LOAD TABLES AND MAXIMUM ALLOWED SPANS
ECOPANEL FL

1. INTRODUCTION

In the present technical report are shown the load tables for the self-supporting double skin metal face thermo-insulating panels manufactured by ELASTRON S.A.:

ECOPANEL FL - cold rooms / storage panels of nominal thickness 80-100-120-150-180 mm

2. LOAD TABLES AND MAXIMUM ALLOWED SPANS

The following tables have been calculated according the instruction and calculation formulas of the European Standard EN14509:2013, Annex E, Tables E.10.1 and E.10.2.

The following must be observed when using the tables:

• The characteristics loads are calculated in daN/m²

• The span tables refer to buildings with normal interior climate and they are not valid for buildings of particular conditions of very high and/or very low values of temperature and humidity.

• In the case of roof panels the values of the tables are valid only for the closed construcrions as those are defined in the Eurocode 1.

• For colour groups I (very light) II (light) III (dark) consult the Table 1. that follows.

• For application the suitable maximum allowed span is the smallest than the ones mentioned in corresponding two tables snow load / wind suction load (for the tables of roof panels) and wind - pressure / suction load (for the tables of wall cladding panels).

• The values in the tables have been calculated taking onto account the most unfavourable conditions of load. The maximum deflection arrow is L / 150.

• For static support systems with more than three spans, valid are the values reported in the tables with the three spans.

• In the loads of the panels in case of horizontal position (roof panels or false ceiling) should be added the weight of the panel reported in Table 2.

RAL	COLOURING	GROUP
9010	pure white	I
9001	cream white	
1013	pearl white	
1015	light ivory	
9002	grey-white	
1018	zinc yellow	
1016	sulphur yellow	
7035	light grey	
1001	beige	II
1002	sand yellow	
7038	agate grey	
7032	cream grey	
9006	white aluminium	
1007	chromium yellow	
1024	ochre yellow	
2003	pastel orange	
6021	pale green	
1020	olive yellow	
7001	silver grey	
2000	yellow orange	
6018	yellow green	
7002	olive grey	
6011	reseda green	
5012	light blue	
2004	pure orange	
8003	orange brown	
2001	red orange	

RAL	COLOURING	GROUP
2002	blood orange	III
6010	grass green	
8025	pale brown	
8004	copper brown	
5007	brilliant blue	
6001	emerald green	
9000	fire red	
6002	leave red	
3002	carmine red	
6003	olive green	
3009	oxide red	
5009	sky blue	
7015	slate grey	
8007	deer brown	
7013	brown grey	
5010	gentian blue	
8011	walnut brown	
6005	moor green	
7016	anthracite grey	
3004	scarlet red	
5002	ultramarine blue	
8014	sepia brown	
8016	mahogany brown	
6008	brown green	
5013	cobalt blue	

Table 1. Colour group

Type	Thickness (mm)	Weight (kg/m²)	Load (daN/m²)
ECOPANEL-FL	80	8.99	10.2
ECOPANEL-FL	100	10.89	11.0
ECOPANEL-FL	120	11.65	11.8
ECOPANEL-FL	150	12.79	12.9
ECOPANEL-FL	180	13.93	14.1

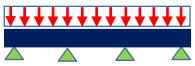
Table 2. Panel's weight

Following the maximum allowed spans

ECOPANEL FL 80

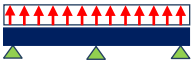
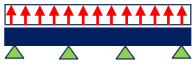
WIND PRESSURE LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	5,26	4,52	4,04	3,67	3,39	3,16	2,96	2,79	2,64	2,51	2,40	2,19	2,03
TWO SPANS 	I	6,98	5,83	5,07	4,52	4,09	3,56	3,14	2,80	2,54	2,33	2,15	1,87	1,66
	II	6,74	5,64	4,92	4,38	3,97	3,56	3,14	2,80	2,54	2,33	2,15	1,87	1,66
	III	6,39	5,36	4,68	4,17	3,78	3,46	3,14	2,80	2,54	2,33	2,15	1,87	1,66
THREE SPANS 	I	6,45	5,47	4,82	4,33	3,96	3,65	3,29	2,92	2,64	2,40	2,21	1,91	1,68
	II	6,19	5,27	4,65	4,19	3,83	3,54	3,29	2,92	2,64	2,40	2,21	1,91	1,68
	III	5,80	4,97	4,40	3,98	3,65	3,37	3,14	2,92	2,64	2,40	2,21	1,91	1,68

WIND SUCTION LOAD

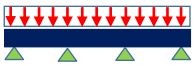
STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	5,26	4,52	4,04	3,67	3,39	3,16	2,96	2,79	2,64	2,51	2,40	2,19	2,03
TWO SPANS 	I	6,92	5,79	5,07	4,52	4,09	3,56	3,14	2,80	2,54	2,33	2,15	1,87	1,66
	II	6,23	5,27	4,70	4,32	3,97	3,56	3,14	2,80	2,54	2,33	2,15	1,87	1,66
	III	5,16	4,48	4,06	3,77	3,56	3,39	3,14	2,80	2,54	2,33	2,15	1,87	1,66
THREE SPANS 	I	6,45	5,47	4,82	4,33	3,96	3,65	3,29	2,92	2,64	2,40	2,21	1,91	1,68
	II	6,19	5,27	4,65	4,19	3,83	3,54	3,29	2,92	2,64	2,40	2,21	1,91	1,68
	III	5,80	4,97	4,40	3,98	3,65	3,37	3,14	2,92	2,64	2,40	2,21	1,91	1,68

ECOPANEL FL 100

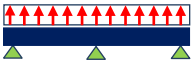
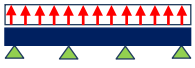
WIND PRESSURE LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	6,21	5,35	4,78	4,36	4,03	3,76	3,53	3,33	3,16	3,01	2,87	2,64	2,44
TWO SPANS 	I	8,26	6,93	6,05	5,41	4,91	4,47	3,93	3,51	3,18	2,91	2,68	2,33	2,07
	II	8,01	6,73	5,88	5,26	4,78	4,38	3,93	3,51	3,18	2,91	2,68	2,33	2,07
	III	7,63	6,43	5,63	5,04	4,58	4,20	3,89	3,51	3,18	2,91	2,68	2,33	2,07
THREE SPANS 	I	7,63	6,48	5,72	5,16	4,73	4,37	4,07	3,66	3,30	3,01	2,76	2,38	2,10
	II	7,34	6,26	5,54	5,01	4,59	4,25	3,96	3,66	3,30	3,01	2,76	2,38	2,10
	III	6,92	5,94	5,28	4,78	4,39	4,07	3,79	3,56	3,30	3,01	2,76	2,38	2,10

WIND SUCTION LOAD

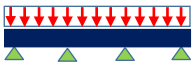
STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	6,21	5,35	4,78	4,36	4,03	3,76	3,53	3,33	3,16	3,01	2,87	2,64	2,44
TWO SPANS 	I	7,78	6,51	5,77	5,26	4,89	4,47	3,93	3,51	3,18	2,91	2,68	2,33	2,07
	II	7,02	5,94	5,29	4,85	4,53	4,28	3,93	3,51	3,18	2,91	2,68	2,33	2,07
	III	5,83	5,05	4,58	4,25	4,01	3,82	3,66	3,51	3,18	2,91	2,68	2,33	2,07
THREE SPANS 	I	7,63	6,48	5,72	5,16	4,73	4,37	4,07	3,66	3,30	3,01	2,76	2,38	2,10
	II	7,34	6,26	5,54	5,01	4,59	4,25	3,96	3,66	3,30	3,01	2,76	2,38	2,10
	III	6,92	5,94	5,28	4,78	4,39	4,07	3,79	3,56	3,30	3,01	2,76	2,38	2,10

ECOPANEL FL 120

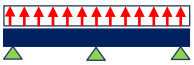
WIND PRESSURE LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	7,10	6,13	5,48	5,00	4,63	4,32	4,07	3,84	3,65	3,48	3,32	3,06	2,84
TWO SPANS 	I	9,47	7,96	6,97	6,25	5,69	5,23	4,73	4,22	3,82	3,49	3,22	2,79	2,47
	II	9,20	7,71	6,80	6,09	5,55	5,10	4,73	4,22	3,82	3,49	3,22	2,79	2,47
	III	8,05	6,81	6,08	5,58	5,21	4,91	4,55	4,22	3,82	3,49	3,22	2,79	2,47
THREE SPANS 	I	8,73	7,44	6,58	5,95	5,45	5,05	4,71	4,40	3,97	3,61	3,32	2,86	2,52
	II	8,43	7,20	6,39	5,78	5,31	4,92	4,59	4,31	3,97	3,61	3,32	2,86	2,52
	III	7,98	6,86	6,10	5,54	5,09	4,73	4,42	4,15	3,92	3,61	3,32	2,86	2,52

WIND SUCTION LOAD

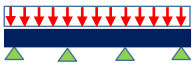
STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	7,10	6,13	5,48	5,00	4,63	4,32	4,07	3,84	3,65	3,48	3,32	3,06	2,84
TWO SPANS 	I	7,76	6,53	5,80	5,31	4,95	4,67	4,44	4,22	3,82	3,49	3,22	2,79	2,47
	II	6,87	5,86	5,26	4,85	4,55	4,31	4,12	3,96	3,82	3,49	3,22	2,79	2,47
	III	5,51	4,87	4,46	4,18	3,97	3,80	3,65	3,54	3,43	3,34	3,22	2,79	2,47
THREE SPANS 	I	8,73	7,33	6,41	5,78	5,32	4,97	4,69	4,40	3,97	3,61	3,32	2,86	2,52
	II	8,01	6,64	5,83	5,28	4,88	4,57	4,32	4,11	3,94	3,61	3,32	2,86	2,52
	III	6,56	5,52	4,90	4,49	4,18	3,94	3,75	3,59	3,45	3,34	3,24	2,86	2,52

ECOPANEL FL 150

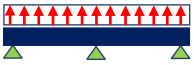
WIND PRESSURE LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	8,37	7,23	6,47	5,92	5,48	5,13	4,83	4,57	4,35	4,15	3,97	3,66	3,40
TWO SPANS 	I	10,56	8,80	7,75	7,05	6,53	6,09	5,68	5,29	4,78	4,36	4,02	3,48	3,08
	II	9,70	8,13	7,20	6,58	6,12	5,76	5,40	5,08	4,78	4,36	4,02	3,48	3,08
	III	8,33	7,09	6,36	5,86	5,49	5,20	4,97	4,69	4,46	4,26	4,02	3,48	3,08
THREE SPANS 	I	10,30	8,79	7,79	7,06	6,49	6,01	5,62	5,29	4,97	4,52	4,15	3,57	3,14
	II	9,97	8,54	7,58	6,81	6,21	5,75	5,37	5,06	4,80	4,52	4,15	3,57	3,14
	III	9,48	8,12	7,04	6,30	5,76	5,34	5,00	4,72	4,48	4,27	4,09	3,57	3,14

WIND SUCTION LOAD

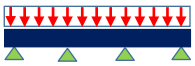
STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	8,37	7,23	6,47	5,92	5,48	5,13	4,83	4,57	4,35	4,15	3,97	3,66	3,40
TWO SPANS 	I	7,74	6,57	5,87	5,40	5,05	4,78	4,56	4,38	4,22	4,09	3,97	3,48	3,08
	II	6,69	5,79	5,25	4,87	4,59	4,37	4,19	4,04	3,91	3,80	3,70	3,48	3,08
	III	5,18	4,68	4,36	4,13	3,95	3,80	3,68	3,57	3,48	3,40	3,32	3,20	3,08
THREE SPANS 	I	8,86	7,33	6,43	5,82	5,37	5,03	4,75	4,52	4,33	4,16	4,02	3,57	3,14
	II	7,78	6,49	5,73	5,22	4,84	4,55	4,31	4,12	3,95	3,81	3,69	3,48	3,14
	III	5,99	5,13	4,63	4,28	4,02	3,82	3,65	3,51	3,40	3,29	3,20	3,05	2,93

ECOPANEL FL 180

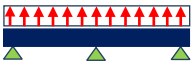
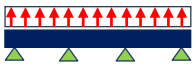
WIND PRESSURE LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	9,56	8,26	7,41	6,78	6,29	5,88	5,55	5,26	5,00	4,78	4,58	4,23	3,94
TWO SPANS 	I	11,74	9,56	8,25	7,36	6,70	6,19	5,78	5,43	5,14	4,89	4,68	4,17	3,69
	II	10,16	8,54	7,58	6,90	6,30	5,83	5,45	5,14	4,88	4,65	4,45	4,12	3,69
	III	8,61	7,38	6,64	6,14	5,70	5,30	4,98	4,71	4,49	4,29	4,12	3,83	3,60
THREE SPANS 	I	11,27	9,40	8,14	7,27	6,63	6,13	5,73	5,40	5,12	4,87	4,66	4,29	3,77
	II	10,76	8,91	7,71	6,90	6,29	5,83	5,45	5,14	4,87	4,65	4,45	4,12	3,77
	III	9,91	8,11	7,04	6,31	5,77	5,35	5,02	4,74	4,50	4,30	4,12	3,82	3,59

WIND SUCTION LOAD

STEEL SHEET THICKNESS t=0.45/0.40mm

STATIC SYSTEM	COLOUR GROUP	UNOFORMLY DISTRIBUTED LOAD (daN/m^2)												
		50	75	100	125	150	175	200	225	250	275	300	350	400
		MAXIMUM ALLOWABLE SPANS (m)												
SINGLE SPAN 	I-II-III	9,56	8,26	7,41	6,78	6,29	5,88	5,55	5,26	5,00	4,78	4,58	4,23	3,94
TWO SPANS 	I	7,73	6,61	5,95	5,49	5,15	4,89	4,68	4,50	4,34	4,21	4,10	3,90	3,69
	II	6,54	5,74	5,25	4,91	4,65	4,44	4,27	4,13	4,00	3,90	3,80	3,64	3,51
	III	4,96	4,58	4,31	4,11	3,95	3,82	3,71	3,62	3,53	3,46	3,39	3,27	3,17
THREE SPANS 	I	8,84	7,34	6,46	5,86	5,42	5,09	4,81	4,59	4,40	4,24	4,09	3,86	3,67
	II	7,56	6,36	5,65	5,17	4,81	4,54	4,32	4,13	3,98	3,84	3,73	3,53	3,37
	III	5,48	4,81	4,40	4,11	3,90	3,72	3,58	3,46	3,36	3,27	3,19	3,05	2,94