

# EQC D60 S280 steel

03.2017

<b>Application:</b>	Structural metal roof deck	<b>Material:</b>	Interior liner and Galvanised steel
<b>Yield Stress (MPa):</b>	280	<b>Intermediate Support width:</b>	≥60 mm
<b>Ym:</b>	1	<b>End Support width:</b>	≥10 mm NOTE: FOR PRACTICAL PURPOSES ALLOW 40MM MINIMUM

			Broad flange in compression		Narrow flange in compression				60mm Bearing
Material Specification	Design t mm	Weight kg/m <sup>2</sup>	Moment Capacity kNm/m	Moment of Inertia cm <sup>4</sup> /m	Moment Capacity kNm/m	Moment of Inertia cm <sup>4</sup> /m	Transverse Resistance Internal R <sub>w</sub> kN/m	Transverse Resistance End R <sub>w</sub> kN/m	Shear Capacity kN/m
0.7mm Steel S280*	0.66	8.34	4.432	48.962	4.511	54.633	21.301	6.053	46.338
0.75mm Steel S280*	0.71	9.04	4.95	53.907	4.985	59.816	24.264	6.947	53.625
0.9mm Steel S280*	0.86	10.73	6.318	69.227	6.256	74.135	34.117	9.966	78.678
1.2mm Steel S280*	1.16	14.32	8.73	100.67	8.735	102.22	57.977	17.488	121.05

↓ Safe Imposed (positive) Loads (kN/m<sup>2</sup>) ↓

### Single Span

t <sub>w</sub> [mm]	0.7				0.75				0.9				1.2			
Span (m)	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	4.04	4.04	4.04	3.5	4.63	4.63	4.59	3.82	6.64	6.64	5.77	4.8	11.64	10.21	8.17	6.81
2.2	3.67	3.67	3.16	2.63	4.21	4.21	3.44	2.87	6.04	5.41	4.33	3.61	9.62	7.67	6.14	5.11
2.4	3.36	3.04	2.43	2.03	3.86	3.32	2.65	2.21	5.54	4.17	3.34	2.78	7.88	5.91	4.73	3.94
2.6	3.1	2.39	1.91	1.59	3.48	2.61	2.09	1.74	4.37	3.28	2.62	2.19	6.2	4.65	3.72	3.1
2.8	2	1.91	1.53	1.28	2.78	2.09	1.67	1.39	3.5	2.63	2.1	1.75	4.96	3.72	2.98	2.48
3.0	2.55	1.56	1.24	1.04	2.26	1.7	1.36	1.13	2.85	2.14	1.71	1.42	4.03	3.03	2.42	2.02
3.2	2.07	1.28	1.03	0.85	1.87	1.4	1.12	0.93	2.35	1.76	1.41	1.17	3.32	2.49	1.99	1.66
3.4	1.71	1.07	0.85	0.71	1.56	1.17	0.93	0.78	1.96	1.47	1.17	0.98	2.77	2.08	1.66	1.39
3.6	1.2	0.9	0.72	0.6	1.31	0.98	0.79	0.66	1.65	1.24	0.99	0.82	2.33	1.75	1.4	1.17
3.8	1.02	0.77	0.61	0.51	1.11	0.84	0.67	0.56	1.4	1.05	0.84	0.7	1.98	1.49	1.19	0.99
4.0	0.88	0.66	0.53	0.44	0.96	0.72	0.57	0.48	1.2	0.9	0.72	0.6	1.7	1.28	1.02	0.85
4.2	0.76	0.57	0.45	0.38	0.83	0.62	0.5	0.41	1.04	0.78	0.62	0.52	1.47	1.1	0.88	0.74
4.4	0.66	0.49	0.39	0.33	0.72	0.54	0.43	0.36	0.9	0.68	0.54	0.45	1.28	0.96	0.77	0.64
4.6	0.58	0.43	0.35	0.29	0.63	0.47	0.38	0.31	0.79	0.59	0.47	0.39	1.12	0.84	0.67	0.56
4.8	0.51	0.38	0.3	0.25	0.55	0.41	0.33	0.28	0.7	0.52	0.42	0.35	0.98	0.74	0.59	0.49
5.0	0.45	0.34	0.27	0.22	0.49	0.37	0.29	0.24	0.61	0.46	0.37	0.31	0.87	0.65	0.52	0.44
5.2	0.4	0.3	0.24	0.2	0.43	0.33	0.26	0.22	0.55	0.41	0.33	0.27	0.77	0.58	0.46	0.39

### Double Span

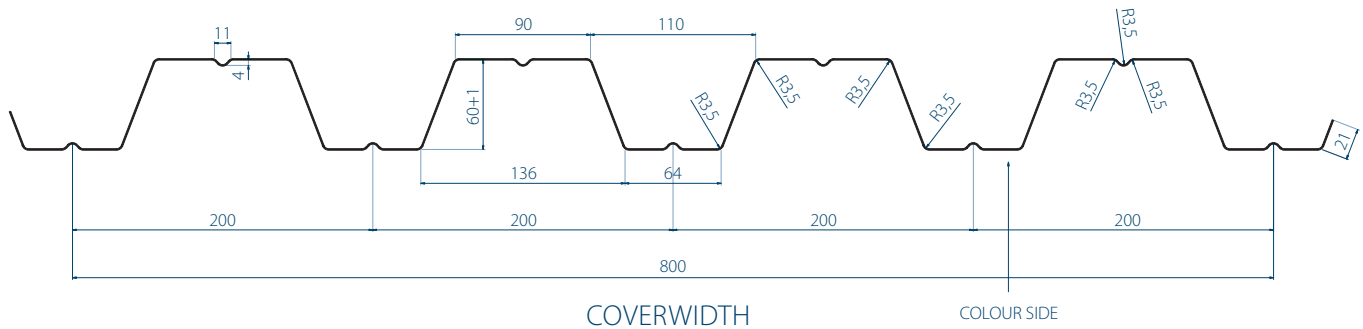
t <sub>w</sub> [mm]	0.7				0.75				0.9				1.2			
Span (m)	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	3.65	3.65	3.65	3.65	4.1	4.1	4.1	4.1	5.44	5.44	5.44	5.44	8.3	8.3	8.3	8.3
2.2	3.17	3.17	3.17	3.17	3.55	3.55	3.55	3.55	4.7	4.7	4.7	4.7	7.14	7.14	7.14	7.14
2.4	2.77	2.77	2.77	2.77	3.11	3.11	3.11	3.11	4.1	4.1	4.1	4.1	6.21	6.21	6.21	6.21
2.6	2.45	2.45	2.45	2.45	2.75	2.75	2.75	2.75	3.62	3.62	3.62	3.62	5.45	5.45	5.45	5.16
2.8	2.18	2.18	2.18	2.13	2.44	2.44	2.44	2.32	3.21	3.21	3.21	2.92	4.83	4.83	4.83	4.13
3.0	1.96	1.96	1.96	1.73	2.19	2.19	2.19	1.89	2.88	2.88	2.85	2.37	4.31	4.31	4.03	3.36
3.2	1.77	1.77	1.71	1.42	1.98	1.98	1.87	1.55	2.59	2.59	2.35	1.95	3.87	3.87	3.32	2.77
3.4	1.6	1.6	1.42	1.19	1.79	1.79	1.56	1.3	2.34	2.34	1.96	1.63	3.49	3.46	2.77	2.31
3.6	1.46	1.46	1.2	1	1.63	1.63	1.31	1.09	2.13	2.06	1.65	1.37	3.17	2.92	2.33	1.95
3.8	1.34	1.28	1.02	0.85	1.49	1.39	1.11	0.93	1.95	1.75	1.4	1.17	2.89	2.48	1.98	1.65
4.0	1.23	1.09	0.88	0.73	1.37	1.19	0.96	0.8	1.79	1.5	1.2	1	2.64	2.13	1.7	1.42
4.2	1.13	0.94	0.76	0.63	1.27	1.03	0.83	0.69	1.65	1.3	1.04	0.86	2.43	1.84	1.47	1.23
4.4	1.05	0.82	0.66	0.55	1.17	0.9	0.72	0.6	1.5	1.13	0.9	0.75	2.13	1.6	1.28	1.07
4.6	0.96	0.72	0.58	0.48	1.05	0.79	0.63	0.52	1.32	0.99	0.79	0.66	1.86	1.4	1.12	0.93
4.8	0.84	0.63	0.51	0.42	0.92	0.69	0.55	0.46	1.16	0.87	0.7	0.58	1.64	1.23	0.98	0.82
5.0	0.75	0.56	0.45	0.37	0.82	0.61	0.49	0.41	1.02	0.77	0.61	0.51	1.45	1.09	0.87	0.73
5.2	0.66	0.5	0.4	0.33	0.72	0.54	0.43	0.36	0.91	0.68	0.55	0.46	1.29	0.97	0.77	0.65

### Multiple Span

t <sub>w</sub> [mm]	0.7				0.75				0.9				1.2			
Span (m)	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	4.34	4.34	4.34	4.34	4.88	4.88	4.88	4.88	6.49	6.49	6.49	6.49	9.95	9.95	9.95	9.95
2.2	3.77	3.77	3.77	3.77	4.23	4.23	4.23	4.23	5.62	5.62	5.62	5.62	8.58	8.58	8.58	8.52
2.4	3.31	3.31	3.31	3.31	3.71	3.71	3.71	3.69	4.92	4.92	4.92	4.63	7.48	7.48	7.48	6.57
2.6	2.93	2.93	2.93	2.66	3.29	3.29	3.29	2.9	4.34	4.34	4.34	3.64	6.58	6.58	6.2	5.16
2.8	2.62	2.62	2.55	2.13	2.93	2.93	2.78	2.32	3.87	3.87	3.5	2.92	5.83	5.83	4.96	4.13
3.0	2.35	2.35	2.07	1.73	2.63	2.63	2.26	1.89	3.46	3.46	2.85	2.37	5.21	5.04	4.03	3.36
3.2	2.12	2.12	1.71	1.42	2.38	2.33	1.87	1.55	3.12	2.93	2.35	1.95	4.68	4.15	3.32	2.77
3.4	1.93	1.78	1.42	1.19	2.16	1.94	1.56	1.3	2.83	2.44	1.96	1.63	4.23	3.46	2.77	2.31
3.6	1.76	1.5	1.2	1	1.97	1.64	1.31	1.09	2.58	2.06	1.65	1.37	3.85	2.92	2.33	1.95
3.8	1.61	1.28	1.02	0.85	1.8	1.39	1.11	0.93	2.33	1.75	1.4	1.17	3.31	2.48	1.98	1.65
4.0	1.46	1.09	0.88	0.73	1.59	1.19	0.96	0.8	2	1.5	1.2	1	2.84	2.13	1.7	1.42
4.2	1.26	0.94	0.76	0.63	1.38	1.03	0.83	0.69	1.73	1.3	1.04	0.86	2.45	1.84	1.47	1.23
4.4	1.1	0.82	0.66	0.55	1.2	0.9	0.72	0.6	1.5	1.13	0.9	0.75	2.13	1.6	1.28	1.07
4.6	0.96	0.72	0.58	0.48	1.05	0.79	0.63	0.52	1.32	0.99	0.79	0.66	1.86	1.4	1.12	0.93
4.8	0.84	0.63	0.51	0.42	0.92	0.69	0.55	0.46	1.16	0.87	0.7	0.58	1.64	1.23	0.98	0.82
5.0	0.75	0.56	0.45	0.37	0.82	0.61	0.49	0.41	1.02	0.77	0.61	0.51	1.45	1.09	0.87	0.73
5.2	0.66	0.5	0.4	0.33	0.72	0.54	0.43	0.36	0.91	0.68	0.55	0.46	1.29	0.97	0.77	0.65

Deflection Limit Span 'L'

See overleaf for Applied Notes



↑ Safe Wind Suction (negative) Loads (kN/m<sup>2</sup>) ↑

**Single Span**

t <sub>N</sub> [mm]	0.7				0.75				0.9				1.2			
	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	4.04	4.04	4.04	3.75	4.63	4.63	4.63	4.09	6.64	6.64	6.03	5.02	11.65	10.31	8.25	6.88
2.2	3.67	3.67	3.38	2.82	4.21	4.21	3.68	3.07	6.04	5.66	4.53	3.77	9.63	7.75	6.2	5.17
2.4	3.36	3.26	2.61	2.17	3.86	3.55	2.84	2.36	5.54	4.36	3.49	2.91	7.96	5.97	4.78	3.98
2.6	3.1	2.56	2.05	1.71	3.56	2.79	2.23	1.86	4.57	3.43	2.74	2.29	6.26	4.69	3.76	3.13
2.8	2.74	2.05	1.64	1.37	2.98	2.23	1.79	1.49	3.66	2.75	2.2	1.83	5.01	3.76	3.01	2.51
3.0	2.22	1.67	1.33	1.11	2.42	1.82	1.45	1.21	2.98	2.23	1.79	1.49	4.07	3.06	2.44	2.04
3.2	1.83	1.37	1.1	0.92	1.99	1.5	1.2	1	2.45	1.84	1.47	1.23	3.36	2.52	2.01	1.68
3.4	1.53	1.15	0.92	0.76	1.66	1.25	1	0.83	2.05	1.53	1.23	1.02	2.8	2.1	1.68	1.4
3.6	1.29	0.97	0.77	0.64	1.4	1.05	0.84	0.7	1.72	1.29	1.03	0.86	2.36	1.77	1.41	1.18
3.8	1.09	0.82	0.66	0.55	1.19	0.89	0.71	0.6	1.46	1.1	0.88	0.73	2.01	1.5	1.2	1
4.0	0.94	0.7	0.56	0.47	1.02	0.77	0.61	0.51	1.26	0.94	0.75	0.63	1.72	1.29	1.03	0.86
4.2	0.81	0.61	0.49	0.41	0.88	0.66	0.53	0.44	1.08	0.81	0.65	0.54	1.48	1.11	0.89	0.74
4.4	0.71	0.53	0.42	0.35	0.77	0.58	0.46	0.38	0.94	0.71	0.57	0.47	1.29	0.97	0.77	0.65
4.6	0.62	0.46	0.37	0.31	0.67	0.5	0.4	0.34	0.83	0.62	0.5	0.41	1.13	0.85	0.68	0.57
4.8	0.54	0.41	0.33	0.27	0.59	0.44	0.35	0.3	0.73	0.55	0.44	0.36	0.99	0.75	0.6	0.5
5.0	0.48	0.36	0.29	0.24	0.52	0.39	0.31	0.26	0.64	0.48	0.39	0.32	0.88	0.66	0.53	0.44
5.2	0.43	0.32	0.26	0.21	0.46	0.35	0.28	0.23	0.57	0.43	0.34	0.29	0.78	0.59	0.47	0.39

**Double Span**

t <sub>N</sub> [mm]	0.7				0.75				0.9				1.2			
	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	3.62	3.62	3.62	3.62	4.08	4.08	4.08	4.08	5.47	5.47	5.47	5.47	8.3	8.3	8.3	8.3
2.2	3.14	3.14	3.14	3.14	3.54	3.54	3.54	3.54	4.73	4.73	4.73	4.73	7.14	7.14	7.14	7.14
2.4	2.75	2.75	2.75	2.75	3.1	3.1	3.1	3.1	4.13	4.13	4.13	4.13	6.21	6.21	6.21	6.21
2.6	2.43	2.43	2.43	2.43	2.74	2.74	2.74	2.74	3.64	3.64	3.64	3.64	5.45	5.45	5.45	5.22
2.8	2.16	2.16	2.16	2.16	2.44	2.44	2.44	2.44	3.23	3.23	3.23	3.05	4.83	4.83	4.83	4.18
3.0	1.94	1.94	1.94	1.85	2.18	2.18	2.18	2.02	2.89	2.89	2.89	2.48	4.31	4.31	4.07	3.4
3.2	1.75	1.75	1.75	1.53	1.97	1.97	1.97	1.66	2.61	2.61	2.45	2.04	3.86	3.86	3.36	2.8
3.4	1.59	1.59	1.53	1.27	1.78	1.78	1.66	1.39	2.36	2.36	2.05	1.7	3.49	3.49	2.8	2.33
3.6	1.44	1.44	1.29	1.07	1.63	1.63	1.4	1.17	2.15	2.15	1.72	1.44	3.17	2.95	2.36	1.97
3.8	1.32	1.32	1.09	0.91	1.49	1.49	1.19	0.99	1.96	1.83	1.46	1.22	2.89	2.51	2.01	1.67
4.0	1.21	1.17	0.94	0.78	1.37	1.28	1.02	0.85	1.8	1.57	1.26	1.05	2.64	2.15	1.72	1.43
4.2	1.12	1.01	0.81	0.68	1.26	1.1	0.88	0.74	1.66	1.36	1.08	0.9	2.43	1.86	1.48	1.24
4.4	1.04	0.88	0.71	0.59	1.16	0.96	0.77	0.64	1.53	1.18	0.94	0.79	2.15	1.61	1.29	1.08
4.6	0.96	0.77	0.62	0.51	1.08	0.84	0.67	0.56	1.38	1.03	0.83	0.69	1.88	1.41	1.13	0.94
4.8	0.89	0.68	0.54	0.45	0.99	0.74	0.59	0.49	1.21	0.91	0.73	0.61	1.66	1.24	0.99	0.83
5.0	0.8	0.6	0.48	0.4	0.87	0.65	0.52	0.44	1.07	0.8	0.64	0.54	1.47	1.1	0.88	0.73
5.2	0.71	0.53	0.43	0.36	0.77	0.58	0.46	0.39	0.95	0.71	0.57	0.48	1.3	0.98	0.78	0.65

**Multiple Span**

t <sub>N</sub> [mm]	0.7				0.75				0.9				1.2			
	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300	L/150	L/200	L/250	L/300
2.0	4.31	4.31	4.31	4.31	4.86	4.86	4.86	4.86	6.52	6.52	6.52	6.52	9.95	9.95	9.95	9.95
2.2	3.74	3.74	3.74	3.74	4.22	4.22	4.22	4.22	5.65	5.65	5.65	5.65	8.58	8.58	8.58	8.58
2.4	3.28	3.28	3.28	3.28	3.7	3.7	3.7	3.7	4.94	4.94	4.94	4.85	7.47	7.47	7.47	6.63
2.6	2.91	2.91	2.91	2.85	3.28	3.28	3.28	3.1	4.37	4.37	4.37	3.81	6.57	6.57	6.26	5.22
2.8	2.59	2.59	2.59	2.28	2.92	2.92	2.92	2.48	3.89	3.89	3.66	3.05	5.83	5.83	5.01	4.18
3.0	2.33	2.33	2.22	1.85	2.62	2.62	2.42	2.02	3.48	3.48	2.98	2.48	5.21	5.09	4.07	3.4
3.2	2.1	2.1	1.83	1.53	2.37	2.37	1.99	1.66	3.14	3.07	2.45	2.04	4.68	4.2	3.36	2.8
3.4	1.91	1.91	1.53	1.27	2.15	2.08	1.66	1.39	2.85	2.56	2.05	1.7	4.23	3.5	2.8	2.33
3.6	1.74	1.61	1.29	1.07	1.96	1.75	1.4	1.17	2.59	2.15	1.72	1.44	3.84	2.95	2.36	1.97
3.8	1.6	1.37	1.09	0.91	1.8	1.49	1.19	0.99	2.37	1.83	1.46	1.22	3.34	2.51	2.01	1.67
4.0	1.47	1.17	0.94	0.78	1.65	1.28	1.02	0.85	2.09	1.57	1.26	1.05	2.87	2.15	1.72	1.43
4.2	1.35	1.01	0.81	0.68	1.47	1.1	0.88	0.74	1.81	1.36	1.08	0.9	2.47	1.86	1.48	1.24
4.4	1.18	0.88	0.71	0.59	1.28	0.96	0.77	0.64	1.57	1.18	0.94	0.79	2.15	1.61	1.29	1.08
4.6	1.03	0.77	0.62	0.51	1.12	0.84	0.67	0.56	1.38	1.03	0.83	0.69	1.88	1.41	1.13	0.94
4.8	0.91	0.68	0.54	0.45	0.99	0.74	0.59	0.49	1.21	0.91	0.73	0.61	1.66	1.24	0.99	0.83
5.0	0.8	0.6	0.48	0.4	0.87	0.65	0.52	0.44	1.07	0.8	0.64	0.54	1.47	1.1	0.88	0.73
5.2	0.71	0.53	0.43	0.36	0.77	0.58	0.46	0.39	0.95	0.71	0.57	0.48	1.3	0.98	0.78	0.65

**APPLIED STANDARDS / NOTES**

Tolerances/Coatings	EN 10143	Steel Quality	EN 10346	Handling	European Recommendations
Tests/Calculations	EN 1990, EN 1991 1-6, EN 1993 1-3, EN 1993 1-5 (Calculations are to Eurocode, however additional checks such as fixings are required)				
	Deck self weight has not been allowed for, so has to be included in applied loads				