Multinail Split Hanger

The Multinail Split Hanger is designed to provide an economical and effective steel connector.

Benefits of Split Hanger

A versatile fixing solution engineered to provide an economical and effective method for fastening trusses or beams using screws.

- Suitable for various widths of timber members joining at right angles
- Provides strong and reliable load capacities for heavy timber beam-to-beam connections
- Concealed design for a clean and professional finish at corner applications
- Quick and easy to install

MULTINAIL™

Personalised. Local. Progressive.

Installation

1. Mark the location of Split Hanger on the face of supporting beam or bearer. Ensure the minimum depth of 140mm, 180mm or 220mm is achieved for supporting beam to fix the required number of screws for each size of Split Hanger, respectively.
2. Position Split Hanger against supporting beam by using the location hole with nails where necessary. Apply required number of Structural Screws #14 to the face of supporting beam.
   - For single laminated beams (minimum width of 35mm and maximum width of 63mm) – use 30mm Structural Screw **Black** #14
   - For multiple laminated beams (minimum total width of 70mm and 90mm) – use 65mm Structural Screw **Blue** #14
3. Install supported beam or joist onto Split Hanger by resting on the bottom tab. Ensure it is hard up against the supported beam and check plumb. Apply required number of Structural Screws #14 to the face of supported beam or joist.
   - For single laminated beams (minimum width of 35mm and maximum width of 63mm) – use 30mm Structural Screw **Black** #14
   - For multiple laminated beams (minimum total width of 70mm and 90mm) – use 65mm Structural Screw **Blue** #14
4. Position the other Split Hanger, if required. Ensure it is hard up against both the supported and supporting members.

Note:
For multi-laminated beams or bearers with a total width larger than 90mm, longer screws may be required in Split Hanger to ensure loads are shared among all laminations of members. It is the installer's responsibility to ensure the lamination procedure is completed correctly in accordance with timber suppliers' guidelines or connection details certified by structural engineers.

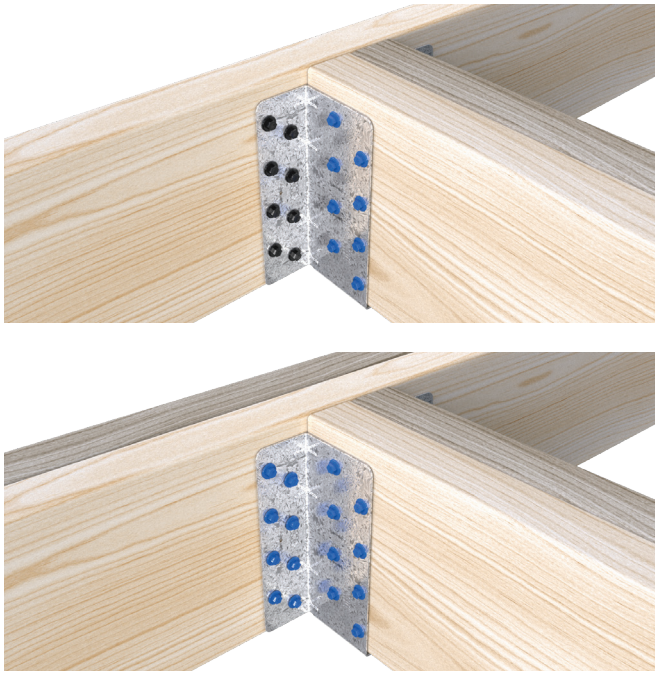

Figure 1: 65mm Structural Screw **Blue** #14 used in multi-laminated beams

Limit State Design Capacity

Multinail Split Hanger incorporates both round (O) and square (☐) punched holes at each wing. To achieve the full capacities of Split Hanger in different height ranges, fill up all round (O) and square (☐) holes with Structural Screws #14. Alternatively, for lighter and nominal connections, by filling only the round (O) holes to achieve the required capacities.

The following tables give the Limit State Design capacities for a pair of Split Hanger in both options of filling round (O) and square (☐) holes and round (O) holes only

MBSPH140

Table 1*: Limit State Design Capacities (kN) for a pair of MBSPH140 Split Hangers

Timber Joint Group	MBSPH140 Split Hanger (kN) - Pair				
	Number of screws to each wing	Dead Load	Dead Load + Floor Live Load	Dead Load + Roof Live Load	Dead Load + Wind Load
JD3	3 O	9.9	11.9	13.3	15.3
	6 O☐	18.3	22.2	24.8	29.6
JD4	3 O	7.0	8.5	9.5	14.1
	6 O☐	13.1	15.9	17.7	26.2
JD5	3 O	5.0	6.1	6.8	10.0
	6 O☐	9.3	11.3	12.6	18.6

* Refer to Limit State Design Capacity - Notes

Note:
Limit state design capacities are obtained from laboratory testing and derived from AS1720.1 for houses where failure is unlikely to affect an area greater than 25m^2. For primary elements in structures other than houses or elements in a house for which failure would be greater than 25m^2 these capacities must be multiplied by 0.94. For primary joints in essential services or post disaster buildings multiply by 0.88.

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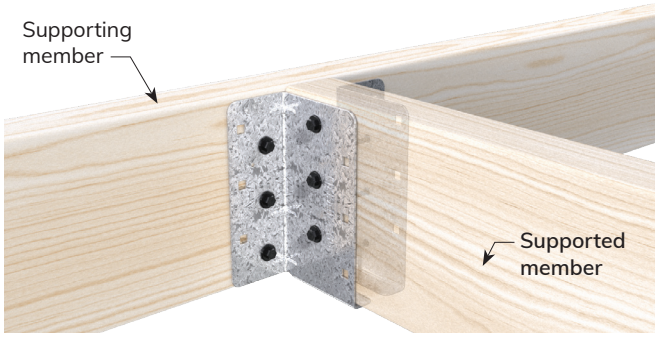
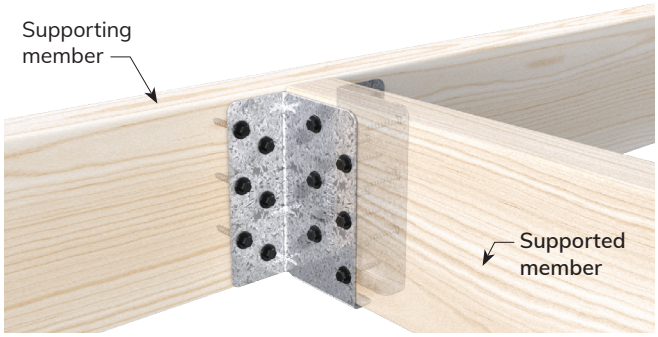


140mm Split Hanger fixed with 3 x Structural Screw #14 in each wing through **round (○)** holes.



140mm Split Hanger fixed with 6 x Structural Screw #14 in each wing through both **round (○)** and **square (□)** holes.

Figure 2: MBSPH140 fixed with Structural Screw #14

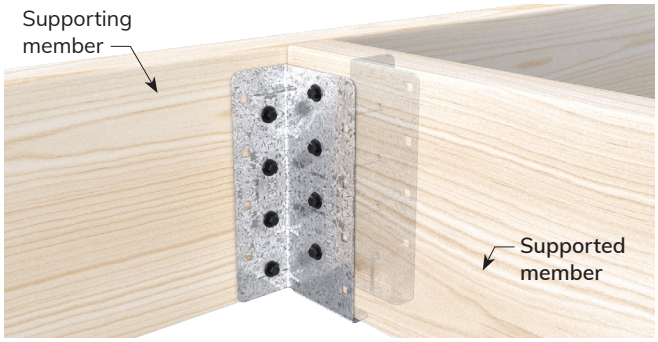
MBSPH180

Table 2*: Limit State Design Capacities (kN) for a pair of MBSPH180 Split Hangers

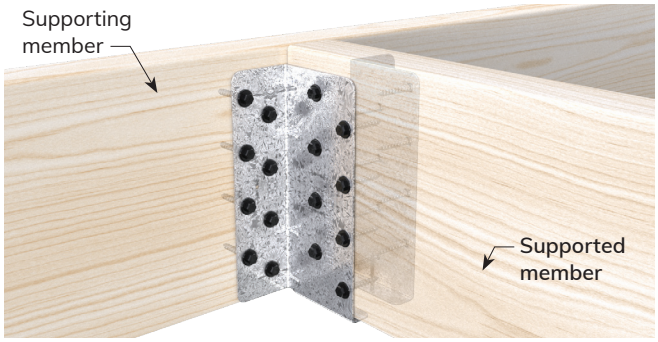
Timber Joint Group	MBSPH180 Split Hanger (kN) - Pair				
	Number of screws to each wing	Dead Load	Dead Load + Floor Live Load	Dead Load + Roof Live Load	Dead Load + Wind Load
JD3	4 ○	13.1	15.9	17.8	20.4
	8 ○□	24.2	29.3	32.7	37.8
JD4	4 ○	9.4	11.4	12.7	18.8
	8 ○□	17.3	20.9	23.3	34.6
JD5	4 ○	6.7	8.1	9.0	13.3
	8 ○□	12.3	14.8	16.6	24.5

* Refer to Limit State Design Capacity - Notes

Note:
Limit state design capacities are obtained from laboratory testing and derived from AS1720.1 for houses where failure is unlikely to affect an area greater than 25m^2. For primary elements in structures other than houses or elements in a house for which failure would be greater than 25m^2 these capacities must be multiplied by 0.94. For primary joints in essential services or post disaster buildings multiply by 0.88.



180mm Split Hanger fixed with 4 x Structural Screw #14 in each wing through **round (○)** holes.



180mm Split Hanger fixed with 8 x Structural Screw #14 in each wing through both **round (○)** and **square (□)** holes.

Figure 3: MBSPH180 fixed with Structural Screw #14

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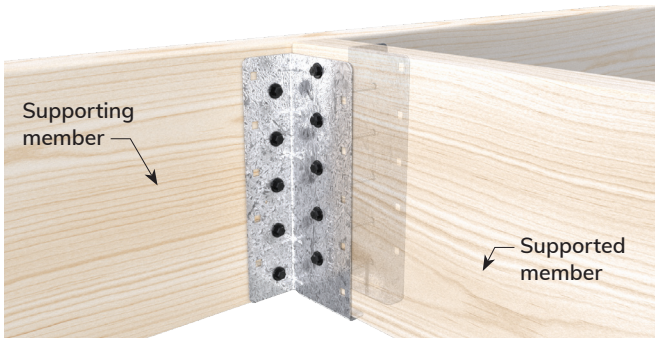
MBSPH220

Table 3*: Limit State Design Capacities (kN) for a pair of MBSPH220 Split Hangers

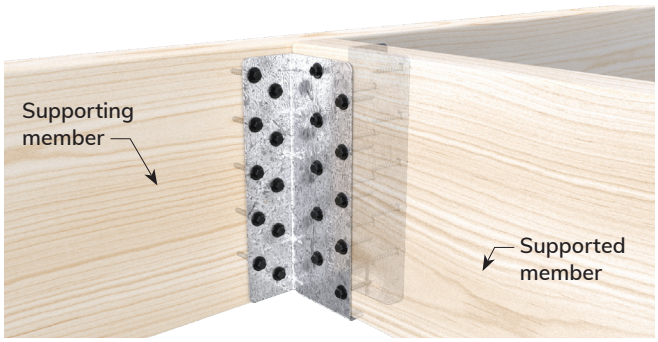
Timber Joint Group	MBSPH220 Split Hanger (kN) - Pair				
	Number of screws to each wing	Dead Load	Dead Load + Floor Live Load	Dead Load + Roof Live Load	Dead Load + Wind Load
JD3	5 ○	15.4	18.7	20.9	25.5
	10 ○□	29.6	35.8	40.0	46.0
JD4	5 ○	11.0	13.4	14.9	22.1
	10 ○□	21.1	25.6	28.6	42.3
JD5	5 ○	7.8	9.5	10.6	15.7
	10 ○□	15.0	18.1	20.3	30.0

* Refer to Limit State Design Capacity - Notes

Note:
Limit state design capacities are obtained from laboratory testing and derived from AS1720.1 for houses where failure is unlikely to affect an area greater than 25m^2. For primary elements in structures other than houses or elements in a house for which failure would be greater than 25m^2 these capacities must be multiplied by 0.94. For primary joints in essential services or post disaster buildings multiply by 0.88.



220mm Split Hanger fixed with 5 x Structural Screw #14 in each wing through **round (○)** holes.



220mm Split Hanger fixed with 10 x Structural Screw #14 in each wing through both **round (○)** and **square (□)** holes.

Figure 4: MBSPH220 fixed with Structural Screw #14

Limit State Design Capacity - Notes

1. Limit state capacities given in Table 1-3 are based on a pair of Split Hangers installed on both sides of the beam or bearer in the configuration shown in Figure 2-4.
2. Limit state capacities shall be multiplied by 0.35 when a single Split Hanger is installed on either side of supporting beam only. See Figure 5.
3. Limit state capacities shall be multiplied by 0.7 when a pair of Split Hanger is installed on one side of supporting beam (stacked). See Figure 6.

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Other Installation

Split Hanger can also be used in other applications. Figure 5 shows an application when a single Split Hanger is applied when two beams are joined together at the corner. Ensure the long wing is fixed to the incoming member to prevent timber splitting at the end.

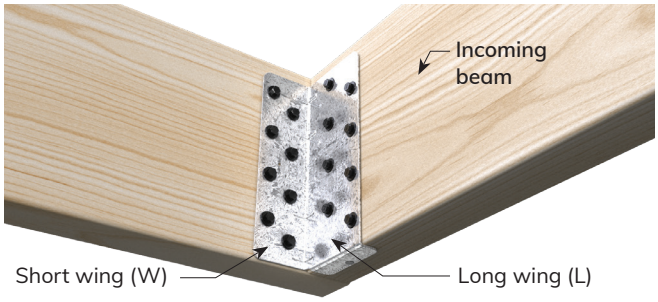


Figure 5: Single split hanger used on one side at corner joint

A pair of Split Hangers could also be used as corner bracket when requiring higher capacities in connection design or stacked on one side in a typical beam-to-beam connection. Figure 6 illustrates a pair of Split Hangers stacked vertically on one side of supporting beam. Ensure the depth of beam achieves the minimum required depth when stacking Split Hanger to avoid overlapping.

Limit state capacities listed in Table 1-3 for such applications mentioned above shall be reduced according to Note 2 & 3 of the tables accordingly.

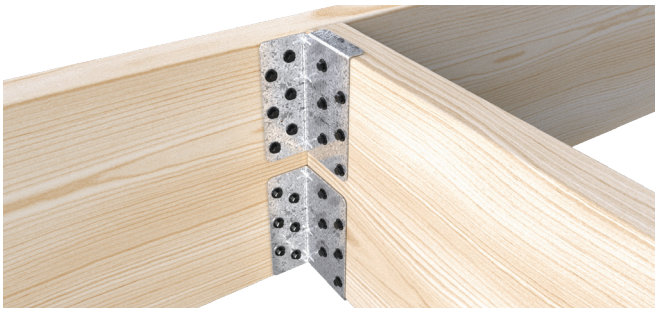


Figure 6: A pair of Split Hangers stacked on one side

Split Hanger can be utilised in timber wall framing applications as well. Figure 7 showed the connection between stud and wailing plate where a single Split Hanger is installed to provide a sufficient amount of capacity.

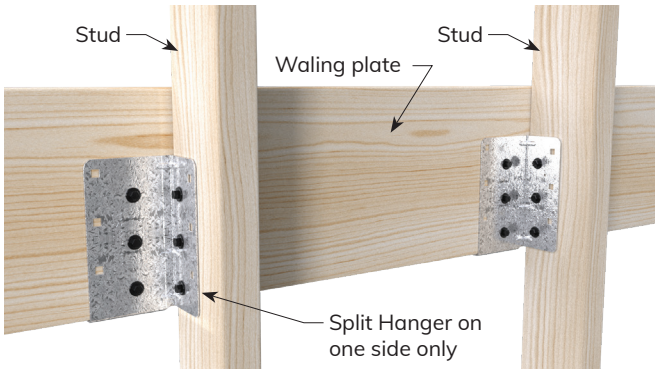
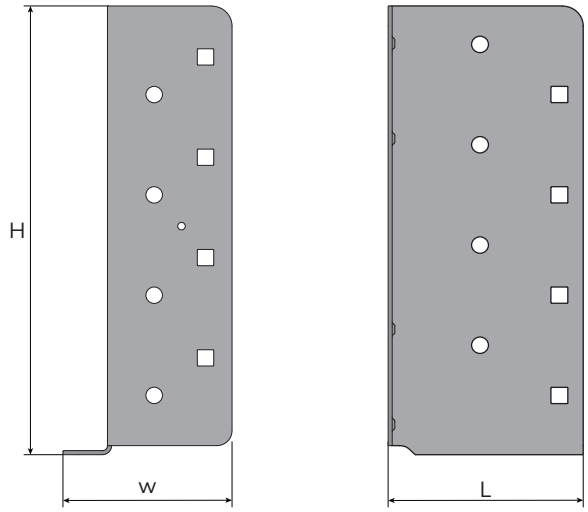


Figure 7: Split Hanger connecting waling plate to stud

Technical Specifications

Steel	Z275, 1.6mm Thickness



Description and Packing

Product Code	Description H x L x W	Carton Qty	Pallet Qty	Carton kg.
MBSPH140	140 x 75 x 67mm	10	87	4.2
MBSPH180	180 x 75 x 67mm	10	87	5.3
MBSPH220	220 x 75 x 67mm	10	56	6.6

Fixings	
BSS14X30X6	Structural Screw Black 14 gauge x 30mm 6 pcs per bag
BSS14X30X40	Structural Screw Black 14 gauge x 30mm 40 pcs per bag
BSS14X30X1200	Structural Screw Black 14 gauge x 30mm 1200 bulk carton
BSS14X65X20	Structural Screw Blue 14 gauge x 65mm 20 pcs per bag
BSS14X65X600	Structural Screw Blue 14 gauge x 65mm 600 bulk carton

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