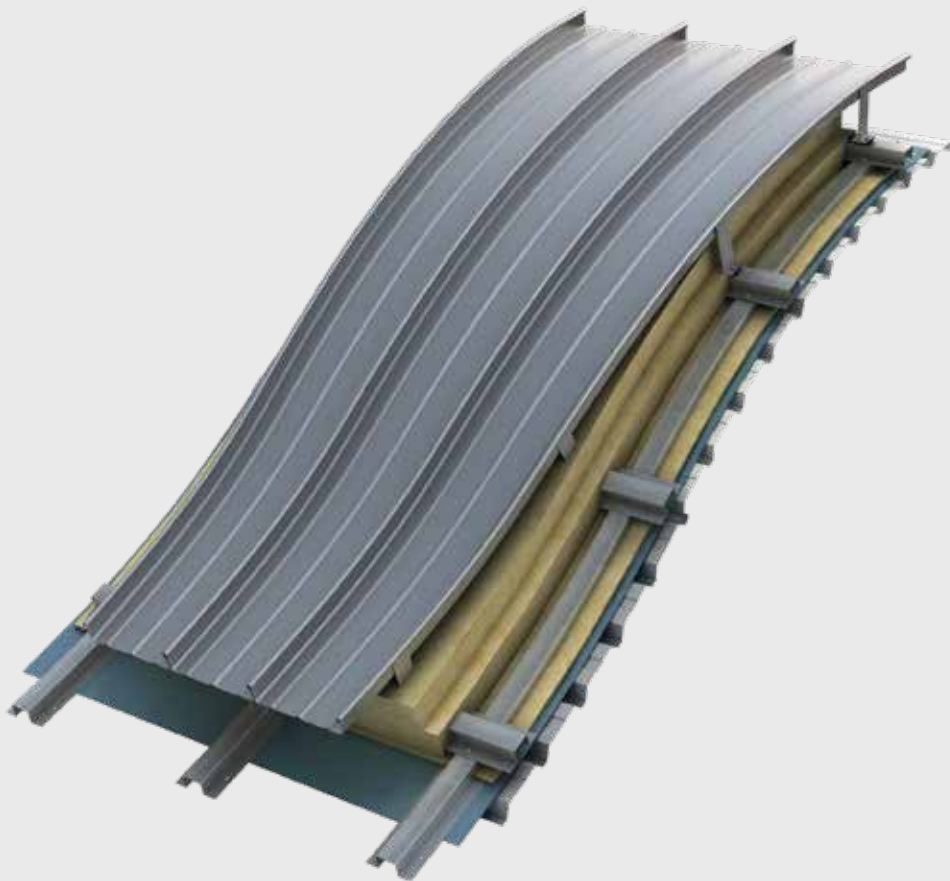


Insulated Panels
Standing Seam Systems

Protected by



KingZip Linea Standing Seam System Product Data Sheet

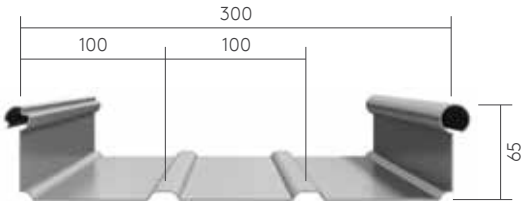


Technical Data

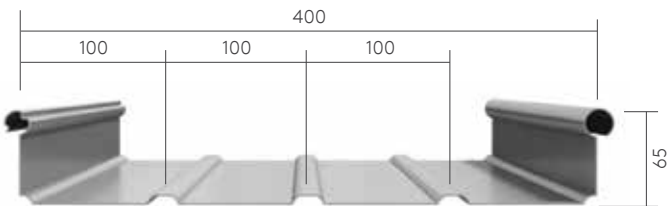
KingZip Linea Standing Seam System

KingZip Linea enables you to realise building envelope designs with total flexibility, creating technically perfect angular, convex, concave and tapered architectural forms.

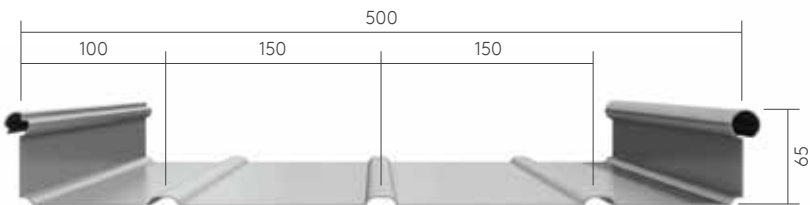
KingZip Linea 300



KingZip Linea 400



KingZip Linea 500



All dimensions are in mm.



Materials: Steel and Aluminium

Product Dimensions

Nominal thickness (mm):	0.80, 0.90, 1.00, 1.20 (aluminium) / 0.70, 0.90 (steel)
Profile depth (mm):	65
Sheet length (m):	1.5 to 15 (factory rolled – due to transport limitation) 1.5 to 150 (site rolled)
Sheet width (mm):	300, 400 & 500

KingZip Linea Typical Weights

Cover Width	Steel Thickness (mm)				Aluminium Thickness (mm)							
	0.7		0.9		0.8		0.9		1.0		1.2	
	kg/m ²	kg/lm	kg/m ²	kg/lm	kg/m ²	kg/lm	kg/m ²	kg/lm	kg/m ²	kg/lm	kg/m ²	kg/lm
300	8.71	2.61	11.20	3.36	3.47	1.04	3.90	1.17	4.34	1.30	5.20	1.56
400	10.54	4.21	13.55	5.42	3.15	1.26	3.54	1.42	3.94	1.57	4.72	1.89
500	12.37	6.18	15.90	7.95	2.96	1.48	3.33	1.66	3.70	1.85	4.43	2.22

Tolerances

Cover width: +/- 2 mm

Edge squareness: 1 % of sheet cover width

Up to 10 m long: +10 mm / -5 mm

Over 10 m long: +10 mm +(1 mm per metre length over 10 m) / -5 mm

Application

KingZip Linea is designed for use in all roofing applications where the installed roof pitch is 1.5° or greater.

KingZip Linea can also be used as a vertically laid wall cladding solution.

Finishes

The external weather sheets are available in a variety of finishes including; plain stucco embossed finish, stainless steel, Kingspan PVDF, Kingspan Spectrum, Kingspan Polyester, Kingspan Anodised and Kingspan ARS.

The internal liner sheet will generally be a smooth or stucco embossed finish with a polyester coating.

More information on finishes and coatings is available on our website.

Technical Data

KingZip Linea Standing Seam System

Materials: Steel and Aluminium

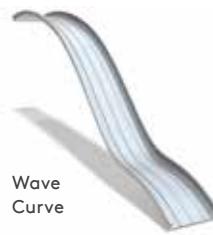
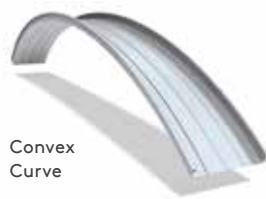
Curving KingZip Linea

KingZip profiles are available in various curved options to suit the required application. The profile can be concave, convex or wave shaped incorporating both curves in one sheet. The sheets will self curve to a certain degree, otherwise they can be mechanically smooth or crimp curved as detailed below. When straight sheets are sprung down to match the curve, the halter brackets need to be set out by approximately an extra 5 mm of the cover width of the sheet, dependant on the radius. This relieves the stress from the pan by allowing the upstands to open out.

Convex Curve	Gauge (mm)	Recommended Support Spacing (m)	Radius (m)
Site sprung curved sheets	0.9 aluminium	1.5	40.0 / 45.0
	1.2 aluminium	1.6	55.0 / 60.0
	0.7 steel	1.6	55.0 / 60.0
Smooth rolled curved sheets	0.9 aluminium	1.5	5.0
	1.2 aluminium	2.0	5.0
	0.7 steel	1.6	12.0
Factory crimp curved sheets	0.9 aluminium	1.5	750 mm
	1.2 aluminium	1.6	750 mm
	0.7 steel	1.6	750 mm

Concave Curve	Gauge (mm)	Recommended Support Spacing (m)	Radius (m)
Site sprung curved sheets	0.9 aluminium	1.6	50.0
	1.2 aluminium	1.6	60.0
	0.7 steel	1.8	90.0
Smooth rolled curved sheets	0.9 aluminium	1.5	8.0
	1.2 aluminium	1.6	8.0
	0.7 steel	1.6	10.0

For other metals and radii outside the above parameters consult our Technical Department.



KingZip Sheet Length and Corresponding Radius to Meet Transportation Criteria

Radius (m)	Maximum Sheet Length for Transport (m)	Radius (m)	Maximum Sheet Length for Transport (m)	Radius (m)	Maximum Sheet Length for Transport (m)	Radius (m)	Maximum Sheet Length for Transport (m)
6.0	10.0	16.0	16.0	26.0	20.5	36.0	24.0
6.5	10.5	16.5	16.5	26.5	20.5	36.5	24.0
7.0	10.7	17.0	16.7	27.0	20.5	37.0	24.5
7.5	11.0	17.5	17.0	27.5	21.0	37.5	24.5
8.0	11.5	18.0	17.2	28.0	21.0	38.0	24.5
8.5	11.7	18.5	17.5	28.5	21.5	39.0	25.0
9.0	12.0	19.0	17.5	29.0	21.5	39.5	25.0
9.5	12.5	19.5	17.7	29.5	21.5	40.0	25.0
10.0	12.7	20.0	18.0	30.0	22.0	40.5	25.5
10.5	13.0	20.5	18.2	30.5	22.0	41.0	25.5
11.0	13.5	21.0	18.5	31.0	22.0	41.5	25.5
11.5	13.7	21.5	18.7	31.5	22.5	42.0	26.0
12.0	14.0	22.0	19.0	32.0	22.0	42.5	26.0
12.5	14.2	22.5	19.2	32.5	22.5	43.0	26.0
13.0	14.5	23.0	19.2	33.0	23.0	43.5	26.5
13.5	14.7	23.5	19.5	33.5	23.0	44.0	26.5
14.0	15.2	24.0	19.7	34.0	23.5	44.5	26.5
14.5	15.5	24.5	20.0	34.5	23.5	45.0	26.5
15.0	15.7	25.0	20.0	35.0	23.5	45.5 to 51.5	27.0
15.5	16.0	25.5	20.2	35.5	24.0		

Above table is indicative only. Contact your local Kingspan Customer Service for advice on transportation conditions and limitations

Materials: Steel and Aluminium

Tapering

KingZip tapered sheets provide the flexibility to design more complex geometries e.g. curved on plan or dome structures.

Tapered sheets have the same curve radii as Kingzip Linea sheets and can be fully integrated to Kingzip Linea applications.

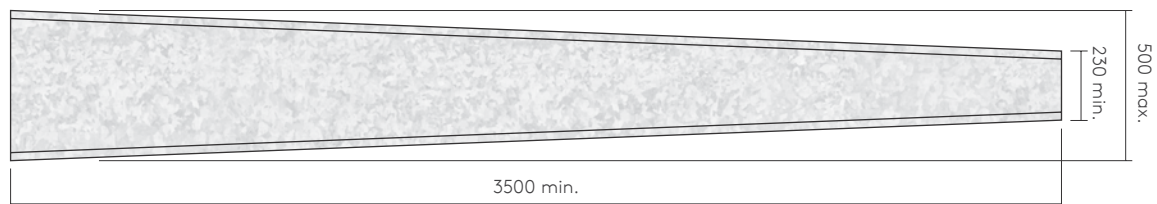
Minimum length: 3.5 m

Maximum sheet length: 15 m (limited by transport vehicle dimensions)

On-site manufacture up to 150 m

Minimum taper width: 230 mm

Maximum taper width: 500 mm



The standard KingZip sheet can be fabricated to achieve a taper to form a radial roof on plan. The sheet is rolled as normal to the required length and the pan is then marked out with two inclined lines.

The surplus triangular material is cut out and the remaining upstand and pan pieces of the sheet are tacked together and eventually fully welded to create the tapered KingZip ready for installation.

When matching painted surfaces, aluminium tapered sheets are powder-coated after fabrication and the customer must be made aware that a shade variation may occur as the post-applied colour may not match the pre-coated coil used to roll the KingZip.



Technical Data

KingZip Linea Standing Seam System

Materials: Steel and Aluminium

Applicable Roof Pitch

Due to the true standing seam concept of the KingZip system the following pitches may be maintained:

Continuous sheet ridge to eaves	1.5°
Welded end lap joint	1.5°
Welded roof penetrations	1.5°
Laid in rooflights ridge to eaves	1.5°
Rooflights lapped onto KingZip	>4.0°
End lap joints with sealants and fixings	3.0°

Note: Roof pitches must be achieved after consideration of loadings and deflection. Ensure gutter straps and edge flashing details at the eaves do not reduce the above roof pitches to avoid ponding of water at the sheet edge.

End Laps

Where sheets are required to be end lapped then the sheets will need to be notched as shown below. For a pitch greater than 3° the overlap joint must be fixed with end lap rivets (6604/6/3W) and sealed with end lap sealant (TAPE/BM/06).

For a more secure overlap and any pitch below 3°, site welding will ensure that there are no penetrations of the external weathering skin. Please refer to page 202 for detail drawing.



Drumming

The impact of rain or hail on a roof will always produce a noise. This sound energy (vibration) is then transmitted through the roof construction to the inside of the building.

BS5427:2016+A1:2017 states that this noise can be reduced by the introduction of a flexible insulation layer directly under the outer sheets. The insulated KingZip system deadens such sounds with absorption by virtue of the soft insulation being compressed to the underside of the roof sheet.

Lightning Protection

A close liaison should be ensured between the architect, the builder, the lightning protection system engineer and the appropriate authorities throughout the design stages to meet or exceed the requirements of BS EN/IEC 62305.

Modern buildings use metal extensively in their structure and there is considerable benefit in utilising such metal parts to maximise the number of parallel conducting paths. The KingZip roof systems combined with the steel frame of the building can be used to provide a principal lightning protection system.

Standards

KingZip Linea is produced to the highest quality manufacturing standard including BS EN ISO 9001: 2008. The product is designed to meet detailed project expectations and has therefore been manufactured to precise standards and tolerances.

Materials: Steel and Aluminium

Load Span Tables

KingZip 300

Span (m)		1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
0.9 mm Aluminium	Upward (kg/m ³)	6.56	5.51	4.98	4.05	3.29	2.81	2.22	1.99	1.63	1.46	1.31
	Downward (kg/m ³)	6.89	5.63	4.87	4.38	3.77	3.13	2.55	1.86	1.59	1.26	1.11
1.0 mm Aluminium	Upward (kg/m ³)	8.48	7.04	6.1	5.28	4.21	3.51	2.81	2.49	2.03	1.89	1.75
	Downward (kg/m ³)	6.79	5.59	4.9	4.3	3.6	3	2.89	2.22	1.75	1.35	1.22
1.2 mm Aluminium	Upward (kg/m ³)	10.5	8.51	7.21	6.31	5.49	4.56	3.98	3.3	2.79	2.38	2.19
	Downward (kg/m ³)	6.81	5.59	4.95	4.3	3.71	3.12	2.99	2.65	2.02	1.65	1.45

KingZip 400

Span (m)		1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
0.9 mm Aluminium	Upward (kg/m ³)	5.22	4.3	3.52	3.39	2.69	2.16	1.88	1.71	1.38	1.22	1.15
	Downward (kg/m ³)	5.31	4.35	3.78	3.21	2.89	2.58	2.22	1.65	1.29	1.01	0.89
1.0 mm Aluminium	Upward (kg/m ³)	6.89	5.78	4.83	5.78	5.02	4.33	3.89	3.21	2.77	2.48	2.31
	Downward (kg/m ³)	5.31	4.35	3.78	3.22	2.87	2.61	2.39	1.79	1.32	1.21	1.01
1.2 mm Aluminium	Upward (kg/m ³)	8.02	6.71	5.77	5.09	4.39	3.89	3.19	2.75	2.42	1.99	1.82
	Downward (kg/m ³)	5.31	4.35	3.78	3.22	2.87	2.62	2.39	1.91	1.76	1.45	1.28

KingZip 500

Span (m)		1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
0.9 mm Aluminium	Upward (kg/m ³)	3.99	3.21	2.75	2.45	2.11	1.76	1.55	1.21	1.18	1.04	0.85
	Downward (kg/m ³)	4.12	3.42	2.99	2.52	2.29	2.01	1.71	1.32	1.01	0.85	0.65
1.0 mm Aluminium	Upward (kg/m ³)	5.01	4.11	3.65	3.09	2.75	2.38	1.99	1.62	1.51	1.31	1.19
	Downward (kg/m ³)	4.12	3.43	2.98	2.53	2.31	2.01	1.95	1.45	1.32	1.02	0.85
1.2 mm Aluminium	Upward (kg/m ³)	5.99	5.01	4.21	3.66	3.39	2.98	2.65	2.19	1.81	1.62	1.49
	Downward (kg/m ³)	4.14	3.44	2.99	2.55	2.32	2.15	1.75	1.66	1.45	1.2	0.99

All loads are characteristic working loads in kN/m² based on 4 or more spans.

Downward figures based on a deflection limit of span / 200.

Wind uplift figures based on a deflection limit of span / 90.

Loadings take account of KingZip sheet pulling out of the halter bracket under wind uplift using the formula:

$$P \text{ (max)} = 1.15 \times C \times L \times W$$

C = cover width of sheet (m)

L = spacing of the brackets along the sheet (m)

W = wind uplift loading (kN/m²)

Safe load on bracket (P) = 2.80 kN (0.7 mm steel / 0.9 mm aluminium sheet)

Safe load on bracket (P) = 3.10 kN (1.2 mm aluminium sheet)

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