

Boomerang Connector

FOR FIXING JACK/CUT-OFF TRUSSES TO HIP/BOOMERANG TRUSSES

The Boomerang Connector has been developed to provide a strong and economical connection between cut-off trusses and boomerang girders, or between large jack trusses and hip trusses.



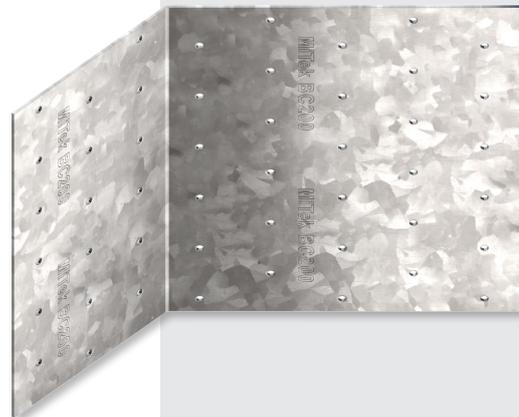
For durability information, please refer to **Corrosion Resistance of MiTek Metal Connectors**, available on the MiTek website at mitek.com.au

USE

- Boomerang Connectors are used in truss-to-truss connections where the trusses meet at an irregular angle.
- They complement the Creeper Connector range with a higher load capacity.

ADVANTAGES

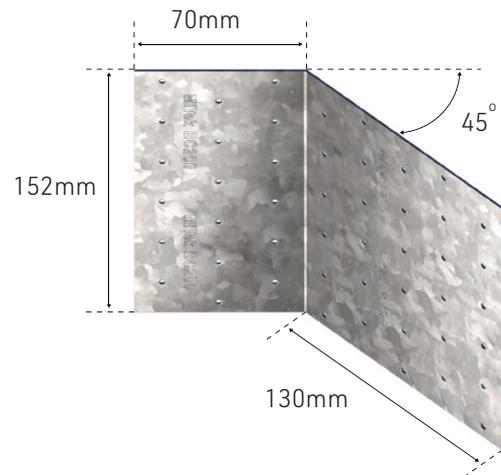
- Boomerang Connectors provide the most economical connection for medium span cut-off trusses.
- They are suitable for both single and double mitre cut jack/cut-off trusses.
- They can be bent to suit any intersecting truss skew angle between 17° and 80°.
- One size fits both left and right handed truss intersections.



This certified Engineered Building Product complies with the National Construction Code, Australian Standards and is CodeMark certified.

SPECIFICATIONS

Steel Grade	G300
Thickness (Total Coated)	1.2mm
Galvanised Coating	Z275
Nails	MiTek 30 x 2.8mm hot dip galvanised reinforced head
Size	152 x 200mm
Product Code	BC200



MAXIMUM TRUSS SPAN

Table 1 gives the maximum span recommendations of jack/cut-off truss connected to the hip/boomerang girder truss with a Boomerang Connector.

		Maximum Jack/Cut-off Truss Span (m)						
		Wind Classification						
Joint Group								
	N2	N3	N4	N5	C1	C2	C3	
Sheet roof, 20° roof pitch & plaster ceiling @900mm crs								
JD3	16.0	16.0	10.3	6.3	9.3	5.8	3.9	
JD4	16.0	16.0	10.3	6.3	9.3	5.8	3.9	
JD5	15.5	15.5	10.3	6.3	9.3	5.8	3.9	
Concrete tile, 20° roof pitch & plaster ceiling @600mm crs								
JD3	16.0	16.0	16.0	11.8	16.0	10.2	6.3	
JD4	15.8	15.8	15.8	11.8	15.8	10.2	6.3	
JD5	12.2	12.2	12.2	11.8	12.2	10.2	6.3	

LOAD DATA

The design capacities of a Boomerang Connector for different timber joint groups are listed in Table 2. These capacities include 3/75mm framing nails fixed through chords.

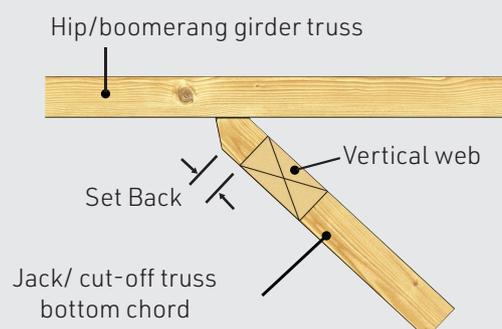
Full capacity is achieved when the vertical web is set back no more than 20mm. Reduce these capacities by 33% when the setback is greater.

		Limit State Design Capacity (kN)		
		DL Only	DL + Roof LL	DL + WL
JD2	6.0	8.2	7.1	
JD3	6.0	8.2	7.1	
JD4	4.6	6.3	7.1	
JD5	3.8	5.1	7.1	

Values in 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

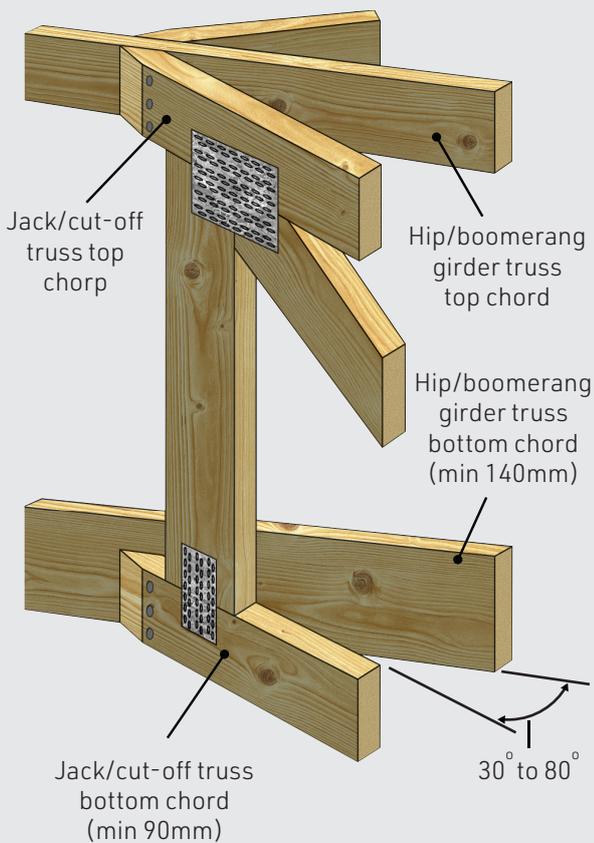


BOOMERANG CONNECTOR INSTALLATION

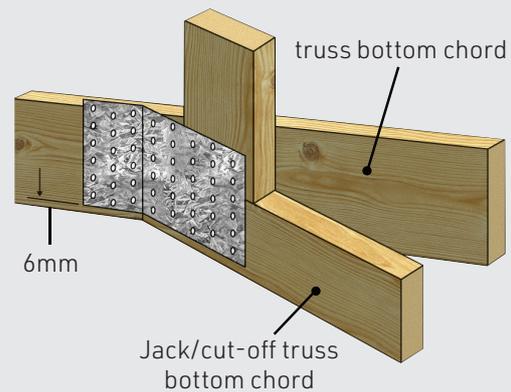
Single fold fixing method

Suits single or double mitred jack/cut-off truss with skew angle from 30° to 80°.

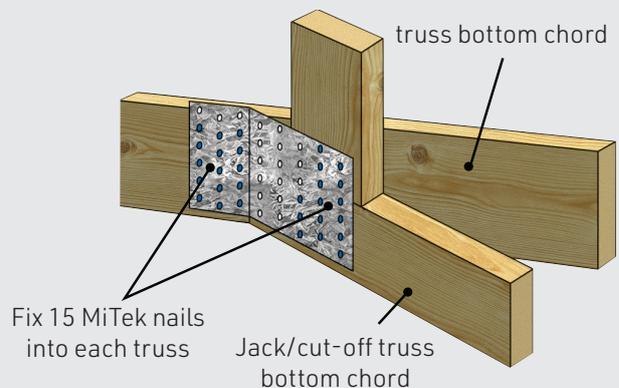
1. Locate jack/cut-off truss into position and fix 3/75mm nails through each top and bottom chord to the hip/ boomerang girder truss.



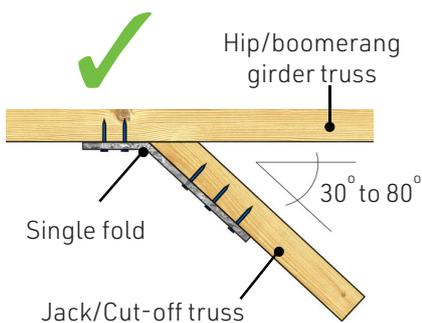
2. With the short leg against the girder, align the Boomerang Connector with the incoming truss with a 6mm offset above bottom edge of the bottom chord. If necessary, bend the Boomerang Connector to the skew angle before aligning.



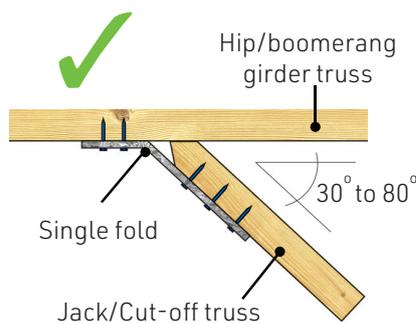
3. Ensure the connector is flush with the chord surface and fix 15 MiTek nails into the hip/ boomerang girder bottom chord and 15 MiTek nails into vertical web and bottom chord of the jack/cut-off truss.



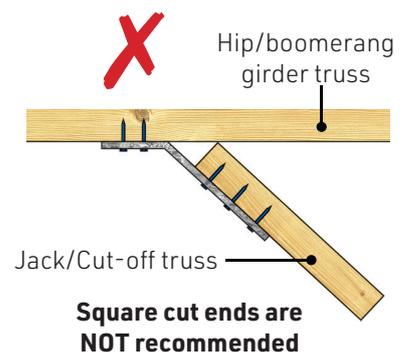
SINGLE MITRE



DOUBLE MITRE



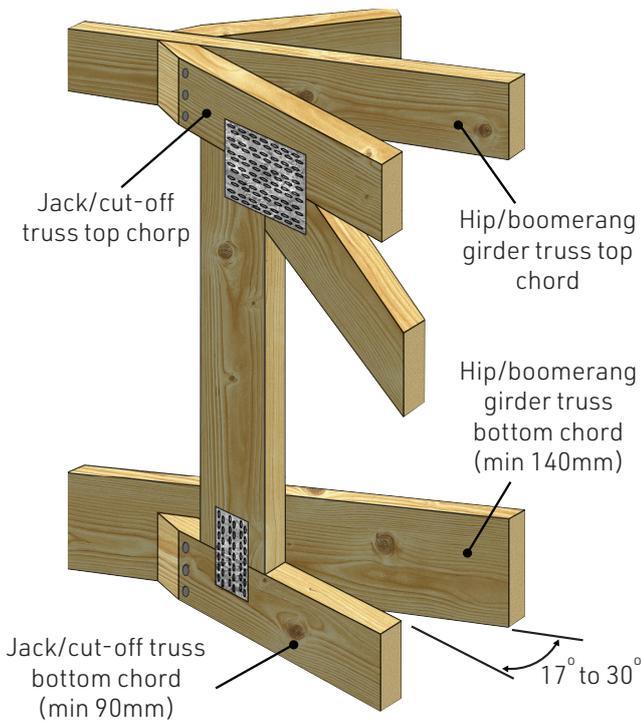
SQUARE CUT



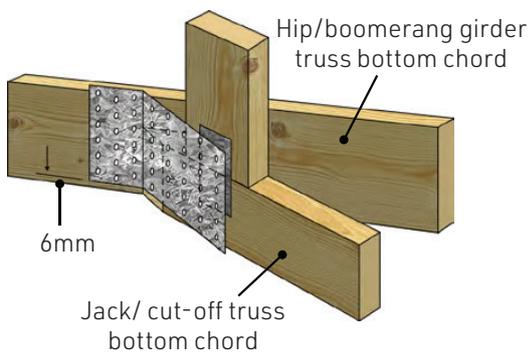
DOUBLE FOLD FIXING METHOD

Suits double mitred jack/cut-off truss with skew angle from 17° to 30°.
Single mitre and square cut ends are not suitable for this method.

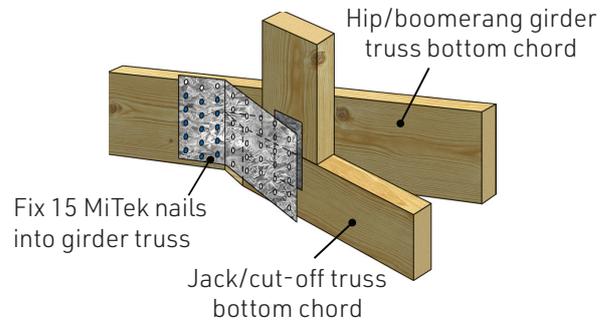
1. Locate jack/cut-off truss into position and fix 3/75mm nails through each top and bottom chord to the hip/ boomerang girder truss.



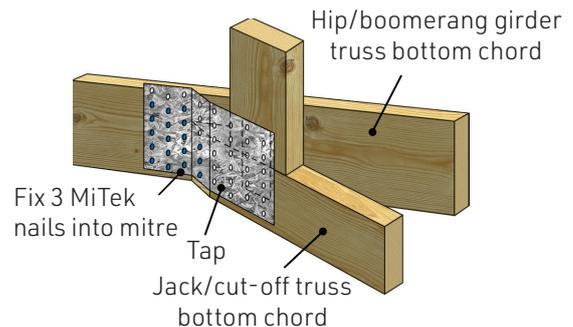
2. With the short leg against the girder, position the bend line along the tip of the double mitre. Offset 6mm above the bottom of the bottom chords.



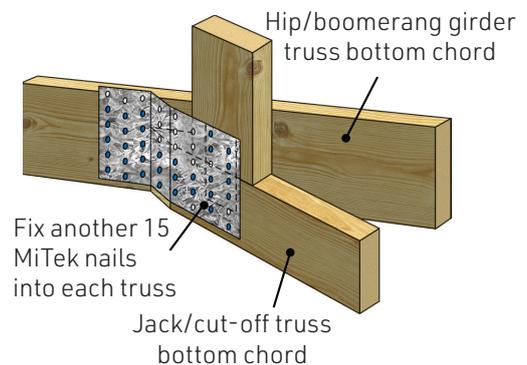
3. Fix 15 MiTek nails into the hip/boomerang girder bottom chord.



4. Wrap the Boomerang Connector around the mitre cut face and fix 3 MiTek nails into the mitre fold.



5. Further wrap the connector flush with the jack/cut-off truss. Then fix another 15 MiTek nails into the vertical web and bottom chord of the jack/cut-off truss.



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