Technical Details

Section Properties (Per Meter Width) Base Metal: Aluminium

Thickness (T) mm	Cover Width mm	Nominal Weight Kg/m²	Area cm²	Full Sect. (E.) (kN/cm4)	Elastic Modulus (E) (kN/cm²)	Top in compression				Bottom in compression			
						Lxet (cm4)	Sx-Top (cm³)	Sx-bot (cm³)	Ma bx (kNm)	Ixeb (cm4)	Sx-Top (cm³)	Sx-Bot (cm³)	Ma bx (kNm)
0.70	1000	6.42	8.47	166.00	69.00	139.64	21.30	47.50	1.85	107.00	24.55	21.55	1.90
0.50			5.40										

Allowable Uniform Loads (kN/m²) Base Metal: Aluminium

Nominal Thickness (T) mm	Insulation Thickness	No. of Spans	Load Case	Span (m)										
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.7 + 0.5	100mm	1	*D + L	14.82	9.49	6.59	4.84	3.71	2.93	2.37	1.96	1.65	1.40	1.14
			**WS	15.20	9.73	6.76	4.96	3.80	3.00	2.43	2.01	1.69	1.42	1.14
	75mm	2	D + L	9.94	7.14	5.35	4.40	3.29	2.67	2.21	1.85	1.58	1.36	1.18
			WS	9.83	7.04	5.27	4.07	3.23	2.62	2.16	1.81	1.54	1.33	1.15
	50mm	3	D + L	11.10	8.14	6.20	4.86	3.90	3.19	2.66	2.24	1.92	1.65	1.44
			WS	11.01	8.04	6.11	4.79	3.84	3.14	2.61	2.20	1.88	1.62	1.39

Section Properties (Per Meter Width) Base Metal: Steel

Thickness (T) mm	Cover Width mm	Nominal Weight Kg/m²	Area cm²	Full Sect. (E.) (kN/cm4)	Elastic Modulus (E) (kN/cm²)	Top in compression				Bottom in compression			
						Lxet (cm4)	Sx-Top (cm³)	Sx-bot (cm³)	Ma bx (kNm)	Ixeb (cm4)	Sx-Top (cm³)	Sx-Bot (cm³)	Ma bx (kNm)
0.50	1000	10.070	6.05	120.00	20300	80.00	12.10	32.00	1.67	58.00	14.50	11.60	1.60
0.40			4.30										

Allowable Uniform Loads (kN/m²) Base Metal: Steel

Nominal Thickness (T) mm	Insulation Thickness	No. of Spans	Load Case	Span (m)										
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
0.5 + 0.4	100mm	1	*D + L	8.22	6.58	5.48	4.36	3.34	2.64	2.14	1.77	1.48	1.26	1.09
			**WS	8.22	6.58	4.18	4.18	3.20	2.53	2.05	1.69	1.42	1.21	1.05
	75mm	2	D + L	5.85	4.43	3.47	2.79	2.29	1.91	1.62	1.38	1.19	1.04	0.91
			WS	5.90	4.48	3.53	2.85	2.34	1.96	1.66	1.42	1.23	1.07	0.94
	50mm	3	D + L	6.30	4.83	3.84	3.13	2.60	2.19	1.87	1.61	1.40	1.23	1.09
			WS	6.34	4.88	3.89	3.18	2.65	2.24	1.91	1.65	1.44	1.26	1.12

Notes:

- *D+L = Dead + Live Load
- **WS + Wind Suction
- Design of sheeting is based in AISI – 2007
- (ASD –Allowable Stress Design)
- Deflection Limits – Span / 180
- Material Specifications – GI (ASTM A653) Aluminium (A3105-H16)
- Nominal Thickness refers to Base Metal Thickness
- Assume bond with insulation ensures that lateral sliding of sheet does not occur, and insulation doesn't have significant compression

Thermal Conductivity Values (Rockwool)

Figure for (Rockwool) Insulation	Mean Temperature C°	k-value W/mk 100 kg/m³	k-value W/mK 120 kg/m³
	50	0.037	0.037
	100	0.044	0.044
	150	0.052	0.052
	200	0.061	0.06
	250	0.072	0.07
	300	0.084	0.082
	350	0.098	0.096
	400	0.118	0.11

Acoustic Values (Rockwool Insulation Core – Semi Rigid Slabs)

Figure for (Rockwool) Insulation	Hz	100 kg/m³	120 kg/m³
	125	0.23	0.23
	250	0.66	0.66
	500	1.05	1.05
	1000	1.07	1.06
	2000	1.05	1.05
	4000	0.97	0.97

U Value Table

U Value & R Value of PIR and PUR at different thickness

Thermal Conductivity 'k' of foam	0.023 W/mK	0.023 W/mK			
Nominal Panel Thickness	Average Panel Thickness	U-Value		R-Value	
		W/m²K	Bty/h.ft²	m²K/W	h.ft²/ Btu
50	61.61	0.41	0.066	2.27	15.211
75	86.61	0.27	0.047	3.6	21.384
100	111.61	0.22	0.036	4.5	27.556