



Tridek SIPs Roof Loading Capacity and Span Tables

DESIGN CRITERIA (FOR ROOFING + CEILING + SOLAR PANELS)

1. DESIGN LOADING AS1170.0, AS1170.1, AS 1170.2, AS 4055
2. DEAD LOAD (SELF WT) "G" 0.2KPA
3. APPLIED DEAD LOAD (CEILING + SOLAR PANELS)
"Q" 0.25KPA
- 4..LIVE LOAD "Q" 0.25KPA
5. WIND LOAD "Qz" As per AS4055 wind loads for housing
6. N2 OR GREATER CLASSIFICATION CONTROLS THE DESIGN
7. DEFLECTION LIMITS SPAN/240

WIND N1/N2	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5849	6604	7038	7733	8656	9896	11061
PRO	5750	8261	8800	9666	10820	12373	13835
SMART	5612	6369	6802	7494	8413	9645	10801
ICON	5319	5964	6195	6803	7614	8707	9737

WIND N1/N2	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	9113	10290	10965	12048	13487	15418	17234
PRO	8959	10102	10761	11821	13232	15131	16919
SMART	8744	9922	10597	11677	13109	15027	16828
ICON	8287	9293	9652	10599	11863	13566	15171

WIND N3	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5507	5220	5562	6112	6842	7821	8742
PRO	5415	6105	6504	7144	7997	9145	10225
SMART	5284	5997	6404	7057	7922	9082	10170
ICON	5008	5616	5833	6405	7170	8199	9169

WIND N3	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	7348	8297	8842	9715	10875	12432	13896
PRO	7224	8146	8677	9531	10670	12201	13642
SMART	7050	8001	8545	9415	10570	12117	13569
ICON	6682	7493	7783	8546	9566	10939	12233



WIND N4	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	4525	4366	4653	5112	5722	6542	7312
PRO	4448	5016	5343	5869	6570	7513	8401
SMART	4342	4927	5262	5798	6509	7461	8355
ICON	4114	4614	4792	5263	5890	6736	7533

WIND N4	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	6037	6817	7264	7981	8935	10214	11417
PRO	5935	6692	7129	7831	8766	10024	11208
SMART	5793	6573	7020	7735	8684	9955	11148
ICON	5490	6156	6394	7021	7859	8987	10050

WIND N5	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	3839	3738	3983	4377	4899	5601	6261
PRO	3775	4256	4534	4980	5575	6375	7128
SMART	3684	4180	4465	4919	5523	6331	7090
ICON	3491	3915	4066	4465	4998	5716	6392

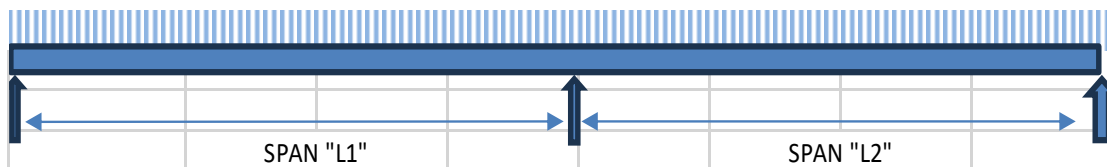
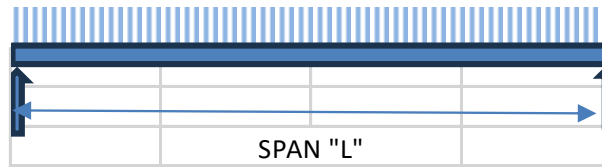
WIND N5	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5123	5784	6164	6772	7581	8667	9687
PRO	5036	5679	6049	6645	7438	8506	9510
SMART	4915	5578	5957	6564	7369	8447	9459
ICON	4658	5223	5425	5958	6668	7626	8528



WIND N6	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	3413	3337	3556	3907	4374	5000	5589
PRO	3355	3783	4030	4427	4955	5667	6336
SMART	3275	3716	3969	4373	4909	5628	6302
ICON	3103	3480	3615	3969	4443	5081	5682

WIND N6	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	4553	5141	5479	6020	6739	7704	8611
PRO	4477	5048	5377	5906	6612	7560	8454
SMART	4369	4958	5295	5834	6550	7508	8408
ICON	4140	4643	4823	5296	5928	6779	7580

UNIFORM DISTRIBUTED LOADING kPa



Application of Tables different spans L1 and L2: L2 = L1 +/- 10%



**DESIGN CRITERIA
(FOR ROOFING
ONLY)**

1. DESIGN LOADING AS1170.0, AS1170.1, AS 1170.2, AS 4055
2. DEAD LOAD (SELF WT) "G" 0.2KPA
3. LIVE LOAD "Q" 0.25KPA
4. WIND LOAD "Qz" As per AS4055 wind loads for housing.
5. N2 OR GREATER CLASSIFICATION CONTROLS THE DESIGN
6. DEFLECTION LIMITS SPAN/150

WIND N1/N2	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	7125	6838	7287	8006	8963	10246	11452
PRO	7004	7898	8413	9241	10345	11830	13227
SMART	6836	7757	8285	9129	10248	11748	13156
ICON	6478	7265	7546	8286	9275	10606	11861

WIND N1/N2	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	9506	10733	11438	12567	14068	16083	17976
PRO	9345	10538	11225	12330	13802	15783	17648
SMART	9121	10350	11054	12180	13673	15674	17553
ICON	8644	9693	10068	11055	12374	14151	15825

WIND N3	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5849	5685	6058	6656	7451	8518	9521
PRO	5750	6484	6907	7587	8493	9712	10859
SMART	5612	6369	6802	7494	8413	9645	10801
ICON	5319	5964	6195	6803	7614	8707	9737

WIND N3	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	7804	8812	9390	10317	11549	13203	14758
PRO	7672	8651	9215	10122	11331	12957	14488
SMART	7488	8497	9075	9999	11225	12868	14410
ICON	7096	7957	8265	9076	10159	11617	12991



WIND N4	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	4998	4887	5208	5722	6405	7323	8185
PRO	4914	5540	5902	6483	7257	8298	9279
SMART	4795	5442	5812	6404	7189	8241	9229
ICON	4545	5096	5293	5813	6506	7440	8320

WIND N4	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	6668	7529	8024	8816	9869	11282	12610
PRO	6556	7392	7874	8649	9682	11072	12380
SMART	6398	7260	7754	8544	9592	10996	12313
ICON	6063	6799	7062	7755	8680	9927	11101

WIND N5	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	4330	4249	4527	4974	5569	6366	7116
PRO	4257	4800	5113	5616	6287	7189	8038
SMART	4154	4714	5035	5548	6228	7139	7995
ICON	3937	4415	4586	5036	5636	6445	7208

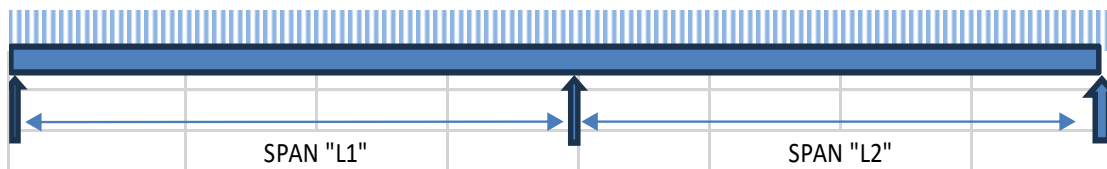
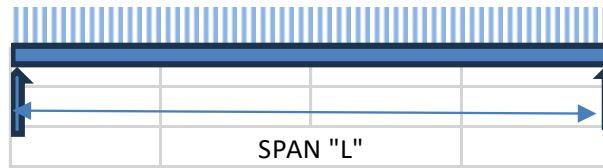
WIND N5	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5777	6523	6951	7637	8549	9773	10924
PRO	5679	6404	6821	7493	8388	9591	10725
SMART	5543	6290	6717	7402	8309	9525	10667
ICON	5253	5890	6118	6718	7520	8600	9617



WIND N6	MAX SINGLE SPAN						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	4330	4249	4527	4974	5569	6366	7116
PRO	4257	4800	5113	5616	6287	7189	8038
SMART	4154	4714	5035	5548	6228	7139	7995
ICON	3937	4415	4586	5036	5636	6445	7208

WIND N6	MAX CONTINUOUS SPANS						
	PANEL THICKNESS						
PANEL TYPE	100	125	140	165	200	250	300
CLASSIC	5777	6523	6951	7637	8549	9773	10924
PRO	5679	6404	6821	7493	8388	9591	10725
SMART	5543	6290	6717	7402	8309	9525	10667
ICON	5253	5890	6118	6718	7520	8600	9617

UNIFORM DISTRIBUTED LOADING kPa



Application of Tables different spans L1 and L2: L2 = L1 +/- 10%

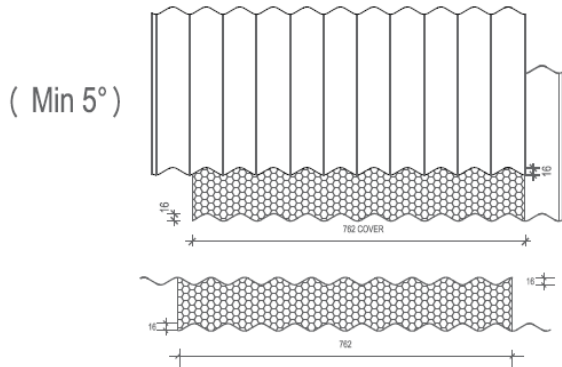


SECTION PROPERTIES FOR DESIGN

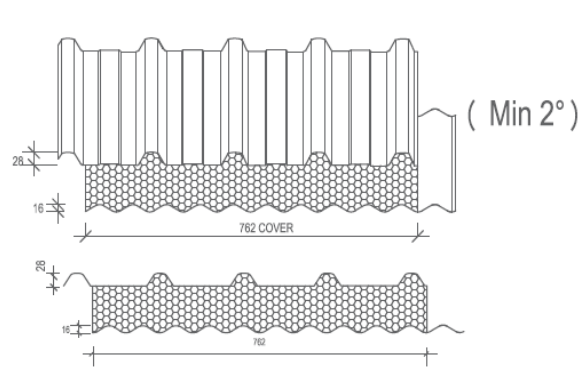
Panel Thickness			115	145	165	215	265	315	
Modulus of elasticity			"E"	200,000	200,000	200,000	200,000	200,000	
CLASSIC	Top	Bottom	Ixx/m	2,668,217	3,855,538	4,674,752	6,218,145	8,752,771	13,130,317
	CORODEK	CORODEK	Zxx/m	44147	52859	58115	66905	79254	96946
			AREA/m	1071	1071	1071	1071	1071	1071
			øMb/m	21.85	26.17	28.77	33.12	39.23	47.99
			Top	Bottom	Ixx/m	2,534,150	3,646,428	4,416,060	5,869,219
PRO	TRIMCLAD	CORODEK	Zxx/m	43891.583	52116.372	57124.92	65551.6665	77458.1894	94597.653
			AREA/m	1048	1048	1048	1048	1048	1048
			øMb/m	21.73	25.80	28.28	32.45	38.34	46.83
			SMART	METROSPAN	METROSPAN	Ixx/m	2,562,588	3,759,115	4,588,404
Zxx/m	44023.162	53162.4202				58667.75	67866.5763	80776.8909	99258.165
AREA/m	1114	1114				1114	1114	1114	1114
øMb/m	21.79	26.32				29.04	33.59	39.98	49.13
ICON	METLOK	METROSPAN	Ixx/m	1,524,297	2,419,864	3,213,316	4,521,433	6,789,433	9,527,155
			Zxx/m	30,788	38,185	43,719	51,568	62,902	74,319
			AREA/m	936	936	936	936	936	936
			øMb/m	15.24	18.90	21.64	25.53	31.14	36.79

SECTION PROPERTIES FOR DESIGN

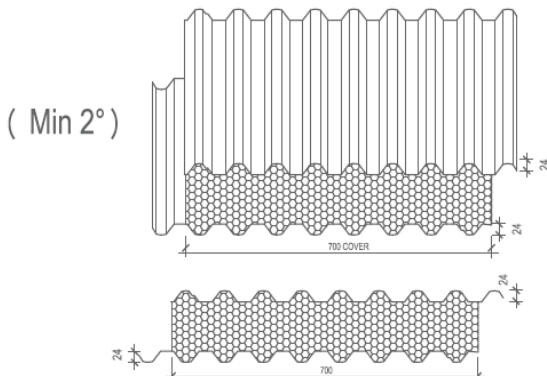
Classic Series



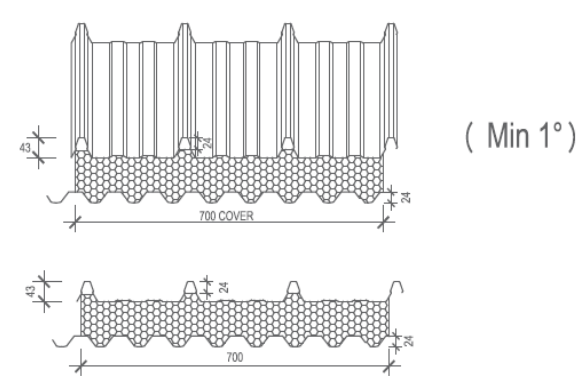
Pro Series



Smart Series



Icon Series





	Material	Thickness	E (short term)	f_c
Skins	Steel	0.42mm	200000 mPa	550
Core	Polystyrene	Variable	2.5mPa	0.24

ADDITIONAL NOTES:

ADDITION OF SOLAR PANELS

1. The roofing tables are based on building class 1, 2, 3 and 4 and AS 4055 wind loads for domestic buildings.
2. Buildings of class 5 and above are to be designed to specific loading requirements with reference to wind forces based on AS 1170.2

Where solar panels are to be installed the max spans are to be determined from the wind N3 or above tables to ensure the deflections are kept within the Span/240 limit. Excessive sag may occur if the maximum spans are selected from the N1 & N2 Tables.

For domestic residences the internal pressure co-efficient is equal to 0.0

Regional wind speed and pressures are as per the following table.

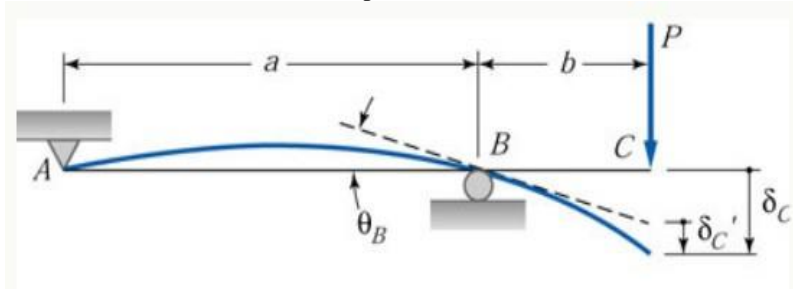
Wind Classification	Regional Wind Velocity	Design Pressure
N1	34	0.69
N2	40	0.96
N3	50	1.50
N4	61	2.23
N5	74	3.29
N6	86	4.44
C1	50	1.50
C2	61	2.23
C3	74	3.29
C4	86	4.44



CANTELEVERS:

The above values are assessed under the strength capacity of the panels only, assuming deflection criteria is not critical.

Deflections of a cantilevered beam is complicated as illustrated below:



The load resisting width of the panel would need to be checked case by case depending on the layout and location of the load.

Where the deflection criteria is applicable, it should be checked by a competent structural engineer.

For a roof cantilevered eave, canopy, the wind pressure could be much higher than the overall roof area, which could be 3 times higher, depending on the high, chape, location of the cantilever, all cantilevered should be checked by a competent structural engineer.

Maximum Roof Cantilever (strength only) along the Width

Tridek SIPs: generally, half a panel width (Classic Series & Pro Series 381mm, Smart Series & Icon Series 350mm).

Maximum Roof Cantilever (strength only) along the Pitch

Tridek SIPs: 25% of the back span under uniformly distributed loads only.

Point loads and deflections of the cantilever must be converted to equivalent UDL effects and checked by a competent structural engineer.

Penetrations

For full width opening in a single panel a reduction to 80% of the max span is appropriate

For opening widths between 2 panels a reduction to 60% of the span is appropriate.

Flashing details.

Matching the panel thickness folded from 1.9mm Galv sheet up to one panel wide opening and 2.4mm Galv sheet for upto 2 panels wide opening (Welded frame).

Top flange overlap one rib

The bottom flange min. width 75mm