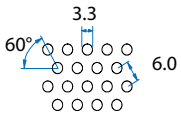
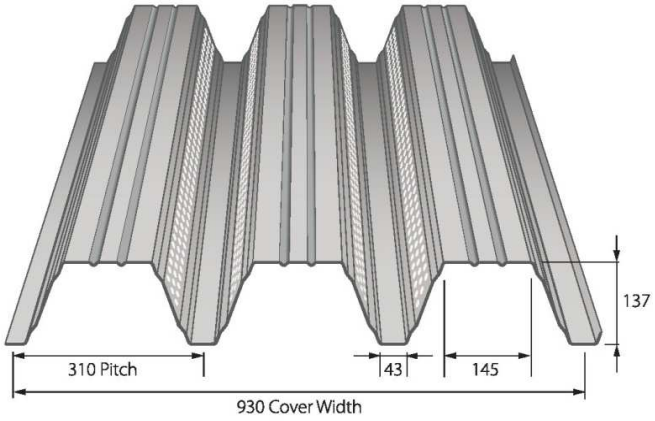
TATA STEEL

RoofDek D137 perforated web

Perforating pattern 3327 (27%). 3.3mm ø holes at 6.0mm triangular centres.

Open area is 7.0% of exposed soffit (11.5% of cover area)





Ultimate Section Properties to Eurocode

Material specification	Design thickness	Weight	Broad flange in compression: Moment Capacity	Broad flange in compression: Moment of Inertia	Narrow flange in compression: Moment Capacity	Narrow flange in compression: Moment of Inertia	100 mm Bearing on steel beam: Transverse Resistance		Shear Capacity
	mm	kg/m²	kNm/m	cm4/m	kNm/m	cm4/m	Internal Rw kN/m	End Rw kN/m	kN/m
0.75mm Steel S320	0.71	8.79	8.92	275.96	6.75	263.26	15.05	3.47	31.72
0.90mm Steel S320	0.86	10.55	11.70	339.98	9.04	329.11	22.35	5.28	45.23
1.25mm Steel S320	1.21	14.68	19.09	475.30	15.00	478.07	43.86	10.83	85.50
1.20mm Alu 0.2%165	1.20	4.88	7.84	418.81	6.33	418.45	16.27	4.01	31.73

Safe Loads (kN/m²)

Imposed load - deflection limit span / 200

Wind suction load - deflection limit span / 150

		Span	SPAN (metres)															
		Condition	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50
0.75mm Steel S320	Imposed	Single	1.62	1.48	1.37	1.26	1.18	1.10	1.03	0.97	0.92	-	-	-	-	-	-	-
		Double	2.19	2.00	1.84	1.70	1.59	1.48	1.36	1.25	1.16	1.07	0.99	0.92	-	-	-	-
		Multi	2.04	1.87	1.72	1.59	1.48	1.39	1.30	1.23	1.16	1.10	1.04	0.99	0.95	0.91	-	-
	Suction	Single	4.81	4.05	3.46	2.99	2.62	2.31	2.05	1.83	1.65	-	-	-	-	-	-	-
		Double	6.35	5.35	4.56	3.94	3.44	3.03	2.69	2.41	2.17	1.96	1.78	1.63	-	-	-	-
		Multi	7.49	6.30	5.38	4.65	4.05	3.57	3.17	2.83	2.55	2.31	2.10	1.92	1.76	1.62	-	-
0.90mm Steel S320	Imposed	Single	2.49	2.28	2.10	1.94	1.81	1.69	1.59	1.50	1.41	1.34	1.27	1.21	1.16	1.10	1.02	-
		Double	3.34	3.06	2.82	2.58	2.34	2.13	1.95	1.79	1.65	1.53	1.42	1.32	1.23	1.15	1.08	1.01
		Multi	3.13	2.86	2.64	2.44	2.28	2.13	2.00	1.89	1.78	1.69	1.61	1.53	1.46	1.38	1.30	1.22
	Suction	Single	6.44	5.42	4.63	4.00	3.50	3.08	2.74	2.45	2.21	2.00	1.82	1.66	1.53	1.41	1.30	-
		Double	8.32	7.00	5.98	5.16	4.51	3.97	3.52	3.15	2.83	2.56	2.33	2.13	1.96	1.80	1.67	1.55
		Multi	10.03	8.44	7.20	6.22	5.42	4.78	4.24	3.79	3.41	3.08	2.80	2.56	2.35	2.16	2.00	1.85
1.25mm Steel S320	Imposed	Single	5.15	4.72	4.35	4.03	3.75	3.51	3.30	3.11	2.94	2.79	2.50	2.16	1.87	1.63	1.43	1.25
		Double	6.71	5.94	5.31	4.77	4.32	3.92	3.58	3.29	3.03	2.79	2.59	2.40	2.24	2.09	1.96	1.83
		Multi	6.47	5.92	5.46	5.06	4.72	4.42	4.15	3.91	3.62	3.35	3.11	2.89	2.70	2.52	2.36	2.22
	Suction	Single	10.67	8.99	7.67	6.63	5.78	5.10	4.53	4.05	3.64	3.30	3.00	2.74	2.52	2.32	2.14	1.99
		Double	13.56	11.41	9.74	8.41	7.34	6.46	5.73	5.12	4.61	4.17	3.79	3.46	3.18	2.92	2.70	2.51
		Multi	16.63	13.99	11.93	10.30	8.99	7.91	7.02	6.27	5.64	5.10	4.63	4.23	3.88	3.57	3.30	3.05
1.20mm Alu 0.2%165	Imposed	Single	1.91	1.75	1.61	1.50	1.39	1.31	1.23	1.16	1.00	-	-	-	-	-	-	-
		Double	2.56	2.32	2.07	1.87	1.70	1.54	1.41	1.30	1.20	1.11	1.03	0.96	-	-	-	-
		Multi	2.40	2.20	2.03	1.88	1.75	1.64	1.54	1.45	1.38	1.31	1.23	1.15	1.07	0.94	-	-
	Suction	Single	4.50	3.78	3.23	2.79	2.43	2.14	1.90	1.69	1.45	-	-	-	-	-	-	-
		Double	5.56	4.68	3.99	3.44	3.00	2.64	2.35	2.10	1.88	1.70	1.55	1.41	-	-	-	-
		Multi	6.94	5.84	4.98	4.30	3.75	3.30	2.92	2.61	2.35	2.12	1.93	1.75	1.54	1.36	-	-

NOTES Black figures are stress limited, the load shown is the ultimate load divided by 1.5.
Blue figures are deflection limited.
Red figures show deck length exceeds 12m, these spans need extended end laps.
Calculations are to Eurocode, however additional checks such as fixings are required
A construction line load of 1.5kN/m has been allowed for.
Deck self weight has been allowed for, so does not have to be included in applied loads

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