

# T153-40L-840 - Z100 - Perforated - Positive - Narrow flange against support.

Dimensioning tables according to EN 1993-1-3.

End support width: = 60 mm.

Middle support width: = 160 mm.

Compare design load where safety factors must be included to table values (1.ULS).

Serviceability limit state safety factors = 1,0.

Self-weight of the sheet has been taken into account with factor 1,35.

Continuous uniform load in [kN/m<sup>2</sup>].

1.Ultimate limit state (ULS; Q).

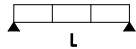
2.Serviceability limit state. Deflection limit  $f = L/150$  (SLS;  $Q_{ch}$ ).

3.Serviceability limit state. Deflection limit  $f = L/200$  (SLS;  $Q_{ch}$ ).

4.Serviceability limit state. Deflection limit  $f = L/250$  (SLS;  $Q_{ch}$ ).

5.Serviceability limit state. Deflection limit  $f = L/300$  (SLS;  $Q_{ch}$ ).

## 1-Span structure

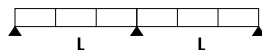


Thick [mm]	State	Span lenght L [m]																				
		4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75	9.00
0.70	1. ULS	5.38	4.87	4.33	3.87	3.49	3.15	2.86	2.61	2.39	2.19	2.02	1.86	1.72	1.60	1.49	1.39	1.29	1.21	1.13	1.06	1.00
	2. L/150	5.39	4.47	3.75	3.18	2.71	2.33	2.01	1.75	1.53	1.34	1.18	1.04	0.92	0.82	0.74	0.66	0.59	0.53	0.48	0.43	0.38
	3. L/200	4.01	3.33	2.79	2.36	2.01	1.72	1.49	1.29	1.12	0.98	0.86	0.76	0.67	0.60	0.53	0.47	0.42	0.37	0.33	0.30	0.26
	4. L/250	3.19	2.65	2.22	1.87	1.59	1.36	1.17	1.01	0.88	0.77	0.66	0.59	0.52	0.46	0.40	0.35	0.31	0.28	0.24	0.22	0.19
	5. L/300	2.64	2.19	1.83	1.54	1.31	1.11	0.96	0.83	0.71	0.62	0.54	0.47	0.41	0.36	0.33	0.28	0.25	0.22	0.19	0.17	0.14
0.80	1. ULS	6.88	6.08	5.41	4.85	4.35	3.94	3.58	3.27	2.99	2.74	2.52	2.33	2.16	2.01	1.87	1.74	1.62	1.52	1.43	1.34	1.26
	2. L/150	6.32	5.26	4.40	3.73	3.18	2.73	2.36	2.06	1.79	1.57	1.39	1.23	1.09	0.97	0.87	0.77	0.70	0.62	0.56	0.51	0.45
	3. L/200	4.71	3.91	3.27	2.77	2.36	2.02	1.75	1.51	1.32	1.16	1.02	0.90	0.79	0.70	0.62	0.55	0.49	0.43	0.39	0.35	0.31
	4. L/250	3.75	3.11	2.60	2.20	1.87	1.60	1.37	1.19	1.03	0.90	0.79	0.69	0.61	0.54	0.47	0.41	0.37	0.33	0.29	0.25	0.23
	5. L/300	3.10	2.57	2.15	1.81	1.54	1.31	1.13	0.96	0.84	0.73	0.64	0.56	0.49	0.43	0.38	0.33	0.30	0.26	0.23	0.20	0.17
0.90	1. ULS	7.91	6.99	6.23	5.57	5.01	4.54	4.12	3.75	3.44	3.16	2.91	2.69	2.49	2.31	2.15	2.00	1.87	1.75	1.64	1.54	1.44
	2. L/150	7.28	6.04	5.07	4.29	3.66	3.15	2.72	2.37	2.07	1.81	1.60	1.41	1.26	1.13	1.00	0.90	0.80	0.72	0.65	0.58	0.52
	3. L/200	5.42	4.50	3.77	3.18	2.71	2.33	2.01	1.74	1.52	1.33	1.17	1.03	0.91	0.81	0.72	0.64	0.57	0.51	0.45	0.40	0.36
	4. L/250	4.31	3.58	2.99	2.53	2.15	1.84	1.58	1.37	1.19	1.04	0.91	0.79	0.70	0.62	0.55	0.48	0.42	0.38	0.34	0.30	0.26
	5. L/300	3.57	2.96	2.47	2.08	1.77	1.51	1.30	1.11	0.97	0.84	0.73	0.65	0.57	0.49	0.44	0.38	0.34	0.29	0.26	0.23	0.20
1.00	1. ULS	8.95	7.91	7.04	6.30	5.67	5.13	4.66	4.25	3.89	3.57	3.29	3.04	2.82	2.61	2.43	2.27	2.12	1.98	1.86	1.74	1.64
	2. L/150	8.23	6.84	5.74	4.86	4.14	3.56	3.08	2.68	2.34	2.05	1.81	1.60	1.43	1.27	1.13	1.01	0.91	0.82	0.73	0.66	0.60
	3. L/200	6.14	5.10	4.26	3.61	3.07	2.63	2.27	1.97	1.72	1.51	1.33	1.17	1.03	0.91	0.81	0.72	0.65	0.58	0.52	0.46	0.41
	4. L/250	4.88	4.05	3.39	2.86	2.43	2.08	1.80	1.55	1.35	1.18	1.03	0.91	0.80	0.70	0.63	0.55	0.48	0.44	0.38	0.34	0.30
	5. L/300	4.04	3.35	2.80	2.36	2.01	1.71	1.47	1.27	1.10	0.95	0.84	0.73	0.64	0.56	0.50	0.44	0.39	0.34	0.30	0.27	0.24
1.20	1. ULS	11.02	9.75	8.67	7.77	6.99	6.32	5.74	5.24	4.79	4.40	4.06	3.75	3.47	3.22	3.00	2.79	2.61	2.44	2.29	2.15	2.02
	2. L/150	9.92	8.25	6.92	5.86	5.00	4.29	3.71	3.23	2.82	2.48	2.19	1.93	1.72	1.53	1.37	1.22	1.10	0.98	0.88	0.80	0.72
	3. L/200	7.40	6.15	5.15	4.35	3.71	3.18	2.74	2.38	2.08	1.81	1.60	1.41	1.25	1.10	0.99	0.88	0.78	0.69	0.62	0.56	0.50
	4. L/250	5.89	4.88	4.09	3.45	2.93	2.52	2.17	1.88	1.63	1.42	1.25	1.10	0.96	0.85	0.75	0.67	0.59	0.53	0.46	0.41	0.36
	5. L/300	4.88	4.04	3.37	2.85	2.42	2.07	1.77	1.53	1.33	1.16	1.00	0.88	0.78	0.68	0.60	0.53	0.46	0.41	0.36	0.32	0.27
	1. ULS	14.01	12.38	11.02	9.86	8.88	8.03	7.29	6.65	6.09	5.59	5.15	4.76	4.41	4.10	3.81	3.55	3.32	3.11	2.92	2.73	2.57
	2. L/150	12.43	10.33	8.67	7.34	6.26	5.38	4.65	4.04	3.54	3.10	2.73	2.42	2.15	1.91	1.71	1.53	1.37	1.23	1.11	1.00	0.90

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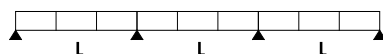
1.50	3. L/200	9.27	7.70	6.45	5.45	4.64	3.98	3.44	2.98	2.60	2.28	2.00	1.76	1.56	1.38	1.23	1.09	0.98	0.87	0.78	0.70	0.63
	4. L/250	7.37	6.11	5.12	4.32	3.67	3.14	2.71	2.35	2.04	1.78	1.56	1.37	1.20	1.07	0.94	0.83	0.73	0.65	0.58	0.52	0.46
	5. L/300	6.11	5.06	4.23	3.56	3.03	2.59	2.22	1.92	1.66	1.45	1.26	1.10	0.97	0.85	0.75	0.66	0.58	0.51	0.45	0.40	0.34

2-Span structure



Thick [mm]	State	Span lenght L [m]																				
		4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75	9.00
0.70	1. ULS	3.39	3.07	2.80	2.55	2.34	2.16	1.99	1.84	1.71	1.59	1.48	1.39	1.30	1.22	1.15	1.07	1.01	0.96	0.91	0.85	0.81
	2. L/150	13.11	10.92	9.19	7.79	6.67	5.75	4.98	4.36	3.82	3.37	2.98	2.65	2.37	2.12	1.91	1.72	1.56	1.40	1.28	1.16	1.06
	3. L/200	9.81	8.16	6.86	5.82	4.98	4.29	3.72	3.24	2.84	2.50	2.20	1.96	1.75	1.56	1.40	1.26	1.14	1.03	0.94	0.85	0.77
	4. L/250	7.83	6.51	5.47	4.64	3.96	3.41	2.95	2.57	2.26	1.98	1.75	1.55	1.38	1.23	1.11	0.99	0.89	0.80	0.72	0.66	0.59
	5. L/300	6.51	5.41	4.54	3.85	3.29	2.82	2.45	2.13	1.86	1.63	1.44	1.28	1.14	1.01	0.90	0.81	0.73	0.65	0.59	0.53	0.48
0.80	1. ULS	4.33	3.92	3.57	3.27	2.99	2.76	2.55	2.36	2.19	2.04	1.90	1.77	1.66	1.56	1.46	1.37	1.30	1.22	1.15	1.09	1.03
	2. L/150	15.41	12.82	10.79	9.16	7.84	6.75	5.86	5.11	4.48	3.96	3.50	3.12	2.78	2.50	2.24	2.02	1.83	1.66	1.51	1.37	1.25
	3. L/200	11.53	9.59	8.06	6.84	5.85	5.04	4.36	3.80	3.34	2.94	2.60	2.31	2.06	1.84	1.65	1.49	1.35	1.22	1.10	1.01	0.91
	4. L/250	9.20	7.65	6.43	5.45	4.65	4.00	3.47	3.02	2.65	2.33	2.06	1.83	1.63	1.45	1.30	1.17	1.05	0.95	0.86	0.78	0.70
	5. L/300	7.65	6.36	5.34	4.52	3.87	3.32	2.87	2.50	2.19	1.92	1.70	1.50	1.34	1.19	1.06	0.95	0.86	0.77	0.70	0.63	0.57
0.90	1. ULS	5.36	4.85	4.41	4.03	3.70	3.41	3.14	2.91	2.70	2.51	2.34	2.19	2.05	1.91	1.80	1.70	1.60	1.50	1.42	1.34	1.27
	2. L/150	17.70	14.74	12.39	10.52	9.00	7.76	6.73	5.88	5.16	4.55	4.03	3.58	3.20	2.87	2.57	2.32	2.10	1.90	1.73	1.58	1.45
	3. L/200	13.24	11.02	9.26	7.85	6.72	5.79	5.01	4.38	3.83	3.38	2.98	2.65	2.37	2.12	1.90	1.71	1.54	1.39	1.27	1.15	1.05
	4. L/250	10.57	8.79	7.38	6.26	5.35	4.60	3.99	3.47	3.04	2.68	2.37	2.10	1.87	1.67	1.50	1.35	1.21	1.10	0.99	0.90	0.81
	5. L/300	8.78	7.30	6.13	5.19	4.44	3.82	3.30	2.87	2.52	2.21	1.95	1.73	1.54	1.37	1.23	1.09	0.98	0.89	0.80	0.73	0.66
1.00	1. ULS	6.50	5.89	5.35	4.89	4.49	4.13	3.81	3.53	3.28	3.05	2.84	2.65	2.48	2.33	2.19	2.06	1.94	1.83	1.73	1.64	1.55
	2. L/150	19.99	16.65	14.01	11.88	10.17	8.76	7.61	6.64	5.83	5.14	4.55	4.05	3.62	3.24	2.91	2.63	2.38	2.16	1.96	1.78	1.63
	3. L/200	14.97	12.46	10.47	8.88	7.59	6.54	5.67	4.95	4.33	3.82	3.38	3.00	2.68	2.40	2.15	1.93	1.75	1.58	1.44	1.31	1.19
	4. L/250	11.95	9.94	8.35	7.08	6.04	5.21	4.51	3.93	3.44	3.03	2.68	2.38	2.12	1.89	1.70	1.52	1.37	1.24	1.12	1.01	0.92
	5. L/300	9.93	8.26	6.93	5.87	5.02	4.31	3.74	3.25	2.84	2.50	2.21	1.96	1.74	1.55	1.39	1.24	1.11	1.00	0.91	0.82	0.74
1.20	1. ULS	8.66	7.84	7.12	6.50	5.96	5.47	5.05	4.67	4.33	4.03	3.75	3.50	3.28	3.07	2.89	2.71	2.55	2.40	2.28	2.15	2.03
	2. L/150	24.18	20.12	16.93	14.36	12.30	10.60	9.20	8.03	7.05	6.22	5.50	4.90	4.37	3.92	3.52	3.18	2.88	2.60	2.37	2.16	1.97
	3. L/200	18.08	15.06	12.65	10.73	9.18	7.90	6.85	5.98	5.24	4.62	4.08	3.63	3.24	2.90	2.60	2.34	2.12	1.91	1.74	1.58	1.44
	4. L/250	14.44	12.00	10.09	8.55	7.31	6.29	5.45	4.75	4.16	3.66	3.24	2.87	2.56	2.29	2.05	1.84	1.66	1.50	1.36	1.23	1.12
	5. L/300	12.00	9.98	8.38	7.10	6.06	5.21	4.51	3.93	3.44	3.02	2.67	2.37	2.10	1.87	1.68	1.51	1.35	1.22	1.09	0.99	0.90
1.50	1. ULS	11.81	10.65	9.65	8.79	8.03	7.36	6.78	6.26	5.80	5.38	5.01	4.67	4.36	4.09	3.83	3.60	3.39	3.19	3.01	2.85	2.69
	2. L/150	30.27	25.20	21.19	18.00	15.40	13.27	11.52	10.05	8.82	7.78	6.90	6.13	5.48	4.91	4.41	3.98	3.60	3.26	2.97	2.70	2.47
	3. L/200	22.67	18.85	15.85	13.44	11.50	9.91	8.59	7.49	6.56	5.78	5.12	4.55	4.05	3.63	3.26	2.93	2.65	2.39	2.17	1.97	1.80
	4. L/250	18.09	15.04	12.64	10.72	9.16	7.88	6.83	5.95	5.21	4.58	4.05	3.60	3.20	2.86	2.57	2.31	2.08	1.87	1.70	1.54	1.40
	5. L/300	15.03	12.50	10.50	8.89	7.60	6.53	5.65	4.92	4.31	3.79	3.34	2.96	2.63	2.35	2.11	1.89	1.70	1.53	1.38	1.25	1.12

3-Span structure



Thick [mm]	State	Span lenght L [m]																				
		4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75	9.00
0.70	1. ULS	4.08	3.70	3.38	3.09	2.84	2.63	2.43	2.25	2.09	1.95	1.82	1.70	1.60	1.50	1.41	1.33	1.26	1.18	1.12	1.06	1.00
	2. L/150	10.40	8.66	7.28	6.17	5.28	4.55	3.94	3.44	3.01	2.65	2.35	2.09	1.86	1.67	1.50	1.35	1.22	1.10	1.00	0.91	0.82
	3. L/200	7.78	6.47	5.43	4.60	3.93	3.39	2.93	2.55	2.24	1.97	1.73	1.54	1.37	1.22	1.09	0.98	0.89	0.80	0.72	0.65	0.59
	4. L/250	6.21	5.16	4.33	3.66	3.13	2.69	2.33	2.02	1.77	1.56	1.37	1.22	1.08	0.96	0.86	0.77	0.69	0.62	0.56	0.50	0.45
	5. L/300	5.15	4.28	3.59	3.04	2.59	2.23	1.92	1.67	1.46	1.28	1.12	0.99	0.88	0.78	0.70	0.62	0.56	0.50	0.45	0.40	0.36

0.80	1. ULS	5.22	4.74	4.32	3.95	3.63	3.35	3.10	2.87	2.67	2.49	2.32	2.18	2.05	1.92	1.80	1.70	1.60	1.52	1.43	1.35	1.29
	2. L/150	12.21	10.17	8.55	7.25	6.20	5.34	4.63	4.04	3.54	3.12	2.76	2.45	2.19	1.96	1.76	1.58	1.43	1.29	1.17	1.07	0.97
	3. L/200	9.14	7.60	6.38	5.41	4.62	3.97	3.44	3.00	2.63	2.31	2.04	1.81	1.61	1.45	1.30	1.16	1.05	0.95	0.86	0.77	0.70
	4. L/250	7.28	6.06	5.09	4.31	3.68	3.16	2.73	2.38	2.08	1.83	1.61	1.43	1.27	1.13	1.01	0.91	0.81	0.73	0.66	0.60	0.54
	5. L/300	6.05	5.03	4.22	3.57	3.04	2.61	2.26	1.96	1.71	1.51	1.32	1.16	1.03	0.92	0.82	0.74	0.66	0.59	0.53	0.48	0.43
0.90	1. ULS	6.45	5.86	5.34	4.89	4.49	4.14	3.83	3.55	3.30	3.07	2.87	2.68	2.52	2.36	2.22	2.09	1.97	1.86	1.76	1.67	1.58
	2. L/150	14.04	11.68	9.82	8.34	7.12	6.14	5.32	4.64	4.07	3.58	3.17	2.82	2.52	2.25	2.02	1.82	1.64	1.49	1.36	1.23	1.12
	3. L/200	10.50	8.74	7.34	6.22	5.32	4.58	3.96	3.45	3.02	2.66	2.35	2.09	1.86	1.66	1.49	1.33	1.20	1.09	0.99	0.89	0.81
	4. L/250	8.37	6.96	5.84	4.95	4.22	3.63	3.14	2.74	2.40	2.10	1.85	1.65	1.46	1.30	1.16	1.04	0.94	0.84	0.76	0.69	0.62
	5. L/300	6.96	5.78	4.85	4.10	3.51	3.01	2.60	2.26	1.97	1.73	1.52	1.35	1.19	1.06	0.95	0.84	0.76	0.68	0.61	0.55	0.50
1.00	1. ULS	7.82	7.10	6.48	5.93	5.45	5.02	4.64	4.30	4.00	3.73	3.48	3.26	3.05	2.87	2.70	2.53	2.40	2.27	2.14	2.03	1.92
	2. L/150	15.87	13.22	11.11	9.42	8.06	6.94	6.02	5.25	4.61	4.05	3.59	3.19	2.85	2.55	2.29	2.06	1.86	1.68	1.53	1.39	1.27
	3. L/200	11.87	9.87	8.30	7.04	6.01	5.17	4.48	3.90	3.42	3.01	2.66	2.36	2.10	1.87	1.68	1.51	1.37	1.23	1.12	1.01	0.91
	4. L/250	9.47	7.88	6.61	5.60	4.78	4.11	3.56	3.09	2.71	2.38	2.10	1.86	1.65	1.47	1.32	1.18	1.06	0.96	0.86	0.78	0.71
	5. L/300	7.87	6.54	5.48	4.64	3.96	3.40	2.94	2.56	2.23	1.96	1.73	1.53	1.35	1.20	1.07	0.96	0.86	0.77	0.70	0.63	0.56
1.20	1. ULS	10.47	9.48	8.64	7.89	7.24	6.66	6.16	5.71	5.30	4.93	4.60	4.30	4.03	3.78	3.56	3.35	3.16	2.99	2.82	2.67	2.54
	2. L/150	19.17	15.95	13.41	11.38	9.73	8.39	7.27	6.34	5.56	4.90	4.34	3.85	3.44	3.08	2.77	2.49	2.25	2.04	1.85	1.68	1.53
	3. L/200	14.33	11.92	10.02	8.49	7.26	6.25	5.41	4.71	4.13	3.64	3.21	2.85	2.54	2.27	2.03	1.82	1.65	1.49	1.34	1.22	1.11
	4. L/250	11.43	9.51	7.98	6.76	5.77	4.96	4.30	3.74	3.27	2.87	2.54	2.25	2.00	1.78	1.59	1.43	1.28	1.16	1.04	0.94	0.85
	5. L/300	9.50	7.90	6.62	5.60	4.78	4.11	3.55	3.09	2.70	2.37	2.08	1.84	1.64	1.46	1.30	1.17	1.04	0.93	0.84	0.76	0.68
1.50	1. ULS	14.32	12.94	11.75	10.71	9.81	9.01	8.31	7.68	7.12	6.62	6.17	5.75	5.39	5.05	4.74	4.46	4.20	3.97	3.75	3.55	3.36
	2. L/150	24.02	19.98	16.79	14.25	12.18	10.50	9.11	7.94	6.97	6.14	5.43	4.83	4.30	3.86	3.46	3.12	2.82	2.55	2.31	2.10	1.92
	3. L/200	17.96	14.94	12.55	10.63	9.09	7.82	6.77	5.90	5.17	4.55	4.02	3.57	3.18	2.84	2.54	2.28	2.06	1.86	1.68	1.53	1.39
	4. L/250	14.32	11.90	10.00	8.46	7.23	6.22	5.38	4.68	4.10	3.60	3.18	2.82	2.50	2.24	2.00	1.79	1.61	1.45	1.31	1.18	1.07
	5. L/300	11.90	9.88	8.29	7.02	5.99	5.14	4.45	3.87	3.38	2.96	2.61	2.31	2.05	1.82	1.63	1.45	1.31	1.17	1.05	0.95	0.85