

The minimum bolt specification to be used is:

M12 bolts (min. 3mm x 38mm M12 washers under head and nut) for 38mm, 44mm, 47mm and 63mm wide sections M16 bolts (min. 4mm x 48mm M16 washers under head and nut) for 72mm and 89mm wide sections It may be possible to use other types of fasteners for which capacities have been obtained experimentally and declared by manufacturers with third party certification e.g. dog tooth connectors.

Fixing can be either along the centreline or staggered. If staggered, nails must be at least 5 times the diameter of the nail apart (at least 25mm) and bolts 4 times the bolt diameter apart (M12 = 48mm, M16 = 64mm)

Fixing bolts on centrelineTwo staggered rows of fixing diagram - bolts

Nails must be started 15 times the diameter from the joist end and at least five times the diameter from the top and bottom.

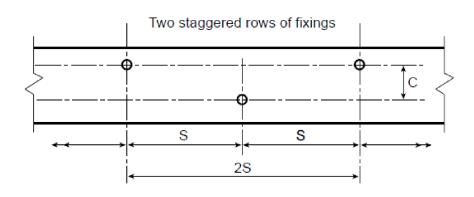
Bolts must be closer than seven times the diameter or 80mm from the joist end and four times the diameter from the top and bottom.

Bolts fixing type tableBolt positioning diagram

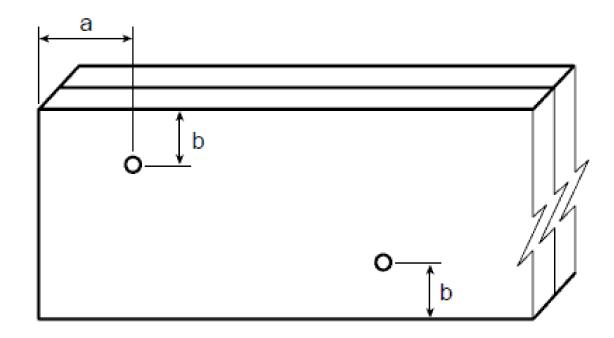
Images courtesy of Eurocode 5

For example, if two 47mm x 195mm are bolted together, then M12 bolts should be used and positioned 48mm from the top and bottom and at least 48mm apart vertically if staggered fixings are used. The first bolt should be positioned between 80mm and 84mm (7x12) from the joist ends.

Each trimmer should be fixed in line with a minimum of two nails or two bolts at 1/3 span positions and as a minimum the fixing centres (S) for double member trimmer and trimmlng joists should be at centres of no more than twice the joist spacing (a maximum of 1200mm). However required fixing centres vary according to the total length and weight on the joist.



Fixing type	Minimum dimension (mm)		
	а	b	С
Nail (without pre-drilled hole)	15d	5d	5d
Bolt	Maximum of 7d or 80mm	4d	4d
d – diameter of nail or bolt			



REVISIONS	DATE	AUTHORITY	AMENDMENT	A.G.
PROJECT			H ELMS, ELL IG7 6	SNF.
DRAWIN		TLE		
DET	AILS	- UZ		

SCALE	DRAWN BY
1:100@A3 1:50@A1	A.G
9 HAZLEW LONDON E	GCONSULTANCIES.CO.UK

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A.G. A.G.

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