

TABLE 5: TO CALCULATE TRIBUTARY LENGTH FOR BEAMS
CHART: BEAM CALCULATIONS SINGLE STORY UP TO 3 METRE ROOF HEIGHT. REFER STUDIO 89 PS1

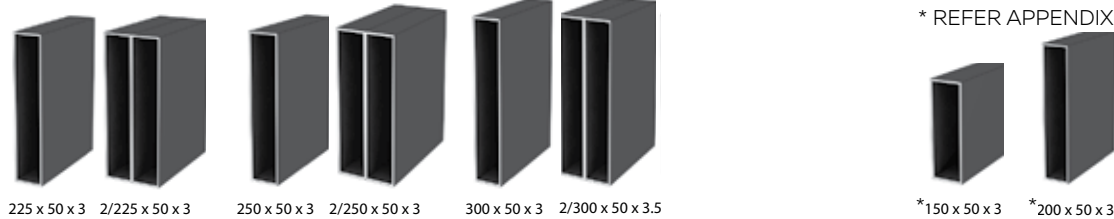


DETERMINING THE TRIBUTARY LENGTH

Typically the tributary length for simply supported beams only is half the length of the louvres span.
 Determining the tributary length is shown through figures 1-5 on pages 13.15-17 of this Engineering section.

Note: Care must be taken when calculating the tributary length for beams on continuous spanning structures as half of the louvre span on either side of the beam may not be equal.

BEAM TYPES



Fix double beams together with 2/10g x 25mm S/S pan head self tapping screws 50mm in from top and bottom of box sections at 900mm centres.

Use continuous flexible sealant/adhesive along top and bottom between box sections.

TABLE 5 - BEAM CALCULATIONS SINGLE STORY UP TO 3M

ULS		Max Beam Span (mm)																
WIND ZONE	Tributary Length	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
+0.92 LOW -1.15	225x50x3 RHS	6.48	6.04	5.73	5.45	5.23	5.04	4.86	4.72	4.59	4.48	4.37	4.27	4.18	4.09	4.01	3.95	3.88
	250x50x3 RHS	6.95	6.64	6.28	5.99	5.74	5.53	5.35	5.18	5.03	4.91	4.79	4.68	4.59	4.5	4.41	4.34	4.26
	2-250x50x3 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.85	6.67	6.49	6.34	6.20	6.08	5.96	5.87	5.77	5.68
	300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.83	6.60	6.41	6.24	6.06	5.92	5.80	5.68	5.56	5.46	5.35	5.21
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95
+1.23 MEDIUM -1.53	225x50x3 RHS	6.36	5.94	5.63	5.35	5.14	4.96	4.78	4.63	4.51	4.41	4.30	4.19	4.10	4.03	3.95	3.88	3.83
	250x50x3 RHS	6.95	6.54	6.18	5.89	5.65	5.42	5.26	5.11	4.96	4.82	4.71	4.61	4.50	4.43	4.35	4.26	4.20
	2-250x50x3 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.92	6.74	6.55	6.40	6.24	6.11	5.99	5.88	5.76	5.66	5.56
	300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.72	6.50	6.30	6.14	5.97	5.83	5.70	5.58	5.46	5.37	5.26	5.14
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.88
+1.74 HIGH -2.17	225x50x3 RHS	6.18	5.75	5.41	5.15	4.92	4.7	4.46	4.26	4.08	3.92	3.78	3.65	3.54	3.43	3.33	3.25	3.16
	250x50x3 RHS	6.79	6.30	5.94	5.64	5.40	5.14	4.87	4.65	4.45	4.28	4.13	3.99	3.86	3.75	3.64	3.55	3.46
	2-250x50x3 RHS	6.95	6.95	6.95	6.95	6.95	6.88	6.64	6.44	6.24	6.00	5.79	5.60	5.42	5.26	5.12	4.98	4.86
	300x50x3.5 RHS	6.95	6.95	6.95	6.93	6.49	6.12	5.81	5.54	5.31	5.10	4.92	4.75	4.60	4.46	4.34	4.22	4.12
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.81	6.61	6.43	6.26	6.11
+2.24 VERY HIGH -2.80	225x50x3 RHS	5.50	5.10	4.80	4.57	4.28	4.03	3.83	3.65	3.5	3.36	3.24	3.13	3.04	2.95	2.86	2.79	2.72
	250x50x3 RHS	6.04	5.60	5.27	4.99	4.67	4.41	4.18	3.99	3.82	3.68	3.54	3.42	3.32	3.22	3.13	3.04	2.97
	2-250x50x3 RHS	6.95	6.95	6.95	6.64	6.35	6.13	5.85	5.59	5.36	5.15	4.97	4.81	4.66	4.52	4.40	4.28	4.18
	300x50x3.5 RHS	6.95	6.93	6.41	5.94	5.56	5.25	4.99	4.76	4.56	4.38	4.22	4.08	3.95	3.83	3.73	3.63	3.54
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.73	6.48	6.25	6.04	5.85	5.68	5.53	5.38	5.25
+2.71 EXTRA HIGH -3.39	225x50x3 RHS	5.05	4.70	4.41	4.09	3.83	3.62	3.43	3.28	3.14	3.02	2.91	2.81	2.72	2.64	2.57	2.5	2.44
	250x50x3 RHS	5.54	5.16	4.82	4.47	4.18	3.95	3.75	3.58	3.43	3.29	3.18	3.07	2.97	2.88	2.8	2.73	2.66
	2-250x50x3 RHS	6.95	6.80	6.44	6.12	5.84	5.52	5.25	5.01	4.80	4.62	4.46	4.31	4.18	4.05	3.94	3.84	3.74
	300x50x3.5 RHS	6.87	6.27	5.74	5.32	4.99	4.71	4.47	4.26	4.08	3.93	3.78	3.66	3.54	3.44	3.34	3.25	3.17
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.94	6.59	6.30	6.04	5.81	5.60	5.42	5.25	5.09	4.95	4.82	4.70

PLEASE NOTE:

Aluminium Beams have been limited to 6.95m in length.
 This is the maximum practical length for extruding and powdercoating.

TABLE 6: TO CALCULATE TRIBUTARY LENGTH FOR BEAMS
CHART: BEAM CALCULATIONS DOUBLE STORY UP TO 6 METRE ROOF HEIGHT. REFER STUDIO 89 PS1



DETERMINING THE TRIBUTARY LENGTH

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BEAM TYPES



Fix double beams together with 2/10g x 25mm S/S pan head self tapping screws 50mm in from top and bottom of box sections at 900mm centres.
 Use continuous flexible sealant/adhesive along top and bottom between box sections.

TABLE 6 - BEAM CALCULATIONS DOUBLE STORY UP TO 6M

ULS		Max Beam Span (mm)																	
WIND ZONE	Tributary Length	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	
+0.92 LOW -1.15	225x50x3 RHS	6.48	6.05	5.73	5.44	5.24	5.04	4.86	4.73	4.59	4.47	4.36	4.26	4.17	4.11	4.03	3.96	3.88	
	250x50x3 RHS	6.95	6.63	6.27	5.98	5.73	5.52	5.33	5.18	5.04	4.91	4.78	4.68	4.59	4.48	4.41	4.33	4.27	
	2-250x50x3 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.85	6.67	6.49	6.35	6.21	6.09	5.97	5.87	5.76	5.66	
	300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.78	6.57	6.38	6.20	6.05	5.91	5.77	5.65	5.55	5.44	5.33	5.2	
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	
+1.23 MEDIUM -1.53	225x50x3 RHS	6.38	5.95	5.62	5.36	5.15	4.95	4.79	4.60	4.40	4.23	4.08	3.94	3.82	3.70	3.60	3.50	3.42	
	250x50x3 RHS	6.95	6.53	6.19	5.88	5.64	5.43	5.25	5.02	4.81	4.62	4.46	4.30	4.17	4.05	3.93	3.83	3.73	
	2-250x50x3 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.93	6.72	6.54	6.39	6.25	6.08	5.89	5.71	5.55	5.41	5.27	
	300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.93	6.64	6.30	6.00	5.75	5.52	5.32	5.14	4.98	4.83	4.69	4.57	4.45	
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.82	6.64	
+1.74 HIGH -2.17	225x50x3 RHS	5.57	5.19	4.87	4.64	4.36	4.11	3.90	3.72	3.57	3.43	3.31	3.19	3.09	3.00	2.92	2.84	2.77	
	250x50x3 RHS	6.12	5.68	5.35	5.08	4.76	4.49	4.26	4.07	3.90	3.75	3.61	3.49	3.38	3.28	3.19	3.10	3.03	
	2-250x50x3 RHS	6.95	6.95	6.95	6.74	6.45	6.21	5.97	5.7	5.46	5.25	5.07	4.90	4.75	4.61	4.48	4.36	4.26	
	300x50x3.5 RHS	6.95	6.95	6.56	6.08	5.69	5.37	5.09	4.86	4.65	4.47	4.31	4.16	4.03	3.91	3.8	3.70	3.61	
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.86	6.60	6.37	6.16	5.97	5.79	5.63	5.48	5.35	
+2.24 VERY HIGH -2.80	225x50x3 RHS	4.98	4.64	4.33	4.02	3.76	3.55	3.37	3.22	3.08	2.96	2.85	2.76	2.67	2.59	2.52	2.45	2.39	
	250x50x3 RHS	5.48	5.10	4.73	4.39	4.11	3.88	3.68	3.51	3.36	3.23	3.12	3.01	2.92	2.83	2.75	2.68	2.61	
	2-250x50x3 RHS	6.95	6.71	6.34	6.03	5.73	5.42	5.15	4.92	4.72	4.54	4.38	4.23	4.10	3.98	3.87	3.77	3.68	
	300x50x3.5 RHS	6.81	6.18	5.65	5.24	4.91	4.63	4.39	4.19	4.02	3.86	3.72	3.59	3.48	3.38	3.28	3.20	3.12	
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.95	6.95	6.81	6.47	6.18	5.93	5.70	5.50	5.32	5.15	5.00	4.86	4.74	4.62	
+2.71 EXTRA HIGH -3.39	225x50x3 RHS	4.61	4.25	3.89	3.61	3.38	3.19	3.03	2.89	2.77	2.66	2.57	2.48	2.4	2.33	2.27	2.21	2.15	
	250x50x3 RHS	5.07	4.64	4.25	3.94	3.69	3.49	3.31	3.16	3.03	2.91	2.80	2.71	2.62	2.55	2.48	2.41	2.35	
	2-250x50x3 RHS	6.66	6.22	5.88	5.49	5.16	4.87	4.63	4.42	4.24	4.08	3.94	3.81	3.69	3.58	3.48	3.39	3.31	
	300x50x3.5 RHS	6.19	5.55	5.08	4.71	4.41	4.16	3.95	3.77	3.61	3.47	3.34	3.23	3.13	3.04	2.95	2.87	2.8	
	2-300x50x3.5 RHS	6.95	6.95	6.95	6.90	6.48	6.12	5.82	5.56	5.33	5.13	4.95	4.78	4.63	4.50	4.37	4.26	4.15	

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