

# KINGKLIP 700® NON-CYCLONIC

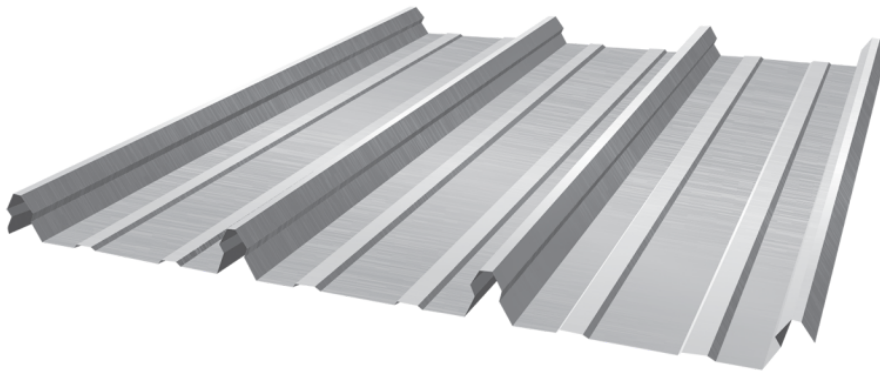


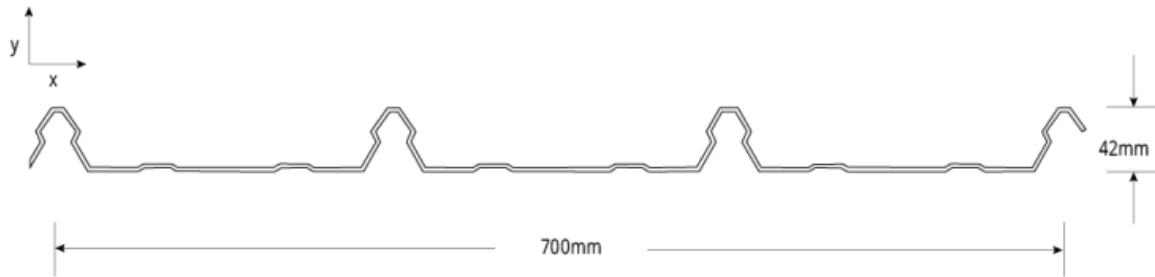
## About KingKlip 700®

---

With KingKlip 700® the possibilities are endless. Providing ultimate flexibility, it is perfect for both curved and flat roofs. As one of the widest concealed-fixed decking products available, KingKlip 700® boasts an impressive width of 700mm and is available in a variety of lengths thanks to Fielders® Mobile Mill. Combining this with Fielders® revolutionary self-locating Mk2 KK700 clips, KingKlip 700® is the ideal commercial roofing solution, offering the best in size, watertightness, and strength. Fielders® SuperKlip is also available on request for installations requiring even greater capacities.

Available in an extensive range of light and heavy-duty gauge COLORBOND® steel colours, KingKlip 700® provides faster installation, larger sheets, extra strength and fewer laps than alternative conventional screw fixed roofs.





## Material Specifications

Property			Notes	
Base Metal Thickness (mm)	0.42	0.48	BMT	
Total Coated Thickness (mm)	0.47*	0.53*	TCT	
Mass / Unit Length	ZINCALUME®	3.26	3.70	kg/m
	COLORBOND®	3.32*	3.76*	
Mass / Unit Area	ZINCALUME®	4.66	5.28	kg/m <sup>2</sup>
	COLORBOND®	4.74*	5.37*	
2nd moment of area about principal axis (10 <sup>3</sup> mm <sup>4</sup> )	I <sub>x</sub>	77	88	
	I <sub>y</sub>	18460	21100	
Section modulus about principal axis (10 <sup>3</sup> mm <sup>3</sup> )	Z <sub>x</sub>	2	3	
	Z <sub>y</sub>	50	57	
Warping Constant (10 <sup>9</sup> mm <sup>6</sup> )	I <sub>w</sub>	4	5	
Torsion Constant (mm <sup>4</sup> )	J	23	35	
Minimum Yield Strength	G550		Base Steel Designation	
Coating Class	Z600 (Heritage Galvanised) AM100 (COLORBOND®) AM125 (ZINCALUME®) AM150 (COLORBOND® Ultra) Z450 (Galvanised)		Minimum Coating g/m <sup>2</sup>	
Coverage (mm)	700			
Tolerance	Sheet Length ±7mm Cover Width ±4mm			
Thermal Expansion	2.9mm average per 5m at 50°C change			

Table KK MS NC 001 - KingKlip 700® Non-Cyclonic

Note:

1. KingKlip 700® is manufactured from materials in accordance to AS 1397 and AS 2728. It is to be installed in accordance with AS 1562 and HB 39.
2. The sectional properties are theoretical values per sheet width. These properties are gross values only.
3. \*is based on Standard COLORBOND® single-sided material. For other painted steel options please contact a Fielders® representative.

## Rainfall Capacity

For further information, please refer to sections "Rainfall Intensity" and "Water Carrying Capacity and Rainwater Run-Off".

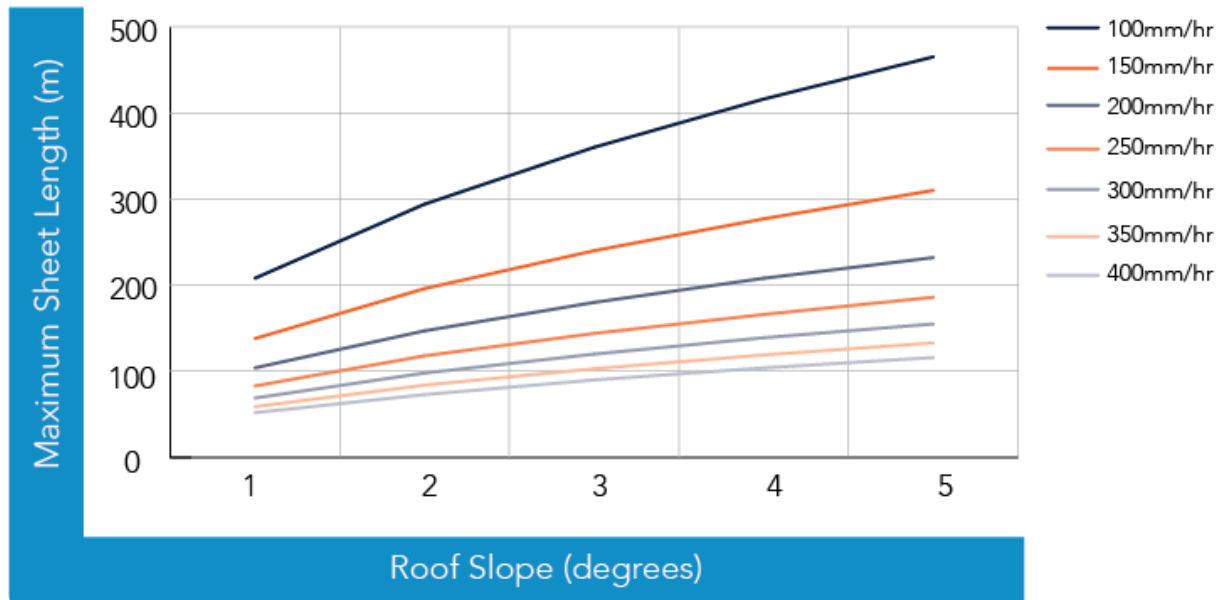


Figure KK RC NC 001

### Maximum Roof Length (m)

Roof Slope (degrees)	Rainfall Capacity (mm/hr)						
	100	150	200	250	300	350	400
1	208	138	104	83	69	59	52
2	294	196	147	118	98	84	73
3	360	240	180	144	120	103	90
4	416	277	208	166	139	119	104
5	465	310	232	186	155	133	116

Table KK RL NC 002 - KingKlip 700® Non-Cyclonic

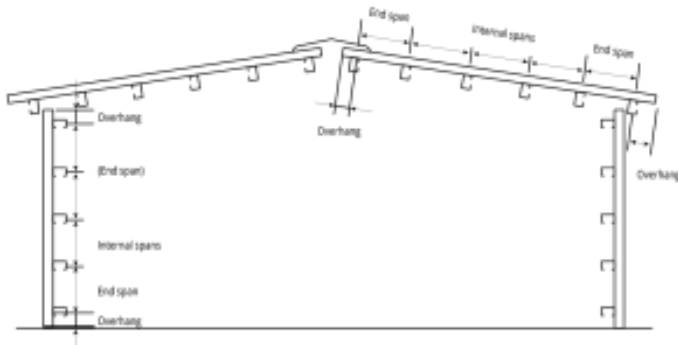
## Non-Cyclonic Load Span Tables

---

The design pressures and allowable spans have been determined from tests carried out in accordance with the following Australian Standards: AS 1562.1:1992, "Design and installation of sheet roof and wall cladding – Metal" and AS 4040:1992, "Methods of testing sheet roof and wall cladding".

All values are applicable for fixing into a minimum steel support thickness of 1.5mm.

**Figure KK NC 002 End Spans, Internal Spans and Overhangs** illustrates the terminology end spans, internal spans, and overhangs and their reference to the supporting substructure. This terminology has been used in the following Maximum Recommended Span and Wind Load Capacity tables.

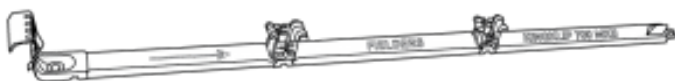


**Figure KK NC 002 End Spans, Internal Spans and Overhangs**

## MK2 Non-Cyclonic Clips

---

Mk2 Non-Cyclonic clips have been developed over a long period time, they provide for a strong roofing system and are easy to install.



## Wind Pressure Capacities with Mk2 KK700 Non-Cyclonic Clips: 0.42mm BMT

Span (mm)	End Span		Internal Span	
	Serv. (kPa)	Strength (kPa)	Serv. (kPa)	Strength (kPa)
900	3.33	5.34	3.51	6.05
1200	2.83	3.98	3.24	4.80
1500	2.37	3.17	2.97	4.01
1800	1.96	2.63	2.70	3.47
2100	1.59	2.25	2.42	3.06
2400	1.27	1.97	2.14	2.75
2700	0.99	1.74	1.86	2.50
3000	0.76	1.57	1.58	2.30
3300	0.58	1.42	1.29	2.13
3600	0.44	1.30	1.01	1.99

Table KK WC NC 001A - KingKlip 700® Non-Cyclonic

**Note:**

1. Values are based on fixing into steel supports with a minimum thickness of 1.5mm.
2. Values in italics are estimates based on trend lines fitted to the test data.
3. Values are based on no insulation under the sheeting.
4. Serv. denotes serviceability

## Wind Pressure Capacities with Mk2 KK700 Non-Cyclonic Clips : 0.48mm BMT

Span (mm)	End Span		Internal Span	
	Serv. (kPa)	Strength (kPa)	Serv. (kPa)	Strength (kPa)
900	4.27	5.24	4.94	6.23
1200	3.70	4.16	4.06	4.94
1500	3.16	3.48	3.49	4.12
1800	2.66	3.01	3.09	3.56
2100	2.19	2.66	2.78	3.14
2400	1.77	2.39	2.54	2.82
2700	1.38	2.18	2.34	2.56
3000	1.03	2.00	2.18	2.35
3300	0.71	1.86	2.05	2.18
3600	0.44	1.73	1.93	2.03

Table KK WC NC 001B - KingKlip 700® Non-Cyclonic

**Note:**

1. Values are based on fixing into steel supports with a minimum thickness of 1.5mm.
2. Values in italics are estimates based on trend lines fitted to the test data.
3. Values are based on no insulation under the sheeting.
4. Serv. denotes serviceability.

## Maximum Recommended Roof Cladding Span with Mk2 KK700 Clips Non-Cyclonic

Wind Region	Base Metal Thickness (mm)	Terrain Category 2		Terrain Category 3	
		End (mm)	Internal (mm)	End (mm)	Internal (mm)
A	0.42	1950	<i>2500</i>	2000	<i>2500</i>
	0.48	2350	<i>3000*</i>	2600	<i>3000*</i>
B	0.42	1200	<i>2500</i>	1750	<i>2500</i>
	0.48	1300	<i>3000*</i>	2100	<i>3000*</i>

Wind Loading Design Parameters

+

Table KK RS NC 002 - KingKlip 700® Non-Cyclonic

**Note:**

1. Maximum roofing spans comply with both strength and serviceability wind pressure requirements.
2. Spans shown in italics are limited by foot traffic requirements.
3. \*Spans in excess of 3000mm may be available subject to enquiry. Long spans require particular attention to installation practice.

## Maximum Recommended Roof Cladding Spans Based on Foot Traffic

Base Metal Thickness (mm)	End (mm)	Internal (mm)
0.42	2000	2500
0.48	2600	<i>3000*</i>

Table KK FT 001 - KingKlip 700® Non-Cyclonic

**Note:**

1. \*Spans in excess of 3000mm may be available subject to enquiry. Long spans require particular attention to installation practice.

## Maximum Recommended Wall Cladding Span with Mk2 KK700 Clips Non-Cyclonic

Wind Region	Base Metal Thickness	Terrain Category 2	Terrain Category 3
-------------	----------------------	--------------------	--------------------

	(mm)	End (mm)	Internal (mm)	End (mm)	Internal (mm)
A	0.42	2400	3000*	2850	3000*
	0.48	2800	3000*	3000*	3000*
B	0.42	1650	3000*	2350	3000*
	0.48	1900	3000*	3000	3000*

**Wind Loading Design Parameters** +

Table KK RS NC 001 - KingKlip 700® Non-Cyclonic

Note:

1. Maximum walling spans comply with both strength and serviceability wind pressure requirements.
2. \*Spans in excess of 3000mm may be available subject to enquiry. Long spans require particular attention to installation practice.

## MK3 SuperKlip

Fielders® have developed a new roofing clip that provides higher wind capacities than Mark II clips. MK3 SuperKlip is easy to install and therefore not only strengthens the roof system, but is also more economical than other roofing clips.



### Wind Pressure Capacities with Mk3 SuperKlip Non-Cyclonic: 0.42 mm BMT

Span (mm)	End Span		Internal Span	
	Serv. (kPa)	Strength (kPa)	Serv. (kPa)	Strength (kPa)
900	5.12	8.20	5.42	8.83
1200	3.97	6.60	4.16	7.41
1500	3.08	5.35	3.38	6.21
1800	2.38	4.34	2.86	5.21
2100	1.85	3.48	2.48	4.37
2400	1.43	2.73	2.19	3.67

2700	1.11	2.08	1.97	3.07
3000	0.86	1.49	1.78	2.58
3300	0.67	0.96	1.63	2.16
3600	0.52	0.47	1.51	1.81

Table KK WC NC 002A - KingKlip 700® Non-Cyclonic

## Note:

1. Values are based on fixing into steel supports with a minimum thickness of 1.5mm.
2. Values in italics are estimates based on trend lines fitted to the test data.
3. Values are based on no insulation under the sheeting.
4. Serv. denotes serviceability.

## Wind Pressure Capacities with Mk3 SuperKlip Non-Cyclonic: 0.48mm BMT

Span (mm)	End Span		Internal Span	
	Serv. (kPa)	Strength (kPa)	Serv. (kPa)	Strength (kPa)
900	6.52	9.48	7.12	10.09
1200	4.97	7.76	5.17	7.93
1500	3.78	6.35	4.03	6.58
1800	2.88	5.19	3.29	5.65
2100	2.20	4.25	2.77	4.96
2400	1.67	3.48	2.39	4.44
2700	1.27	2.85	2.09	4.02
3000	0.97	2.33	1.86	3.68
3300	0.74	1.90	1.67	3.40
3600	0.56	1.56	1.52	3.16

Table KK WC NC 002B - KingKlip 700® Non-Cyclonic

## Note:

1. Values are based on fixing into steel supports with a minimum thickness of 1.5mm.
2. Values in italics are estimates based on trend lines fitted to the test data.
3. Values are based on no insulation under the sheeting.
4. Serv. denotes serviceability.

## Maximum Recommended Roof Cladding Span with Mk3 SuperKlip Non-Cyclonic

Wind Region	Base Metal Thickness (mm)	Terrain Category 2		Terrain Category 3	
		End (mm)	Internal (mm)	End (mm)	Internal (mm)



A	0.42	2000	2500	2000	2500
	0.48	2600	3000*	2600	3000*
B	0.42	1900	2500	2000	2500
	0.48	2200	3000*	2600	3000*

Wind Loading Design Parameters



Table KK RS NC 004 - KingKlip 700® Non-Cyclonic

Note:

1. Maximum roofing spans comply with both strength and serviceability wind pressure requirements.
2. Spans shown in italics are limited by foot traffic requirements.
3. \*Spans in excess of 3000mm may be available subject to enquiry. Long spans require particular attention to installation practice.

## Maximum Recommended Roof Cladding Spans Based on Foot Traffic

Base Metal Thickness (mm)	End (mm)	Internal (mm)
0.42	2000	2500
0.48	2600	3000*

Table KK FT 001 - KingKlip 700® Non-Cyclonic

Note:

1. \*Spans in excess of 3000mm may be available subject to enquiry. Long spans require particular attention to installation practice.

## Maximum Recommended Wall Cladding Span with Mk3 SuperKlip Non-Cyclonic

Wind Region	Base Metal Thickness (mm)	Terrain Category 2		Terrain Category 3	
		End (mm)	Internal (mm)	End (mm)	Internal (mm)
A	0.42	2500	3000*	2900	3000*
	0.48	2700	3000*	3000*	3000*
B	0.42	2300	3000*	2700	3000*
	0.48	2600	3000*	3000	3000*

Wind Loading Design Parameters



Table KK RS NC 003 - KingKlip 700® Non-Cyclonic

Note:

1. Maximum walling spans comply with both strength and serviceability wind pressure requirements.

- \*Spans in excess of 3000mm may be available subject to enquiry. Wall applications or long spans require particular attention to installation practice.**

## Insulation

---

Care needs to be taken when installing insulation with roof sheeting. When insulation thickness up to 50mm are installed the screws detailed in Table KK RF NC 001 may need to be increased depending on the thickness and density of the insulation. When the screw is properly tightened into metal there should be a minimum of three (3) threads protruding past the support being fixed in to. For timber the screw must penetrate the timber as much as the screws detailed in Table KK RF NC 001 do without insulation. For insulation thicknesses greater than 50mm Fielders® recommend the use of a thermal spacer to help maintain R<sub>w</sub> values as well as minimising any bulging in the profile caused by the insulation. Please contact your local Fielders Representative to determine the most suitable spacer bracket for your project.

## Fasteners - Clip Fixing

---

Fasteners must be selected to match the life expectancy of the cladding material. Recommendations from fastener manufacturers should be sought.

Only fasteners complying with AS 3566:2002 and those that are compatible with the roofing material should be used for its fastening.

## Crest or Pan Fixing

---

KingKlip 700® can be crest fixed to timber or steel supports. Fasteners should not be located less than 30mm from the ends of the sheets. Contact your local Fielders® Representative for capacity information.

## Concealed Fix Clipping System

---



**Figure KK MKII KingKlip® NY 001 - Concealed Fix Clipping System**

## Recommended Fasteners Concealed-Fixed

Supports	Recommended Fastener (Without Insulation)
Steel 1.5mm	No. 10 x 16mm Hexagon head self-drilling screws for metal
Timber Hardwood	No.12 x 25mm Hexagon head Type 17 self-drilling screws
Timber Softwood	No.12 x 45mm Hexagon head Type 17 self-drilling screws

**Table KK RF NC 001 - KingKlip 700® Non-Cyclonic**

### Notes:

1. Use three (3) fasteners per clip
2. Recommended fasteners shown in Table KK RF NC 001 are for construction without insulation

## KingKlip 700® Installation Procedure

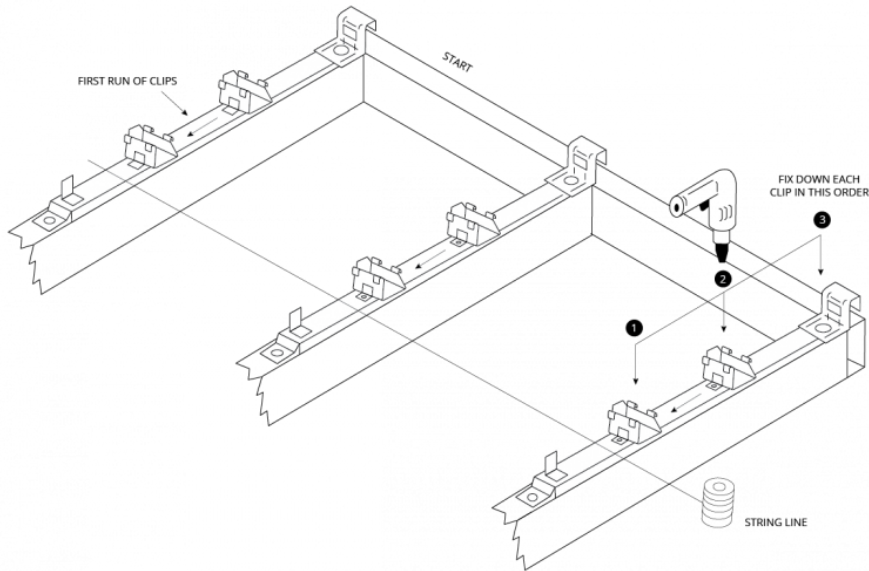
---

Refer to "Maintenance and Care" for general handling instructions.

### Step 1

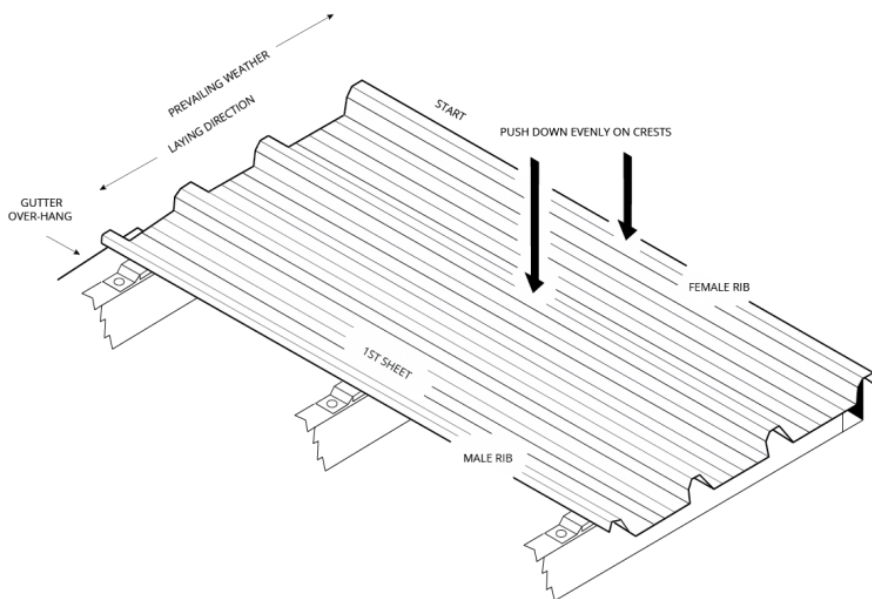
Fix the first clip, with the arrow on the clip pointing towards the area to be laid, perpendicular to the gutter in a straight line using the correct fasteners. Use a string line or the edge of the first sheet to ensure straightness. Care should be taken so that the overlap is facing away from the prevailing wind.

TEST: Installation Print Link



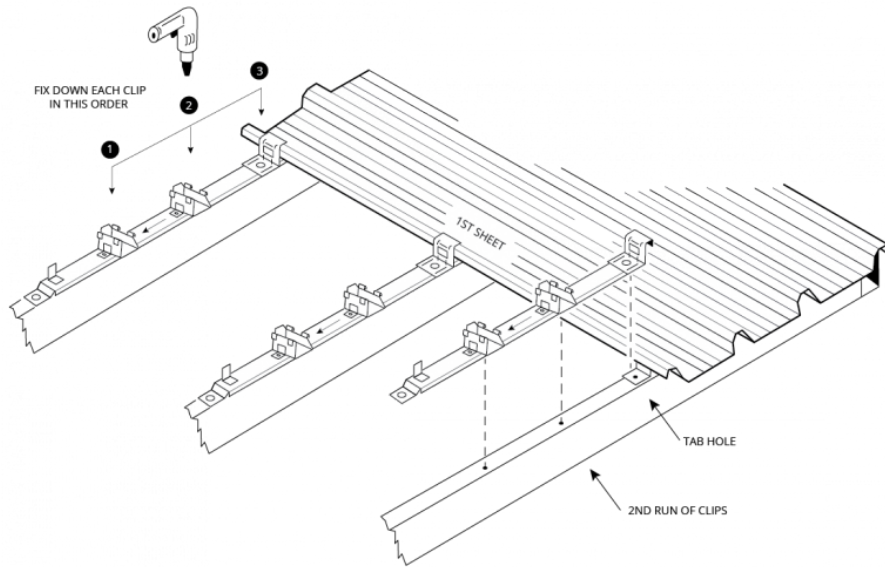
## Step 2

Locate the first sheet above the clips ensuring that the overhang into the gutter is correct (typically 50mm). Push downwards on the sheet until the decking is secured at every clip. Do not use excessive force.



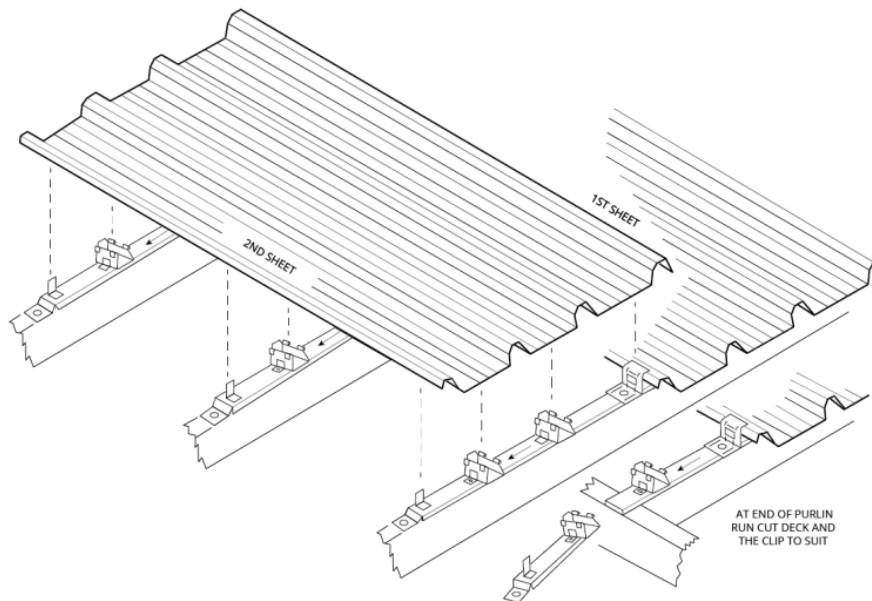
## Step 3

Lap the next clip over the top of the male rib. The holes on the existing and new clip will align, and hook into place on self locating tabs. Fasten this first and then fix the remaining two holes as previously. Fasten all clips in this manner.



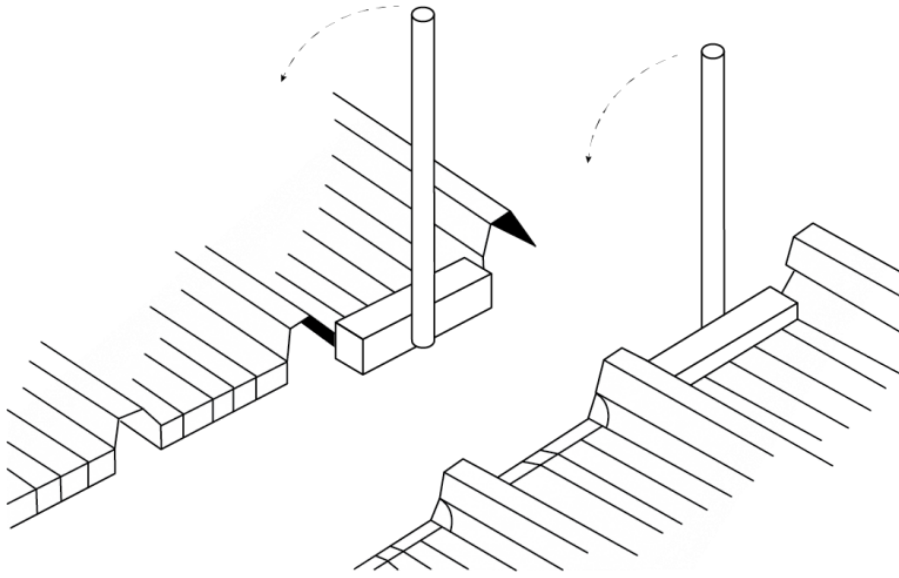
#### Step 4

Lay the next sheet of KingKlip 700® as previously. Checks should be made periodically to ensure the decking is installed squarely. This can be done by comparing the coverage at the ridge and gutter line. At the end of the purlins, cut the deck and the clip to suit.



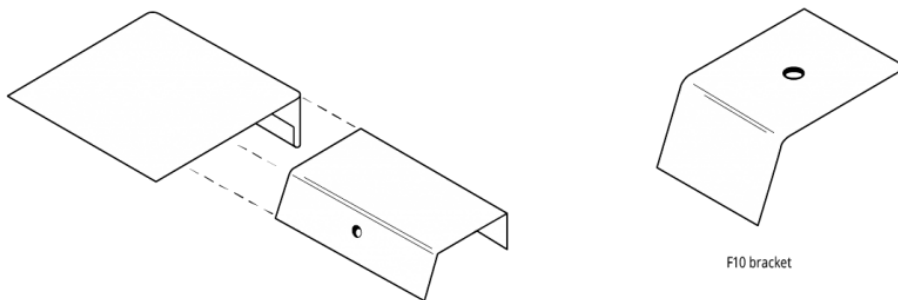
#### Step 5

Turn up KingKlip 700® pans at the ridge line. On lower pitches, pans should be turned down at gutter line. Turn Down tools available at your Local Fielders Office.



### Step 6

Flash the roof with compatible products using F10 bracket and sliding brackets, to allow for thermal expansion and contraction.



### Step 7

Clean the roof daily during construction as per Fielders® maintenance guide, removing all swarf, pop rivets and fasteners.

**Note:**

Foot traffic should be restricted to the pans of the decking.

## Turning of Roof Sheeting Ends

---

Refer to section “Flashings, Cappings & Ends of Sheets”.

## Designing Without Step Joints

---

Refer to section "Long Length Roofing Solutions".

## Maximum Sheet Length

---

See section "Thermal Expansion and Contraction of Steel Sheeting".

## Curving KingKlip 700®

---

For details regarding spring, crank and smooth curving of KingKlip 700® sheets, please see section "Curving of Steel Decks".

## Fielders® Expa-Tread™

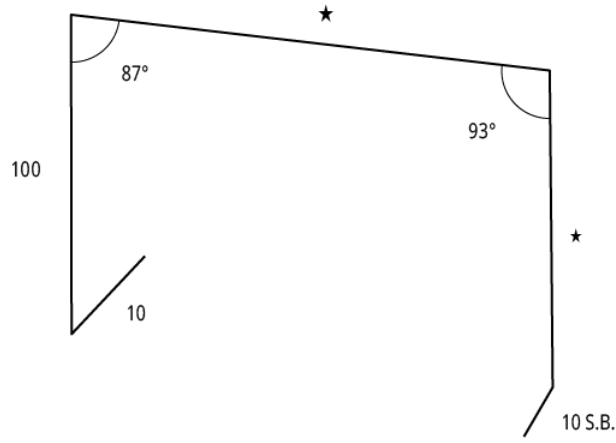
---

For details of a non piercing walkway system refer to Fielders® Expa-Tread™

## KingKlip 700® Flashings & Details

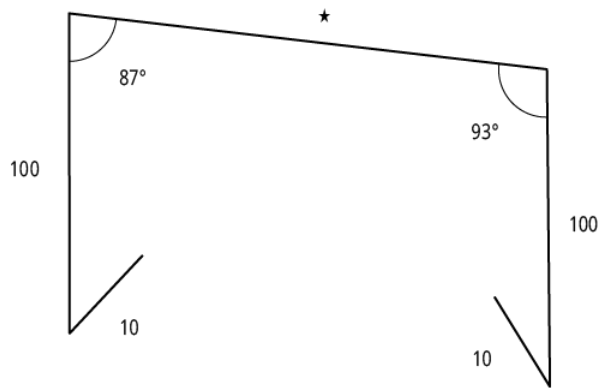
---

Masonry Parapet Side Wall (*Low*)



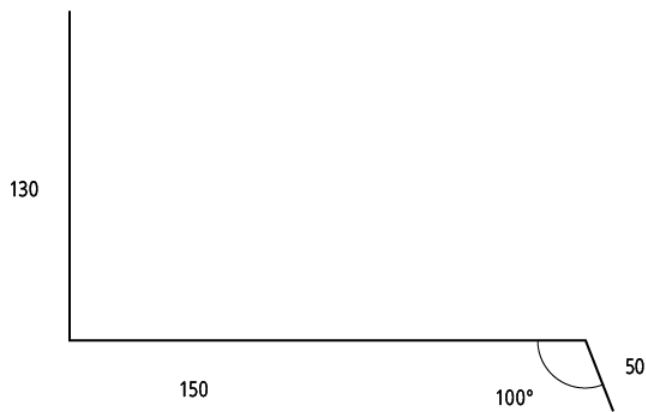
Product Code: KF1

Masonry Parapet Side Wall (*High*)



Product Code: KF2

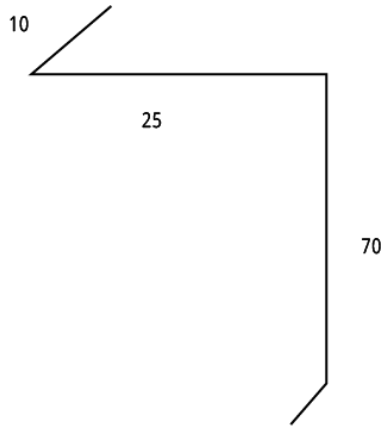
Apron Flashings



Product Code: KF3  
Girth 330

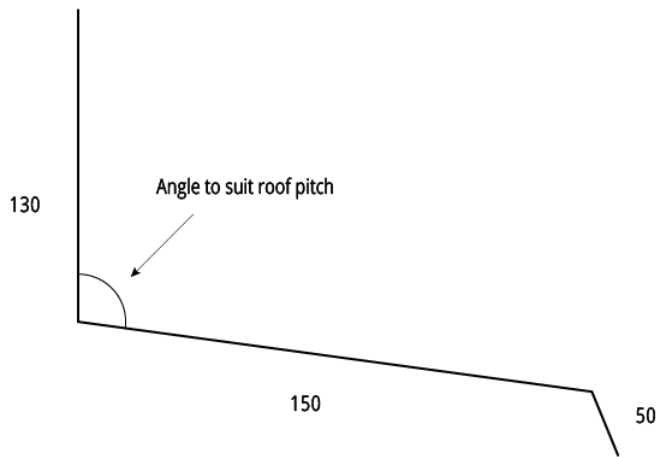
Overflashing





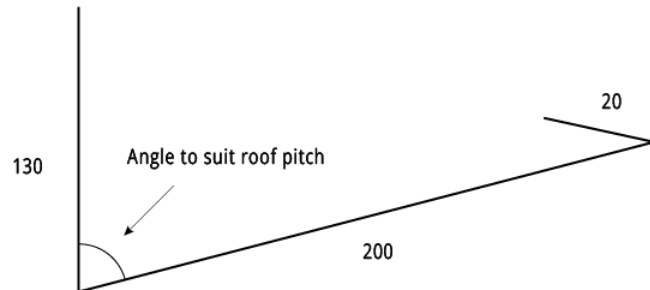
Product Code: KF4  
Girth 112

Headwall Apron Flashing



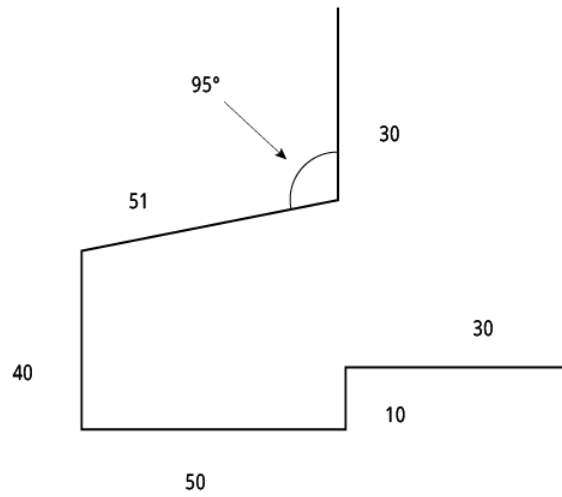
Product Code: KF5  
Girth 350

Soaker Gutter



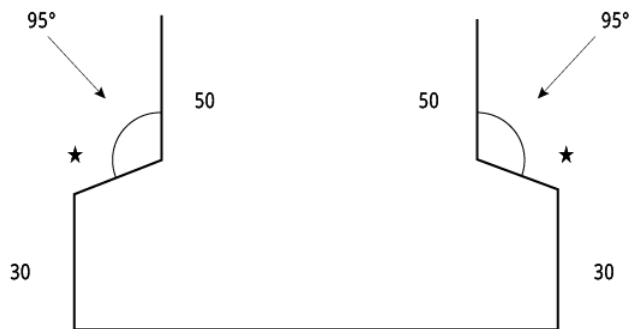
Product Code: KF6  
Girth 350

### Soffit Corner Flashing



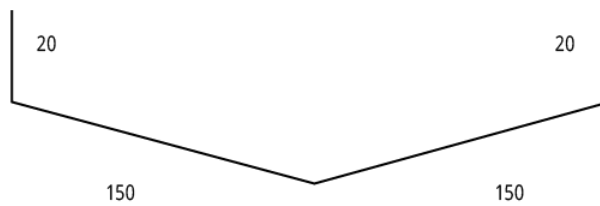
Product Code: KF7  
Girth 211

### Shoe Flashing



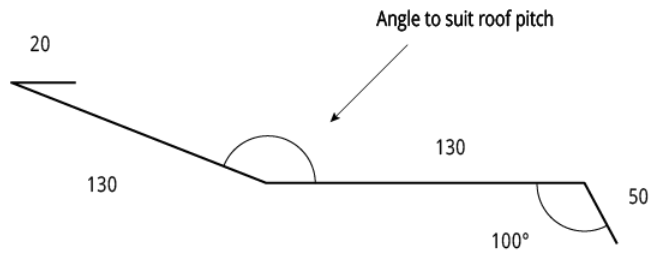
Product Code: KF8

### Valley Gutter



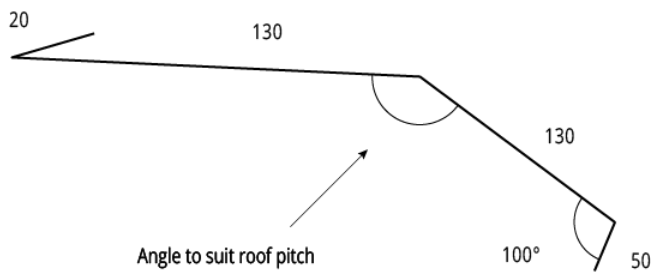
Product Code: KF11  
Girth 340

### Under Over Flashing



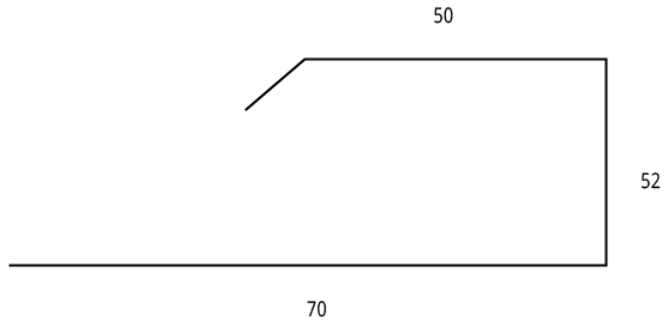
Product Code: KF12  
Girth 330

### Under Over Flashing



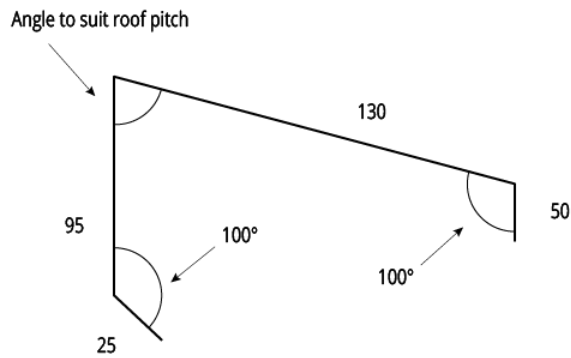
Product Code: KF13  
Girth 330

### Industrial Door Jamb Flashing



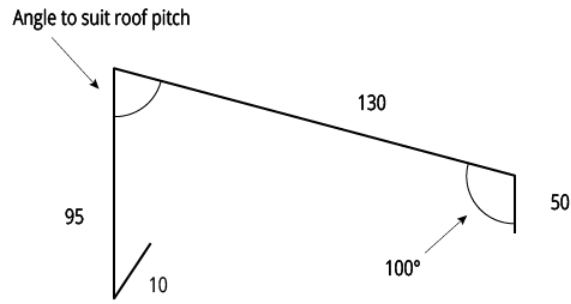
Product Code: KF14  
Girth 182

Apex Capping  
*Type 1*



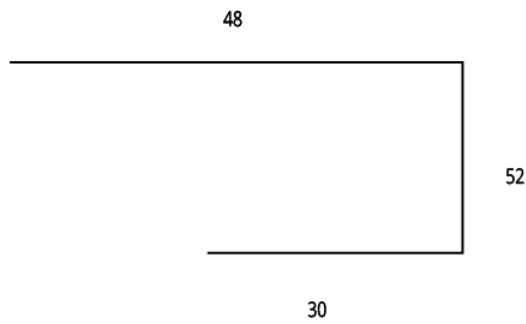
Product Code: KF17  
Girth 300

Apex Capping  
*Type 2*



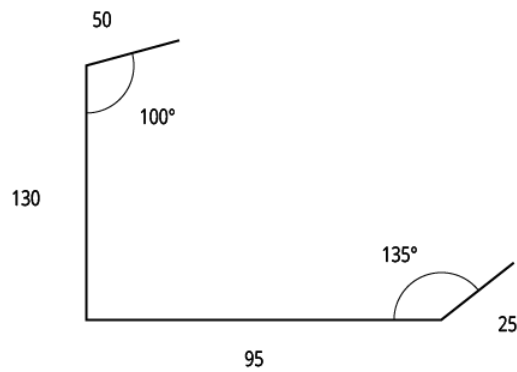
Product Code: KF18  
Girth 285

### Back Channel



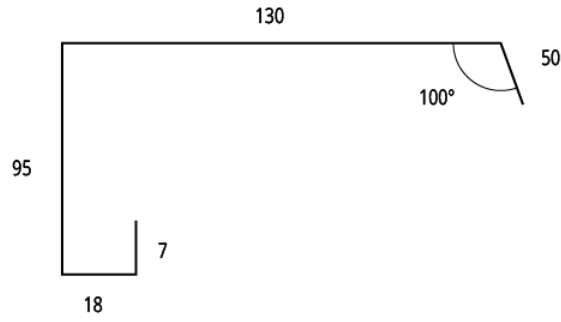
Product Code: KF19  
Girth 130

### Barge Capping Steel Construction



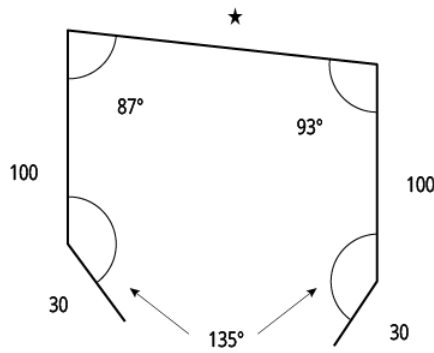
Product Code: KF20  
Girth 300

### Barge Capping



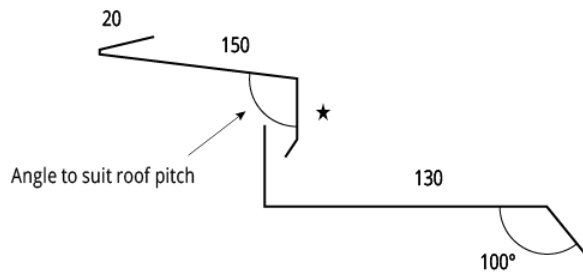
Product Code: KF22  
Girth 300

### Framed Parapet Capping



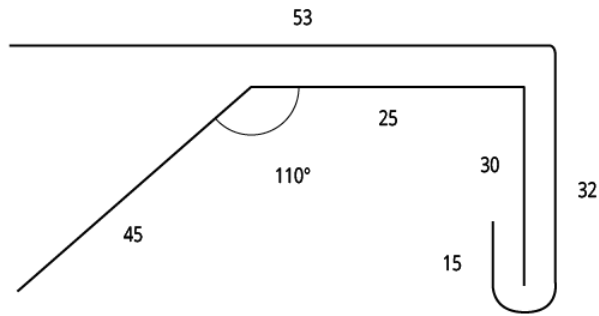
Product Code: KF23

### Two Piece Step Flashing



Product Code: KF24

### Sliding Bracket



Product Code: KF25

Table KK FD NC 001

**Notes:**

1. \* denotes size to be determined by application. All sizes are in mm and should be used as a guide only. They should be measured on-site to determine actual size.
2. S.B. denotes 'Slight Break'.
3. Also refer to "Typical Roofing Details".