

b) Holes near to Joist Hangers

Where more than one hole is to be cut in the web of a JJI-Joist, the minimum spacing between holes should be 2 times the width of the largest hole. In the case of spacing between adjacent 35mm holes there should be a 70mm gap between each hole.

In situations where a hole is required to be drilled near to a joist hanger supporting an incoming JJI-Joist or Kerto LVL beam, a distance of 2 times the hole diameter should be left from the outside edge of the hanger back plate to the near-side edge of the proposed hole as illustrated below in Figure 2.

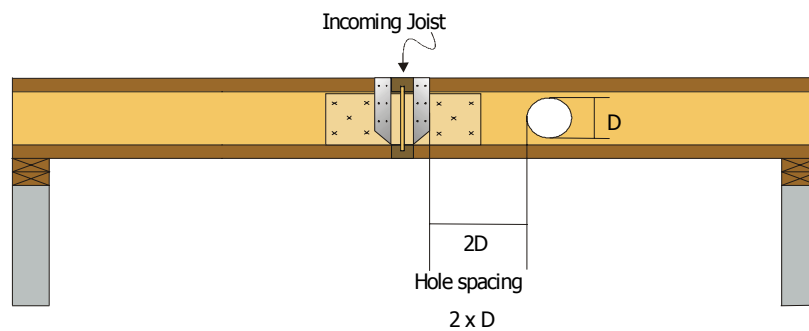


Figure 2. Proximity of hole to a joist hanger

c) Expansion to JJI-Joist Hole Installation Tables

In the Technical Manual, Tables 3 and 4 give the minimum distance that a circular and rectangular hole may be placed from the inside face of the support, for a range of joist spans and hole sizes.

Due to space constraints within the Technical Manual the tables only feature a limited range of spans for each joist size and fall short of the maximum clear span achievable for JJI-Joists.

The following tables present hole charts for circular and rectangular holes with an increased range of joist spans for all depths of JJI-Joists. The information in these tables will be incorporated in the Technical Manual, although space constraints will still mean that the following tables will represent the most comprehensive hole charts available. Tables 1 to 3 inclusive cover round holes and Tables 4 to 6 inclusive cover rectangular holes.

General Notes

1. **The values** in the tables in this Technical Bulletin are applicable to simply supported uniformly loaded joists at maximum 600 c/c supporting loads of 0.75 kN/m² dead load and 1.5 kN/m² imposed load. For all other applications consult James Jones & Sons Ltd Timber Systems Division Engineering Department.
2. **Where more than one hole** is to be cut, the minimum spacing between holes should be 2 times the width of the largest hole.
3. **Cut hole on the centreline** of the web where possible.
4. **The rectangular hole** width should not exceed 1.5 times the height of the rectangular hole.
5. **Cut all holes carefully.** Do not over-cut and do not cut the flange.
6. **IF IN DOUBT ASK.**

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Table 2. Round Holes

Minimum Required Distance (Lm see figure 1) from inside face of a support to the nearest edge of the hole.

JOIST DEPTH	JOIST SPAN (m)	HOLE SIZE D (mm)												
		50	75	100	125	150	175	200	225	250	275	300	325	350
		0	0	0	0	0	0	0	0	0	0	0	0	0
245	2.5	0.30	0.30	0.30	0.30	0.30								
	3.0	0.30	0.30	0.30	0.30	0.34								
	3.5	0.30	0.30	0.30	0.49	0.59								
	4.0	0.30	0.30	0.54	0.74	0.84								
	4.5	0.30	0.48	0.79	0.99	1.09								
	5.0	0.30	0.73	1.04	1.24	1.34								
	5.5	0.54	0.98	1.29	1.49	1.59								
300	6.0	0.79	1.23	1.54	1.74	1.84								
	3.0	0.30	0.30	0.30	0.30	0.30	0.39	0.49						
	3.5	0.30	0.30	0.30	0.30	0.48	0.64	0.74						
	4.0	0.30	0.30	0.30	0.48	0.73	0.89	0.99						
	4.5	0.30	0.30	0.39	0.73	0.98	1.14	1.24						
	5.0	0.30	0.30	0.64	0.98	1.23	1.39	1.49						
	5.5	0.30	0.47	0.89	1.23	1.48	1.64	1.74						
	6.0	0.30	0.72	1.14	1.48	1.73	1.89	1.99						
350	6.5	0.44	0.97	1.39	1.73	1.98	2.14	2.24						
	7.0	0.69	1.22	1.64	1.98	2.23	2.39	2.49						
	3.5	0.30	0.30	0.30	0.30	0.30	0.41	0.61	0.75	0.83				
	4.0	0.30	0.30	0.30	0.30	0.39	0.66	0.86	1.00	1.08				
	4.5	0.30	0.30	0.30	0.30	0.64	0.91	1.11	1.25	1.33				
	5.0	0.30	0.30	0.30	0.55	0.89	1.16	1.36	1.50	1.58				
	5.5	0.30	0.30	0.39	0.80	1.14	1.41	1.61	1.75	1.83				
	6.0	0.30	0.30	0.64	1.05	1.39	1.66	1.86	2.00	2.08				
6.5	0.30	0.39	0.89	1.30	1.64	1.91	2.11	2.25	2.33					
7.0	0.30	0.64	1.14	1.55	1.89	2.16	2.36	2.50	2.58					

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Table 3. Round Holes

Minimum Required Distance (Lm see figure 1) from inside face of a support to the nearest edge of the hole.

JOIST DEPTH	JOIST SPAN (m)	HOLE SIZE D (mm)												
		50	75	100	125	150	175	200	225	250	275	300	325	350
400		0	0	0	0	0	0	0	0	0	0	0	0	0
	3.5	0.30	0.30	0.30	0.30	0.30	0.30	0.31	0.53	0.71	0.83	0.90		
	4.0	0.30	0.30	0.30	0.30	0.30	0.30	0.56	0.78	0.96	1.08	1.15		
	4.5	0.30	0.30	0.30	0.30	0.30	0.52	0.81	1.03	1.21	1.33	1.40		
	5.0	0.30	0.30	0.30	0.30	0.43	0.77	1.06	1.28	1.46	1.58	1.65		
	5.5	0.30	0.30	0.30	0.30	0.68	1.02	1.31	1.53	1.71	1.83	1.90		
	6.0	0.30	0.30	0.30	0.53	0.93	1.27	1.56	1.78	1.96	2.08	2.15		
	6.5	0.30	0.30	0.30	0.78	1.18	1.52	1.81	2.03	2.21	2.33	2.40		
	7.0	0.30	0.30	0.55	1.03	1.43	1.77	2.06	2.28	2.46	2.58	2.65		
	7.5	0.30	0.30	0.80	1.28	1.68	2.02	2.31	2.53	2.71	2.83	2.90		
8.0	0.30	0.52	1.05	1.53	1.93	2.27	2.56	2.78	2.96	3.08	3.15			
450	3.5	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.43	0.63	0.78	0.89	0.96
	4.0	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.44	0.68	0.88	1.03	1.14	1.21
	4.5	0.30	0.30	0.30	0.30	0.30	0.30	0.39	0.69	0.93	1.13	1.28	1.39	1.46
	5.0	0.30	0.30	0.30	0.30	0.30	0.30	0.64	0.94	1.18	1.38	1.53	1.64	1.71
	5.5	0.30	0.30	0.30	0.30	0.30	0.55	0.89	1.19	1.43	1.63	1.78	1.89	1.96
	6.0	0.30	0.30	0.30	0.30	0.40	0.80	1.14	1.44	1.68	1.88	2.03	2.14	2.21
	6.5	0.30	0.30	0.30	0.30	0.65	1.05	1.39	1.69	1.93	2.13	2.28	2.39	2.46
	7.0	0.30	0.30	0.30	0.44	0.90	1.30	1.64	1.94	2.18	2.38	2.53	2.64	2.71
	7.5	0.30	0.30	0.30	0.69	1.15	1.55	1.89	2.19	2.43	2.63	2.78	2.89	2.96
	8.0	0.30	0.30	0.43	0.94	1.40	1.80	2.14	2.44	2.68	2.88	3.03	3.14	3.21
8.5	0.30	0.30	0.68	1.19	1.65	2.05	2.39	2.69	2.93	3.13	3.28	3.39	3.46	
9.0	0.30	0.36	0.93	1.44	1.90	2.30	2.64	2.94	3.18	3.38	3.53	3.64	3.71	

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Tables 5. Rectangular Holes

Minimum Required Distance (Lm see figure 1) from inside face of a support to the nearest edge of the hole.

JOIST DEPTH	JOIST SPAN (m)	HOLE SIZE D (mm)												
		50	75	100	125	150	175	200	225	250	275	300	325	350
245	2.5	0.30	0.30	0.30	0.30	0.30								
	3.0	0.30	0.30	0.30	0.35	0.47								
	3.5	0.30	0.30	0.48	0.60	0.72								
	4.0	0.30	0.45	0.73	0.85	0.97								
	4.5	0.30	0.70	0.98	1.10	1.22								
	5.0	0.50	0.95	1.23	1.35	1.47								
	5.5	0.75	1.20	1.48	1.60	1.72								
	6.0	1.00	1.45	1.73	1.85	1.97								
300	3.0	0.30	0.30	0.30	0.30	0.43	0.51	0.61						
	3.5	0.30	0.30	0.30	0.50	0.68	0.76	0.86						
	4.0	0.30	0.30	0.44	0.75	0.93	1.01	1.11						
	4.5	0.30	0.30	0.69	1.00	1.18	1.26	1.36						
	5.0	0.30	0.51	0.94	1.25	1.43	1.51	1.61						
	5.5	0.30	0.76	1.19	1.50	1.68	1.76	1.86						
	6.0	0.44	1.01	1.44	1.75	1.93	2.01	2.11						
	6.5	0.69	1.26	1.69	2.00	2.18	2.26	2.36						
350	3.5	0.30	0.30	0.30	0.30	0.48	0.70	0.82	0.87	0.95				
	4.0	0.30	0.30	0.30	0.42	0.73	0.95	1.07	1.12	1.20				
	4.5	0.30	0.30	0.30	0.67	0.98	1.20	1.32	1.37	1.45				
	5.0	0.30	0.30	0.51	0.92	1.23	1.45	1.57	1.62	1.70				
	5.5	0.30	0.30	0.76	1.17	1.48	1.70	1.82	1.87	1.95				
	6.0	0.30	0.48	1.01	1.42	1.73	1.95	2.07	2.12	2.20				
	6.5	0.30	0.73	1.26	1.67	1.98	2.20	2.32	2.37	2.45				
	7.0	0.33	0.98	1.51	1.92	2.23	2.45	2.57	2.62	2.70				
7.5	0.58	1.23	1.76	2.17	2.48	2.70	2.82	2.87	2.95					

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Table 6. Rectangular Holes

Minimum Required Distance (Lm see figure 1) from inside face of a support to the nearest edge of the hole.

JOIST DEPTH	JOIST SPAN (m)	HOLE SIZE D (mm)												
		50	75	100	125	150	175	200	225	250	275	300	325	350
400	3.5	0.30	0.30	0.30	0.30	0.30	0.44	0.67	0.83	0.92	0.95	1.02		
	4.0	0.30	0.30	0.30	0.30	0.38	0.69	0.92	1.08	1.17	1.20	1.27		
	4.5	0.30	0.30	0.30	0.30	0.63	0.94	1.17	1.33	1.42	1.45	1.52		
	5.0	0.30	0.30	0.30	0.47	0.88	1.19	1.42	1.58	1.67	1.70	1.77		
	5.5	0.30	0.30	0.30	0.72	1.13	1.44	1.67	1.83	1.91	1.95	2.02		
	6.0	0.30	0.30	0.48	0.97	1.38	1.69	1.92	2.08	2.17	2.20	2.27		
	6.5	0.30	0.30	0.73	1.22	1.63	1.94	2.17	2.33	2.42	2.45	2.52		
	7.0	0.30	0.38	0.98	1.47	1.88	2.19	2.42	2.58	2.67	2.70	2.77		
	7.5	0.30	0.63	1.23	1.72	2.13	2.44	2.67	2.83	2.92	2.95	3.02		
	8.0	0.30	0.88	1.48	1.97	2.38	2.69	2.92	3.08	3.17	3.20	3.27		
450	3.5	0.30	0.30	0.30	0.30	0.30	0.30	0.38	0.63	0.81	0.92	0.99	1.05	1.07
	4.0	0.30	0.30	0.30	0.30	0.30	0.31	0.63	0.88	1.06	1.17	1.23	1.30	1.32
	4.5	0.30	0.30	0.30	0.30	0.30	0.56	0.88	1.13	1.31	1.42	1.49	1.55	1.57
	5.0	0.30	0.30	0.30	0.30	0.42	0.81	1.13	1.38	1.56	1.67	1.74	1.80	1.82
	5.5	0.30	0.30	0.30	0.30	0.67	1.06	1.38	1.63	1.81	1.92	1.99	2.05	2.07
	6.0	0.30	0.30	0.30	0.44	0.92	1.31	1.63	1.88	2.06	2.17	2.24	2.30	2.32
	6.5	0.93	0.30	0.30	0.69	1.17	1.56	1.88	2.13	2.31	2.42	2.49	2.55	2.57
	7.0	0.30	0.30	0.39	0.94	1.42	1.81	2.13	2.38	2.56	2.67	2.74	2.80	2.82
	7.5	0.30	0.30	0.64	1.19	1.67	2.06	2.38	2.63	2.81	2.92	2.99	3.05	3.07
	8.0	0.30	0.30	0.89	1.44	1.92	2.31	2.63	2.88	3.06	3.17	3.24	3.30	3.32
8.5	0.30	0.50	1.14	1.69	2.17	2.56	2.88	3.13	3.31	3.42	3.49	3.55	3.57	
9.0	0.30	0.75	1.39	1.94	2.42	2.81	3.13	3.38	3.56	3.67	3.74	3.80	3.82	