with the addition of washers and supplementary screws, are suitable to restrain large uplift loads experienced in cyclonic areas.

SPECIFICATIONS:

Steel Grade	G300
Thickness (Total Coated)	1.55mm
Galvanized Coating	Z275
Bolts	Zinc plated M12 - Qty 4
Washers	Zinc plated 56mm diameter Qty – 2 for Bolt Fixing Qty – 6 for Cyclonic Fixing
Screws	MSA1430 – MiTek No. 14 x 30mm anti-split self-drilling HD galvanized screws Qty - 16 for Screw Fixing -or- Qty - 6 for Cyclonic Fixing
	MSA1465 – MiTek No. 14 x 65mm anti-split self-drilling HD galvanized screws for use with double ply girder trusses Qty - 8 for Screw Fixing -or- Qty - 6 for Cyclonic Fixing
	For triple ply girders, fix extra 3 MSA1465mm screws from behind
Nails	For anti-rotation tab use MiTek 30 x 2.8mm hot dipped galvanized reinforced head – Qty 2

Load capacity for each bearing type, as tabulated below, is shown on page 3.

Girder Bracket Fixing Type	Diagram 1	Diagram 2	Diagram 3	Diagram 4	Diagram 5
Fixing to Girder Truss	Screw	Screw	Bolt	Bolt	Bolt and Screw
Fixing to Supported Truss	Screw	Bolt	Bolt	Screw	Bolt and Washer
Design Capacity	Screw Fixing	Screw Fixing	Bolt Fixing	Bolt Fixing	Cyclonic Fixing

FASTFIT MkIII / MkIII CYCLONIC GIRDER BRACKET - LOAD DATA

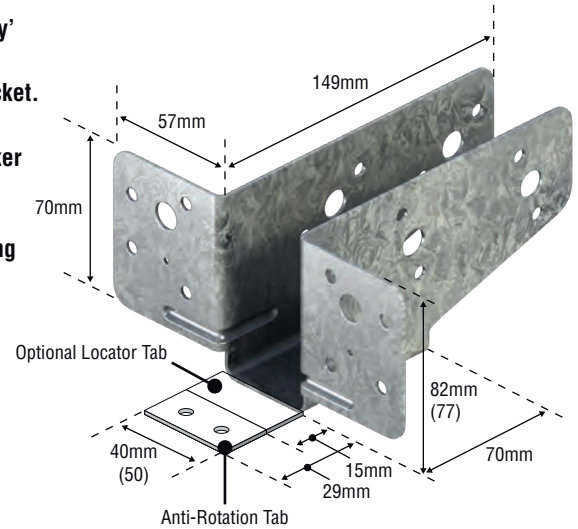
Screws or bolts may be used with this FastFit MkIII Girder Bracket. However, each method of fixing will provide a different design capacity. The values for Screw/Cyclonic Fixing method require anti-split plates on both sides of Girder Bracket and on both faces of girder bottom chord when the chord depth is greater than 90mm.

When using Screw Fixing method without anti-split plates, multiply 'DL Only' and 'DL+LL' capacities by 0.6.

Use reactions from truss designs to check suitability of selected Girder Bracket.

When different timbers are used in trusses, base 'DL only' and 'DL+LL' capacities on joint group of girder truss and base 'DL+WL' capacity on weaker joint group of girder and supported truss.

If the FastFit Girder Bracket is used with the Hip Girder Bracket to support a hip truss, reduce the capacity of the FastFit MkIII Girder Bracket by deducting half the hip truss reaction.



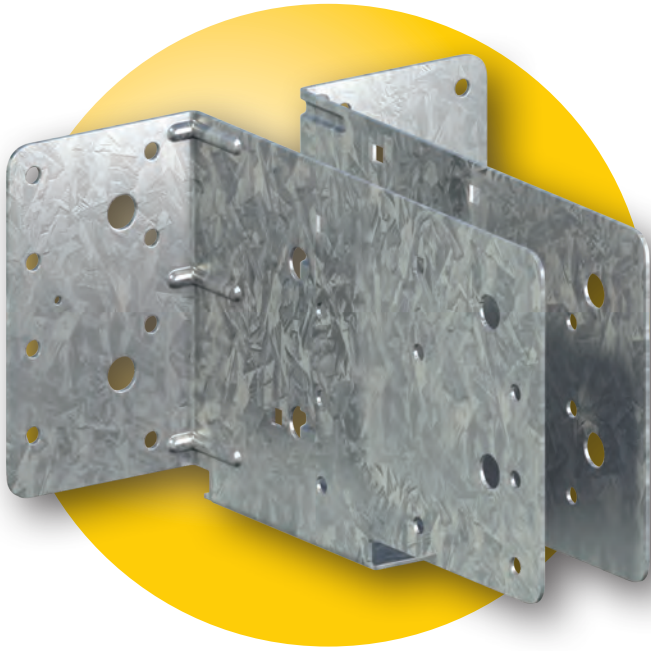
PRODUCT CODE & SIZES:	
GB340	to suit 35 and 38mm timber thickness.
GB340S	similar to GB340 but with locator tab.
GB340L	similar to GB340 but with anti-rotation tab.
GB350	to suit 45 and 50mm timber thickness.

Limit State Design Capacity (kN)										
Joint Group	Nominal Girder Thickness (mm)	Screw Fixing			Bolt Fixing			Cyclonic Fixing		
		DL only	DL+ Roof LL	DL + WL Uplift	DL only	DL+ Roof LL	DL + WL Uplift	DL only	DL+ Roof LL	DL + WL Uplift
		$k_1 = 0.57$	$k_1 = 0.77$	$k_1 = 1.14$	$k_1 = 0.57$	$k_1 = 0.77$	$k_1 = 1.14$	$k_1 = 0.57$	$k_1 = 0.77$	$k_1 = 1.14$
J2	38	9.1	12.3	9.8	6.3	8.5	9.8	9.1	12.3	12.9
	50	9.1	12.3	9.8	7.5	10.1	9.8	9.1	12.3	12.9
	2/38	9.1	12.3	9.8	7.5	10.1	9.8	9.1	12.3	12.9
J3	38	7.8	10.5	8.6	4.0	5.4	8.6	7.8	10.5	12.9
	50	7.8	10.5	8.6	5.1	6.9	8.6	7.8	10.5	12.9
	2/38	9.1	12.3	8.6	5.9	8.0	8.6	9.1	12.3	12.9
J4	38	5.6	7.6	5.5	2.5	3.4	5.5	5.6	7.6	5.5
	50	5.6	7.6	5.5	3.3	4.5	5.5	5.6	7.6	5.5
	2/38	8.6	11.6	5.5	4.3	5.8	5.5	8.6	11.6	5.5
J5	38	4.1	5.5	3.7	1.7	2.3	3.7	4.1	5.5	3.7
	50	4.1	5.5	3.7	2.2	3.0	3.7	4.1	5.5	3.7
	2/38	6.3	8.5	3.7	3.2	4.3	3.7	6.3	8.5	3.7
J6	38	2.6	3.5	1.9	0.9	1.2	1.9	2.6	3.5	1.9
	50	2.6	3.5	1.9	1.1	1.5	1.9	2.6	3.5	1.9
	2/38	4.0	5.4	1.9	1.7	2.3	1.9	4.0	5.4	1.9
JD3	35	9.1	12.3	9.8	6.1	8.2	9.8	9.1	12.3	12.9
	45	9.1	12.3	9.8	7.5	10.1	9.8	9.1	12.3	12.9
	2/35	9.1	12.3	9.8	7.5	10.1	9.8	9.1	12.3	12.9
JD4	35	7.8	10.5	9.0	4.5	6.1	9.0	7.8	10.5	12.9
	45	7.8	10.5	9.8	5.8	7.8	9.8	7.8	10.5	12.9
	2/35	9.1	12.3	9.8	7.5	10.1	9.8	9.1	12.3	12.9
JD5	35	5.6	7.6	6.5	3.2	4.3	6.5	5.6	7.6	6.5
	45	5.6	7.6	8.3	4.2	5.7	8.3	5.6	7.6	8.3
	2/35	8.6	11.6	8.3	6.1	8.2	8.3	8.6	11.6	8.3
JD6	35	4.1	5.5	4.4	2.2	3.0	4.4	4.1	5.5	4.4
	45	4.1	5.5	5.6	2.8	3.8	5.6	4.1	5.5	5.6
	2/35	6.3	8.5	5.6	4.4	5.9	5.6	6.3	8.5	5.6

Values in this table incorporate the Category 1 capacity factor (ϕ) for houses. For other categories, multiply the design capacities by the following factors. Refer to AS1720.1 for a full definition of each category.

Design capacities have been obtained from laboratory testing and procedures given in AS1720.1.

Category	1	2	3
Adjustment factor	1.00	0.94	0.88



FOR FIXING A STANDARD TRUSS TO A GIRDER TRUSS

APPLICATION:

The FastFit MkIV Girder Bracket is designed to secure a girder truss supporting a particularly high load to the side of a secondary girder truss bottom chord using either MiTek FastFit anti-split screws or M12 bolts.

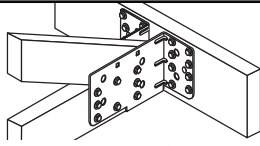
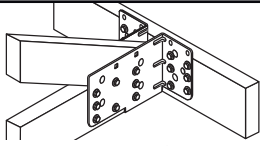
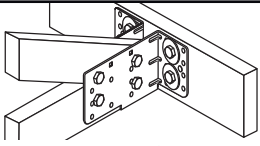
Uses

- FastFit MkIV Girder Bracket provides more economical connection than heavy steel brackets with similar design capacities.

SPECIFICATIONS:

Steel Grade	G300
Thickness (Total Coated)	1.55mm
Galvanized Coating	Z275
Bolts	Zinc plated M12 - Qty 8
Washers	Zinc plated 56mm diameter - Qty 8
Screws	MSA1430 – MiTek No. 14 x 30mm anti-split self-drilling HD galvanized screws Qty - 32 for fixing to girder bottom chord \geq 140mm Qty - 28 for fixing to girder bottom chord = 120mm
	MSA1465 – MiTek No. 14 x 65mm anti-split self-drilling HD galvanized screws for use with multi ply girder trusses Qty – 16 for fixing to girder bottom chord \geq 140mm Qty - 12 for fixing to girder bottom chord = 120mm
	For triple ply girders, fix extra 8 MSA1465mm screws from behind

Fix FastFit MKIV with fasteners as tabulated below and read design capacity value off load table on page 5 to each fixing type.

Girder Bracket Fixing Type			
Fixing to Girder Truss	Screw	Screw	Bolt Washers
Fixing to Supported Truss	Screw	Screw	Bolt
Design Capacity	Screw Fixing	0.75 x Screw Fixing	Bolt Fixing

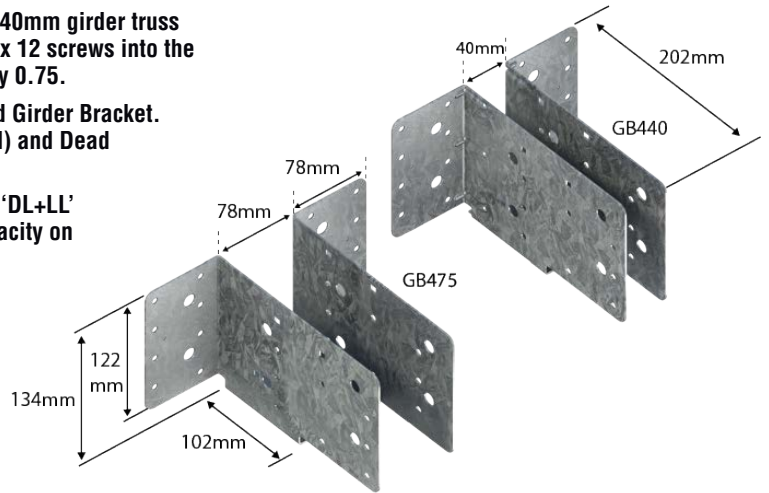
FASTFIT MKIV - LOAD DATA

The values in the table require 16 screws fixed into minimum 140mm girder truss bottom chord. When the girder truss bottom chord is 120mm, fix 12 screws into the girder truss bottom chord and multiply the values in the table by 0.75.

Use reactions from truss designs to check suitability of selected Girder Bracket. All load combinations of Dead, Dead plus Live (downward Load) and Dead plus Wind (Uplift) should be checked.

When different timbers are used in trusses, base 'DL only' and 'DL+LL' capacities on Joint Group of girder truss and base 'DL+WL' capacity on weaker joint group of girder and supported truss.

If the FastFit Girder Bracket is used with the Hip Girder Bracket to support a hip truss, reduce the capacity of the FastFit MkIV Girder Bracket by deducting half the hip truss reaction.



PRODUCT CODE & SIZES:	
GB440	to suit 35 and 38mm supported member thickness
GB475	to suit 70 and 75mm supported member thickness

Limit State Design Capacity (kN)							
Joint Group	Nom. Girder Thickness (mm)	Screw Fixing			Bolt Fixing		
		DL only	DL+ Roof LL	DL+WL Uplift	DL only	DL+ Roof LL	DL+WL Uplift
		$k_1 = 0.57$	$k_1 = 0.77$	$k_1 = 1.14$	$k_1 = 0.57$	$k_1 = 0.77$	$k_1 = 1.14$
J2	38	15.5	20.9	26.1	12.2	16.5	20.9
	50	15.5	20.9	26.1	14.3	19.3	20.9
	2/38	17.8	24.0	26.1	16.5	22.3	20.9
J3	38	13.7	18.5	20.9	7.7	10.4	15.4
	50	13.7	18.5	20.9	10.8	14.6	20.9
	2/38	15.8	21.3	20.9	13.0	17.5	20.9
J4	38	9.7	13.1	19.4	5.0	6.7	10.0
	50	9.7	13.1	19.4	7.0	9.4	14.0
	2/38	11.2	15.1	20.9	9.5	12.8	19.0
J5	38	7.1	9.6	14.2	3.3	4.4	6.6
	50	7.1	9.6	14.2	4.6	6.2	9.2
	2/38	8.1	11.0	16.2	7.0	9.5	14.0
J6	38	4.5	6.1	9.0	1.7	2.3	3.4
	50	4.5	6.1	9.0	2.3	3.2	4.6
	2/38	5.2	7.1	10.4	4.1	5.5	8.2
JD2	35	15.5	20.9	26.1	12.2	16.5	20.9
	45	15.5	20.9	26.1	14.3	19.3	20.9
	2/35	17.8	24.0	26.1	16.5	22.3	20.9
JD3	35	15.5	20.9	26.1	12.2	16.5	20.9
	45	15.5	20.9	26.1	14.3	19.3	20.9
	2/35	17.8	24.0	26.1	16.5	22.3	20.9
JD4	35	13.7	18.5	20.9	9.0	12.1	18.0
	45	13.7	18.5	20.9	11.5	15.6	20.9
	2/35	15.8	21.3	20.9	12.1	16.3	20.9
JD5	35	9.7	13.1	19.4	6.5	8.7	13.0
	45	9.7	13.1	19.4	8.3	11.2	16.6
	2/35	11.2	15.1	20.9	8.8	11.9	17.6
JD6	35	7.1	9.6	14.2	4.3	5.9	8.6
	45	7.1	9.6	14.2	5.6	7.6	11.2
	2/35	8.1	11.0	16.2	6.3	8.6	12.6

Values in this table incorporate the Category 1 capacity factor (ϕ) for houses. For other categories, multiply the design capacities by the following factors. Refer to AS1720.1 for a full definition of each category.

Design capacities have been obtained from laboratory testing and procedures given in AS1720.1.

Category	1	2	3
Adjustment factor	1.00	0.94	0.88

GENERAL

1. Locate bracket on girder truss bottom chord and hold in position by nailing through locating holes. If bracket has anti-rotation tab, fix nails to underside of girder.
2. If bolts are used to fix bracket, drill through 12mm pre-punched holes into girder. Fix bracket with bolts and washers. No additional fasteners are required for multiple ply girders beyond nominal fixing.
3. If screws are used in FastFit MkIII and MkIV Girder Bracket, drive screws through 7mm pre-punched holes into girder. Use 30mm screws in single ply and 65mm screws in double 35mm ply girder. With triple 35mm ply girder, use 65mm screws in bracket and fix 3 and 8 additional 65mm screws in back of girder truss behind FastFit MkIII and MkIV Girder Bracket respectively. Alternatively, use 100mm No. 14 Type 17 hex head screws in bracket. With multiple 50mm ply girder, use bolts or longer screws.
4. Install supported truss on bracket and position it hard against girder.
5. Fix supported truss to bracket according to diagram for type of Girder Bracket.

6. All Fasteners (bolts, screws and nails) must be tightly secured before trusses are loaded.

Nominal multiple ply truss fixing:

Over and above the additional fixing for different Girder Brackets in multiple ply girders, the following nominal fixing must also be installed.

Double truss - Fasten all chords and webs together with 3.05 x 75mm glue coated or ring shank nails (at angle), or No. 14 x 65mm screws (35mm timber) or 75mm screws (50mm timber) at 300 centres, staggered on one side only.

Triple truss - Fasten each outer ply to middle ply using details for double truss. In addition, join trusses at each panel joint with one M12 bolt.

For Girder Bracket MkIII in Cyclonic Areas.

Use 3 MiTek MSA screws in position shown to each wing in addition to M12 bolts. Washers are also required on both sides of flanges. If length of heel plate is less than 175mm then the supported truss should be either manufactured with GQ4075 Anti Split plates, or alternatively have 3T10 Tylok Plates installed on site. (See diagram page 10).

NOTES:

Apply to all Girder Bracket types:

1. Holes to be drilled to suit M12 bolts. Do not drill oversized holes. Use hexagonal head bolts.
DO NOT USE REDUCED SHANK OR CUP HEAD BOLTS.
2. Use 56 mm diameter x 3 mm round washer for M12 bolts.
3. Nails, where specified, to be MiTek 30 x 2.8mm diameter hot dipped galvanised reinforced head nails.
4. Minimum Girder Truss bottom chords apply to each type of Girder Bracket. Refer Installation Instruction drawings.
5. Where ceiling is to be fixed directly to bottom chord, notching of the heel of supported trusses is acceptable to obtain a better ceiling line.
6. Screws, where specified, to be MiTek MSA1430 or MSA1465 anti-split self-drilling HD galvanized screws.
DO NOT OVERTIGHTEN SCREWS.
Use suitable power screw driver (not power drill) with torque clutch properly adjusted, or depth limiting driver.
7. When driving screws into denser hardwood, screws should be driven in a single action. Do not partly drive screws and attempt to re-start. Remove partly driven screws and start process again.

For durability information, please refer to **Corrosion Resistance of MiTek Metal Connectors**, available on the MiTek website at mitek.com.au

This Certified Engineering Building Product complies with the National Construction Code and Australian Standards.

FASTFIT GIRDER BRACKETS - INSTALLATION

FASTFIT MKIII					
Fixing Type		Fixing to Girder Truss	Fixing to Supported Truss		
SCREW ONLY FITTING		8 MiTek Screws	8 MiTek Screws		
			8 MiTek Screws	2 M12 Bolts	
				2 M12 Bolts + 2 Washers	2 M12 Bolts
					2 M12 Bolts + 2 Washers

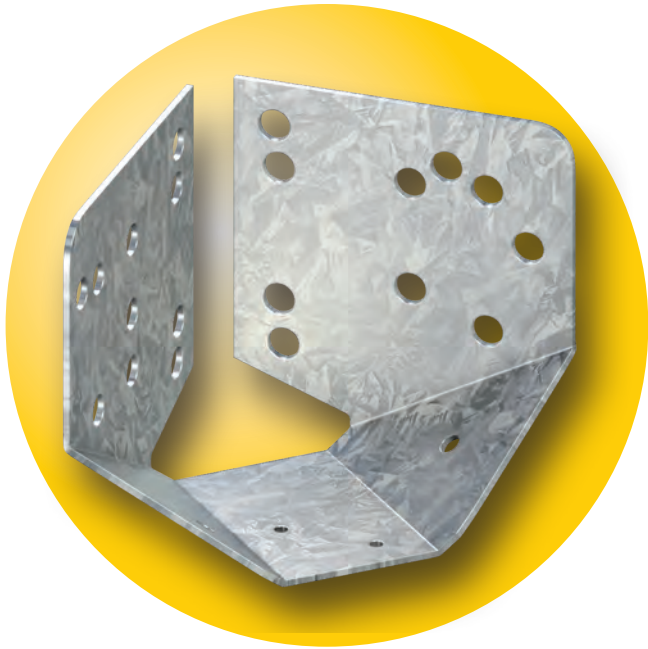
FASTFIT GIRDER BRACKETS - INSTALLATION

FASTFIT MKIII

Fixing Type		Fixing to Girder Truss	Fixing to Supported Truss
CYCLONIC FITTING		6 MiTek Screws and 2 M12 Bolts + 2 Washers	2 M12 Bolts + 4 Washers

FASTFIT MKIV

Fixing Type		Fixing to Girder Truss	Fixing to Supported Truss
SCREW FITTING FOR 120MM GIRDER TRUSS BOTTOM CHORD		12 MiTek Screws	16 MiTek Screws
SCREW FITTING FOR 140MM GIRDER TRUSS BOTTOM CHORD		16 MiTek Screws	16 MiTek Screws
BOLT ONLY FITTING		4 M12 Bolts + 8 Washers	4 M12 Bolts



FOR FIXING HIP TRUSS/RAFTER TO GIRDER TRUSS BOTTOM CHORD

APPLICATION:

A Hip Girder Bracket HGB35 can be installed on one or both sides of FastFit Girder Brackets GB340, GB440 and GB475 using screw holes which are aligned with the screw holes in the FastFit Girder Bracket.

Uses

- The Hip Girder Bracket is used in conjunction with FastFit Girder Brackets for fixing a hip truss/rafter to a girder truss bottom chord at the girder to girder junction.

SPECIFICATIONS:

Steel Grade	G300
Thickness (Total Coated)	1.55mm
Galvanized Coating	Z275
Screws	MSA1430 – MiTek No. 14 x 30mm anti-split self-drilling HD galvanized screws Qty – 16 for fixing with GB340 Qty – 32 for fixing with GB440/GB475
	MSA1465 – MiTek No. 14 x 65mm anti-split self-drilling HD galvanized screws for use with double ply girder trusses Qty – 8 for fixing with GB340 Qty – 16 for fixing with GB440/GB475
	For triple ply girders, fix extra MSA1465 screws from behind Qty – 3 for fixing with GB340 Qty – 8 for fixing with GB440/GB475
Nails	MiTek 30 x 2.8mm hot dipped galvanized reinforced head – Qty 2 (optional)

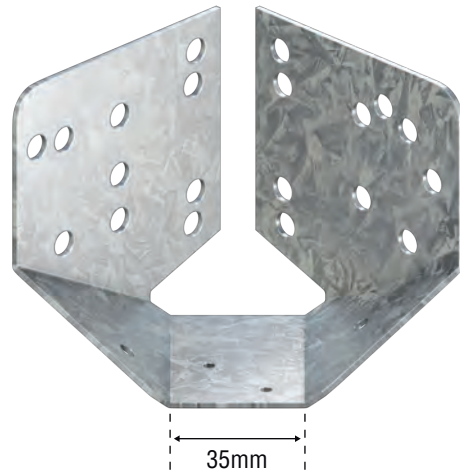
HIP GIRDER BRACKET

PRODUCT CODE & SIZES:

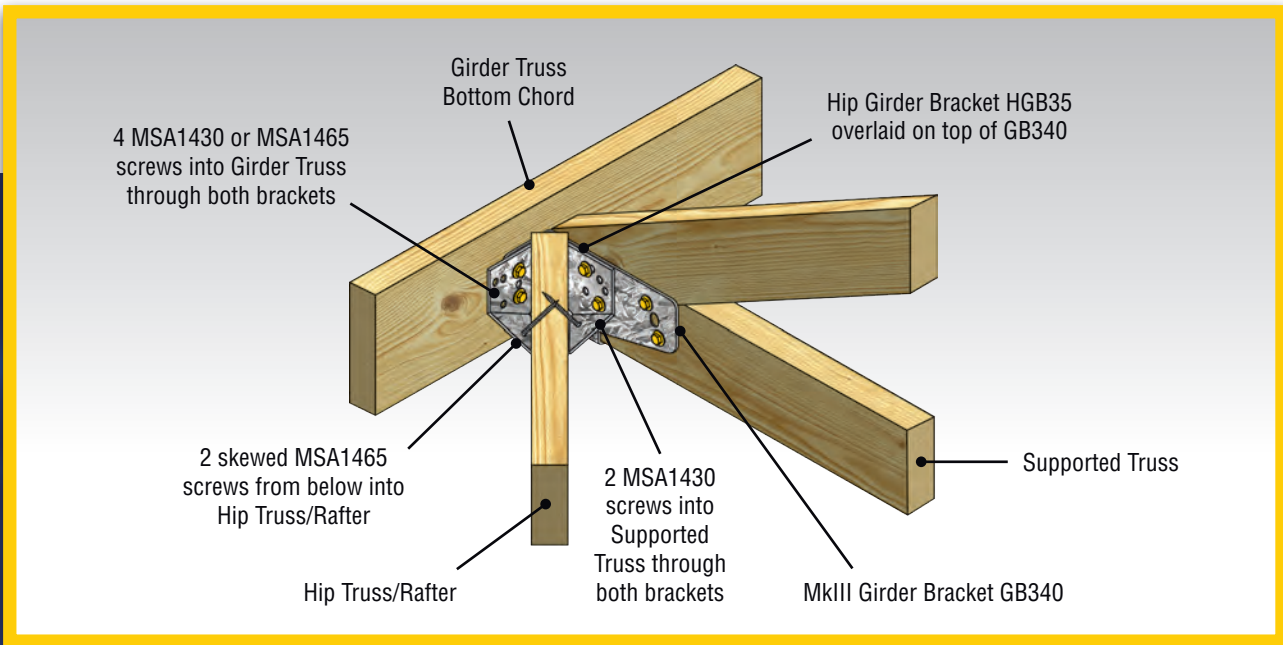
HGB35	to suit GB340, GB440 and GB475
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Limit State Design Capacity (kN) for Joint Group of Hip Truss/Rafter

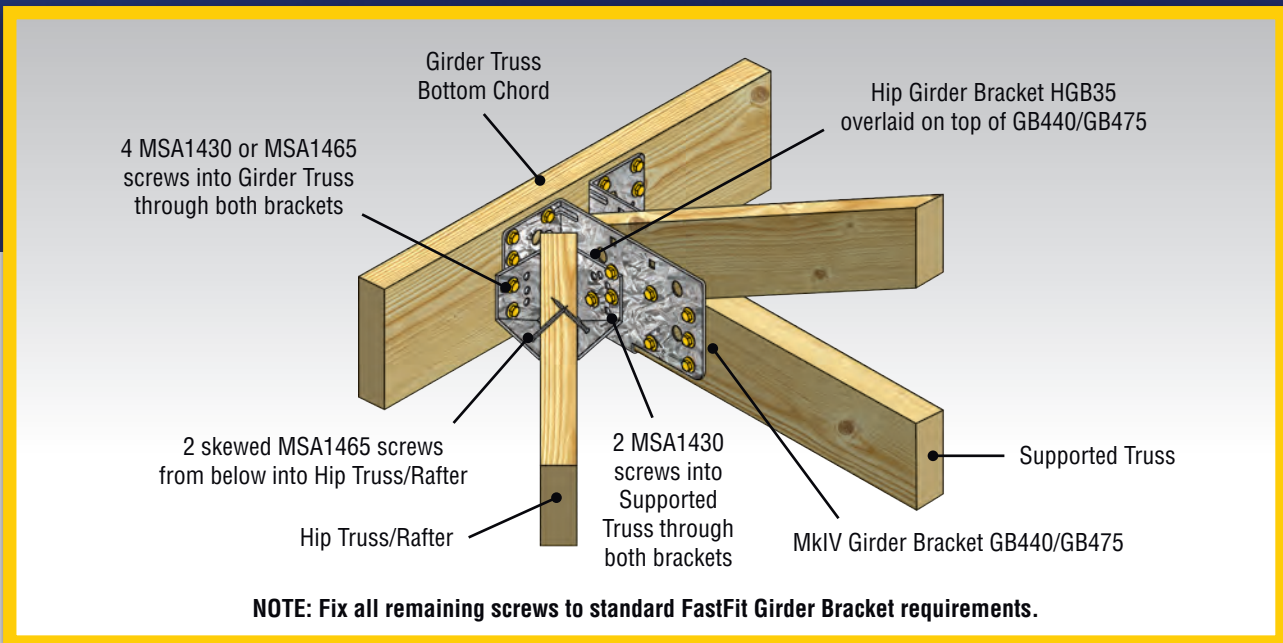
Joint Group	DL only	DL + Roof LL	DL + WL Uplift
JD5 or better	3.5	4.7	4.0



FIXING HGB35 WITH FASTFIT MKIII GIRDER BRACKET (GB340)

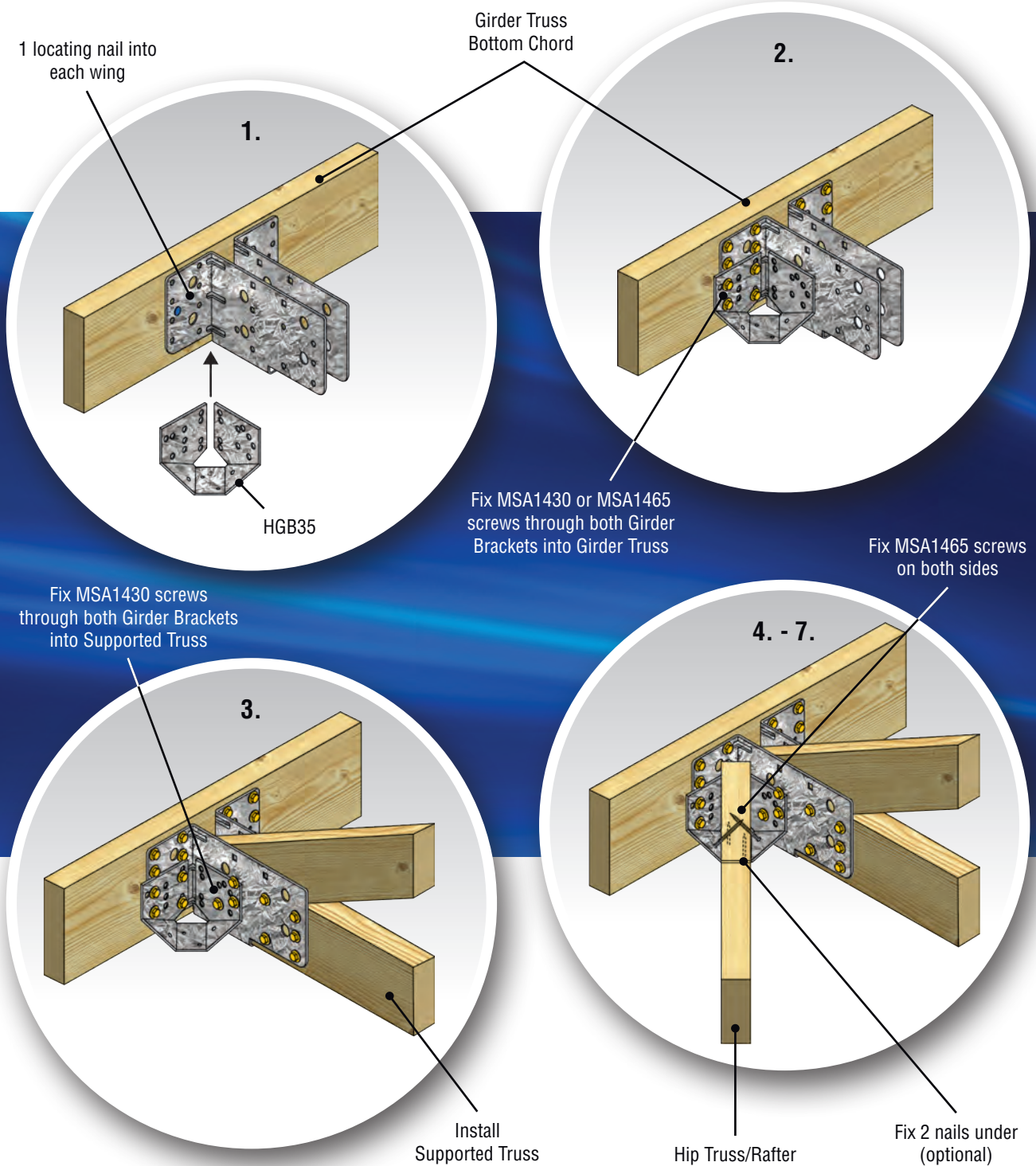


FIXING HGB35 WITH FASTFIT MKIV GIRDER BRACKET (GB440/GB475)



HIP GIRDER BRACKET

1. Locate FastFit Girder Bracket on girder truss bottom chord and hold in position by nailing through small locating holes.
2. Position and align the screw holes of the Hip Girder Bracket HGB35 with the screws holes in the FastFit Girder Bracket.
3. Drive four screws in HGB35 through common holes in FastFit Girder Bracket wing. Drive all remaining screws into wings of FastFit Girder Bracket. Use MSA1430 screws in single ply and MSA1465 screws in double ply 35mm girder. Refer to FastFit Girder Bracket instructions on page 8 for triple 35mm ply girders and multiple ply 50mm girders.
4. Install supported truss on FastFit Girder Bracket and position it hard against the girder truss to ensure all trusses are plumb.
5. Drive 2 MiTek screws through common holes in HGB35 and FastFit Girder Bracket flange and fix the remaining screws into the supported truss.
6. Position hip truss/rafter on HGB35 and optionally secure with 2 nails under.
7. Drive MSA1465 screws through both inclined sides of HGB35 into hip truss/rafter.



G I R D E R B R A C K E T S

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