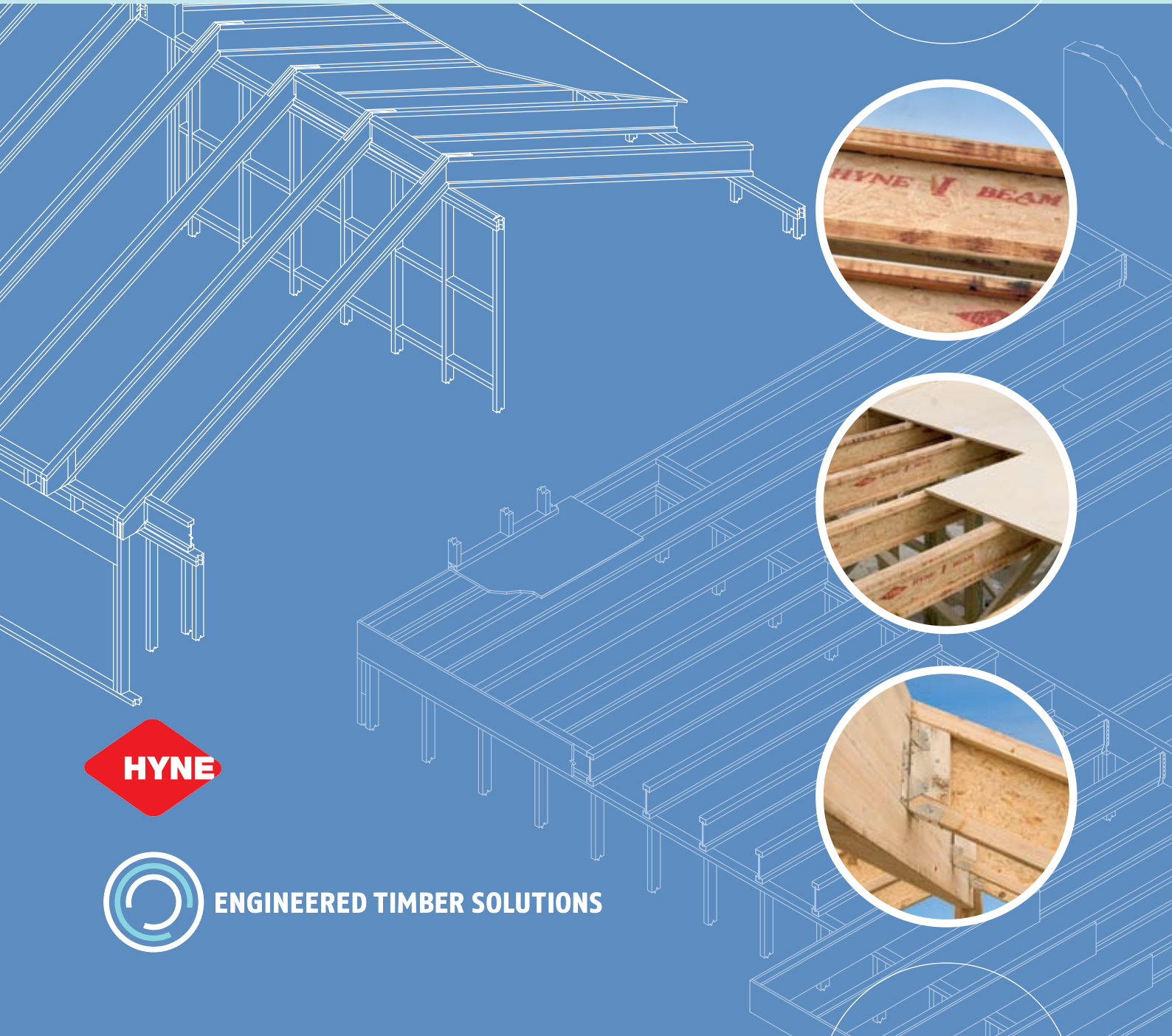


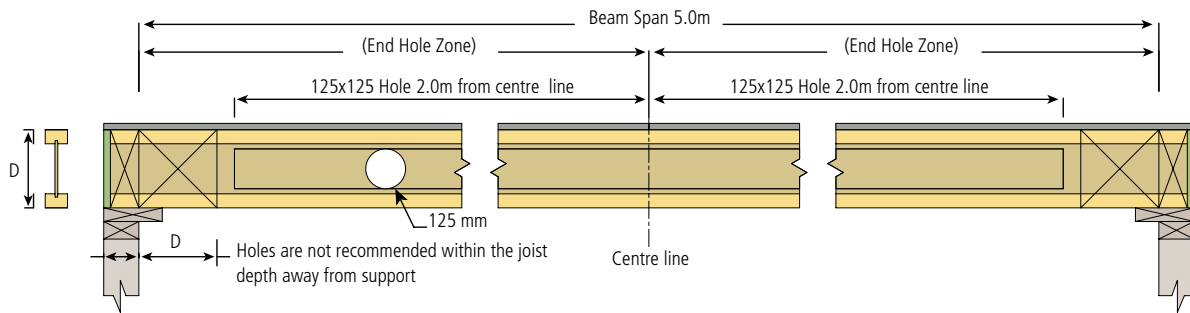


ENGINEERED TIMBER SOLUTIONS DESIGN GUIDE



ENGINEERED TIMBER SOLUTIONS

6.0 ROUND HOLES IN HYNE I-BEAMS EXAMPLE



Holes are not permitted directly over support

REQUIRED INFORMATION:

- Maximum floor load 1.8kN (yes)
- Shape and size of hole (round hole 125mm diameter)
- Joist size (IB 245x70)
- Joist spacing (450 centres)
- Joist span (5.0m) single span joist
- Hole zone (End Hole Zone)

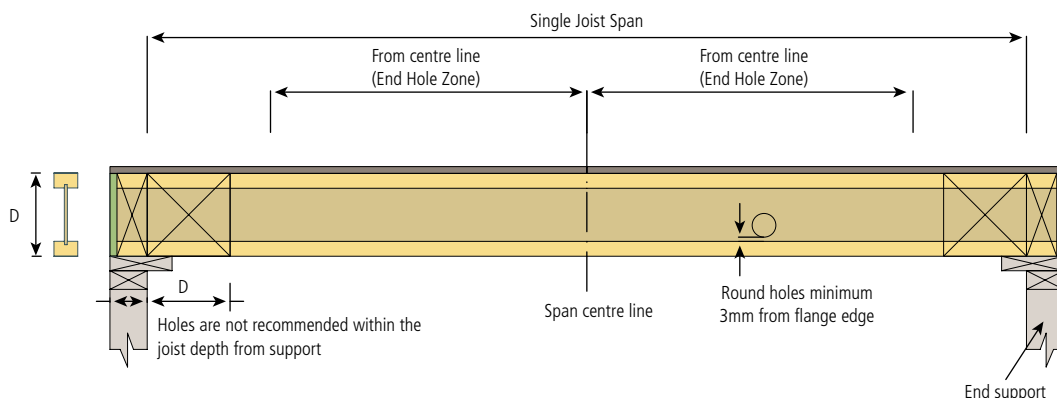
PROCEDURE:

1. Select table according to hole shape round. (Round Hole) page 30
2. Select hole size and joist spacings. Hole size 125x125 and joist spacings 450 centres
3. Select hole zone. (End Hole Zone)
4. Select joist size (IB 245x70) and read across to intercept coordinates (Hole zone width = 2.0m)

PLEASE NOTE:

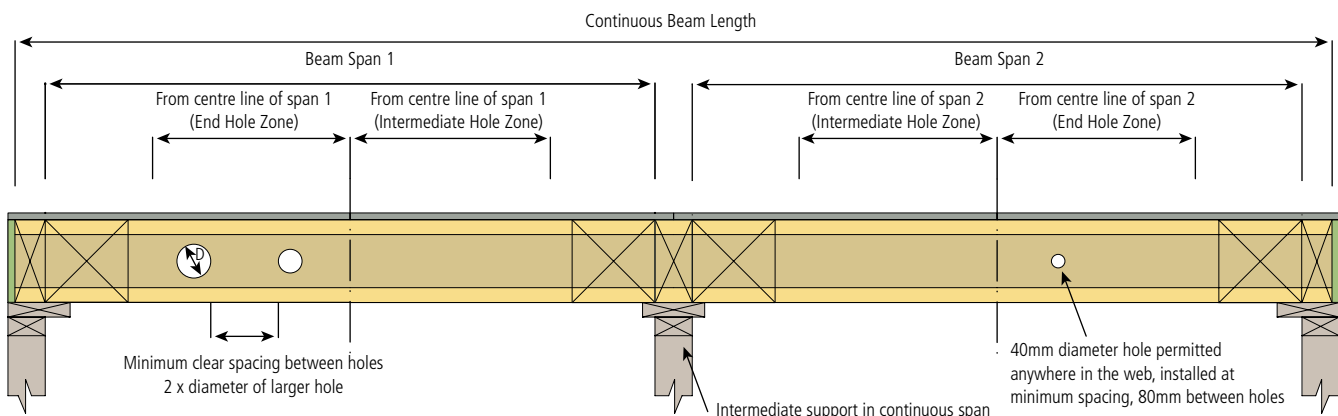
- This means that a 125-diameter hole can be placed within the End Hole Zone as long as the hole is within 2.0m from the centerline.
- For the distance from the support (span) 5.0m / 2 – (Hole Zone Width) 2.0m = (distance from support) 0.5m
- If 2.0m is greater than half the span then the hole can be placed anywhere.
- The hole is not allowed over the supports.
- Keep the hole at least the joist depth away from the support.

6.1 ROUND HOLES IN HYNE I-BEAMS EXAMPLE



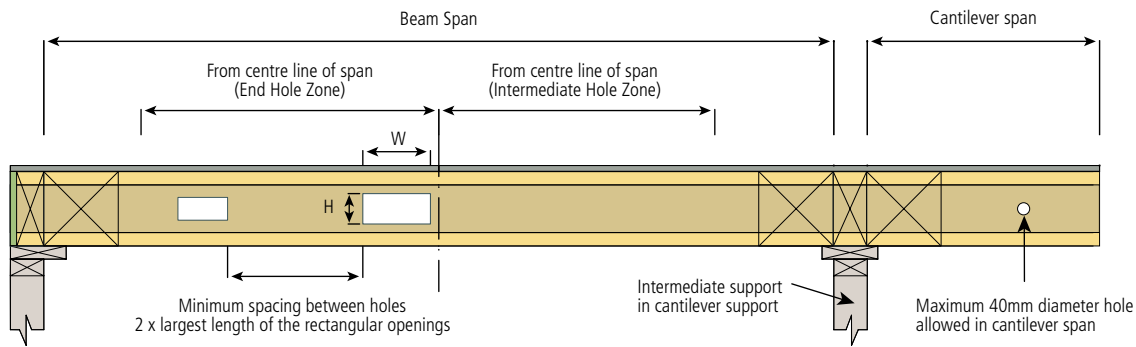
Holes are not permitted directly over support

6.2 ROUND HOLES IN HYNE I-BEAMS EXAMPLE



Holes in Hyne I-Beams

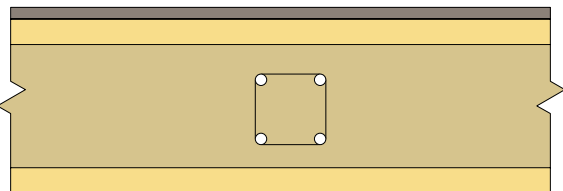
6.3 RECTANGULAR OR ROUND HOLES IN HYNE I-BEAMS EXAMPLE



PLEASE NOTE:

- Never drill, cut or notch the flange, or over-cut the web.
- The holes in the web should be cut with a sharp saw.
- For rectangular holes, avoid over cutting the corners as this can cause stress concentrations.

6.4 CUTTING HOLES IN HYNE I-BEAMS



PLEASE NOTE:

- Slightly rounding the corners is recommended to avoid over-cutting, for rectangular holes.
- Start the rectangular hole by drilling a 10mm diameter hole in each of the four corners and then making the cuts between the holes to minimise damage to the web.

6.5 ROUND OR SQUARE HOLES IN HYNE I-BEAMS

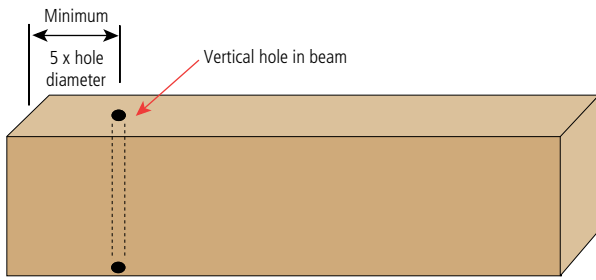
HOLE SIZE	75x75		100x100		125x125		150x150		175x175		200x200	
	450	600	450	600	450	600	450	600	450	600	450	600
HYNE I-BEAM	JOIST SPACING (mm)											
	450	600	450	600	450	600	450	600	450	600	450	600
	MAXIMUM ALLOWABLE DISTANCE FROM CENTRE OF JOIST SPAN FOR END HOLE (m)											
IB 200x70	2.0	1.4	1.4	1.1	-	-	-	-	-	-	-	-
IB 245x70/88	2.8	2.6	2.8	2.0	2.0	1.5	1.3	0.6	-	-	-	-
IB 300x70/88	3.1	2.9	3.1	2.9	3.1	2.6	2.6	2.1	2.1	1.6	1.4	1.0
IB 360x70	3.5	3.2	3.5	3.2	3.5	3.2	3.5	3.2	3.5	2.6	2.6	1.8
	MAXIMUM ALLOWABLE DISTANCE FROM CENTRE OF JOIST SPAN FOR INTERMEDIATE HOLE (m)											
IB 200x70	1.4	1.0	0.8	0.5	-	-	-	-	-	-	-	-
IB 245x70/88	2.5	1.8	1.8	1.3	1.2	0.8	0.5	MID	-	-	-	-
IB 300x70/88	3.5	2.6	3.2	2.2	2.5	1.8	1.9	1.3	1.2	0.8	0.6	MID
IB 360x70	3.8	3.5	3.8	3.5	3.8	2.9	2.8	2.1	2.0	1.5	1.5	1.0

6.6 RECTANGULAR HOLES IN HYNE I-BEAMS

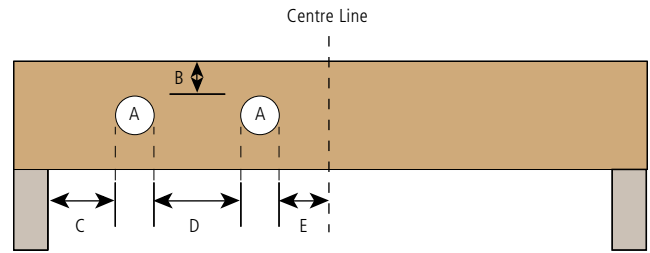
HOLE SIZE	125x250		150x300		175x350		200x400	
	450	600	450	600	450	600	450	600
HYNE I-BEAM	JOIST SPACING (m)							
	450	600	450	600	450	600	450	600
	MAXIMUM ALLOWABLE DISTANCE FROM CENTRE OF JOIST SPAN FOR END HOLE (m)							
IB 200x70	-	-	-	-	-	-	-	-
IB 245x70/88	2.0	1.4	0.9	0.5	-	-	-	-
IB 300x70/88	2.3	1.6	1.6	1.1	1.3	0.4	1.1	MID
IB 360x70	3.5	2.5	2.3	1.6	1.5	1.1	1.1	0.4
	MAXIMUM ALLOWABLE DISTANCE FROM CENTRE OF JOIST SPAN FOR INTERMEDIATE HOLE (m)							
IB 200x70	-	-	-	-	-	-	-	-
IB 245x70/88	1.2	0.8	0.5	0.3	-	-	-	-
IB 300x70/88	1.3	0.9	0.8	0.5	0.6	0.3	0.6	MID
IB 360x70	2.1	1.5	1.3	0.9	0.8	0.4	0.4	0.2

Service Holes Hyne LGL & 17C Beams

6.7 VERTICAL HOLES – 17C BEAMS ONLY



6.8 SERVICE HOLES IN HYNE LGL & 17C BEAMS



6.9 SERVICE HOLES IN HYNE LGL & 17C BEAMS

BEAM WIDTH (mm)	MAXIMUM HOLE DIAMETER (mm)	MINIMUM HOLE SPACING (mm)
35	9	210
45	11	270
85	21	510

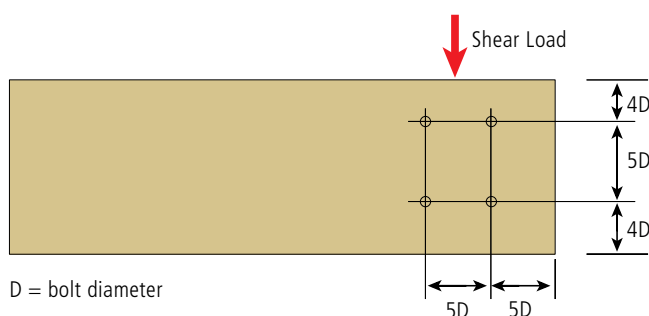
Extra side fixity required to stop prying or separating.

6.10 SERVICE HOLES IN HYNE LGL & 17C BEAMS

The following table outlines the requirements for holes being drilled through Hyne LGL and 17C floor members. For 18C and 21C please phone the technical helpline on 0800 022 357

	A	B	C	DD	E	F
HYNE LGL & 17C BEAMS	Maximum Hole Diameter (mm)	Top and Bottom Edge Distance (mm)	Minimum End Distance From Support Face (mm)	Minimum Hole Spacing	Minimum Distance From Centre of Span	Maximum Number of Holes in Span
200	25	30	70	5 x Diameter	None	3 Holes / Halfspan
	40	55	290	5 x Diameter	None	3 Holes / Halfspan
	55	55	880	5 x Diameter	440	2 Holes / Halfspan
	75	55	880	1300mm	650	1 Hole / Halfspan
245	25	30	70	5 x Diameter	None	3 Holes / Halfspan
	50	70	360	5 x Diameter	None	3 Holes / Halfspan
	70	70	1050	5 x Diameter	520	2 Holes / Halfspan
295 or larger	95	70	1050	1600mm	800	1 Hole / Halfspan
	25	30	70	5 x Diameter	None	3 Holes / Halfspan
	60	85	440	5 x Diameter	None	3 Holes / Halfspan
	85	85	1200	5 x Diameter	600	2 Holes / Halfspan
	115	85	1200	1800mm	900	1 Hole / Halfspan

6.11 FASTENING HORIZONTAL HOLES FOR SHEAR LOADS



6.12 FASTENING HORIZONTAL HOLES FOR TENSION LOADS

