



Barrier systems for use in off road applications, providing a low energy vehicle impact deterrent.



The total solution in barrier systems



Off Road

PedGuard

Information Book

> Beams C35 Slotted Angle Beam

Material Calculator:

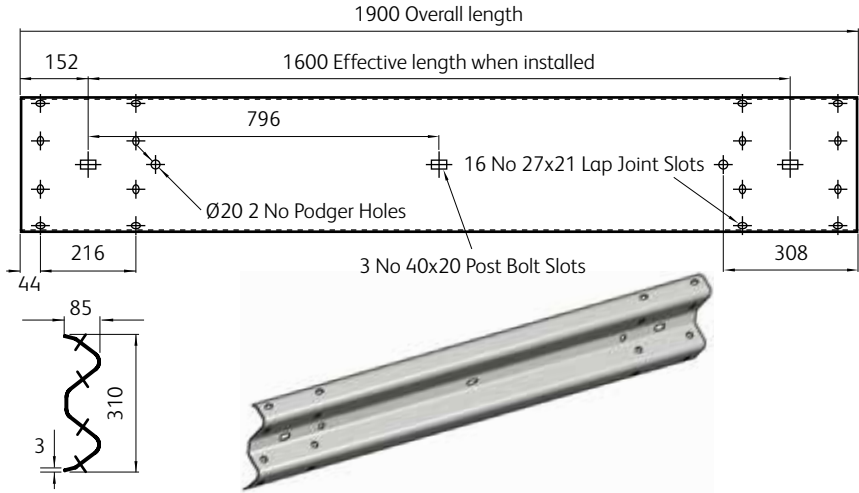
- > Divide total length by 1.6m
- > Add 8 x F07SH Lap Joint Bolts per connection
- beam to beam

Notes:

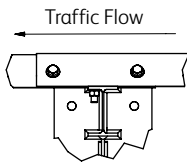
- > Material: BS EN 10025 Grade S275JR - 3mm
- > Finish: BS EN ISO 1461 Galvanised

Specification

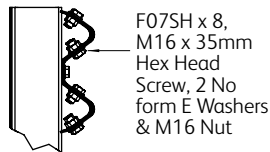
Part No	Description	Length	Weight (kgs)
C35	Slotted Angle Beam	1600	22.3



C35 Slotted Angle Beam

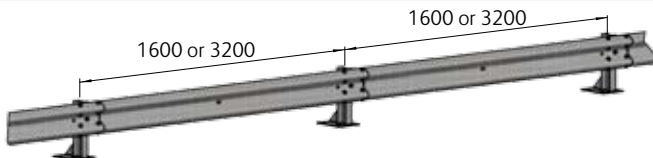


Beam Lap Joint Assembly Details



F06
M16 x 50
Hex Head
Bolt, 2 No
form F
Washers &
M16 Nut

Beam to Post
Assembly Details



Corrugated Beam Arrangement Details

> Beams Corrugated Beam

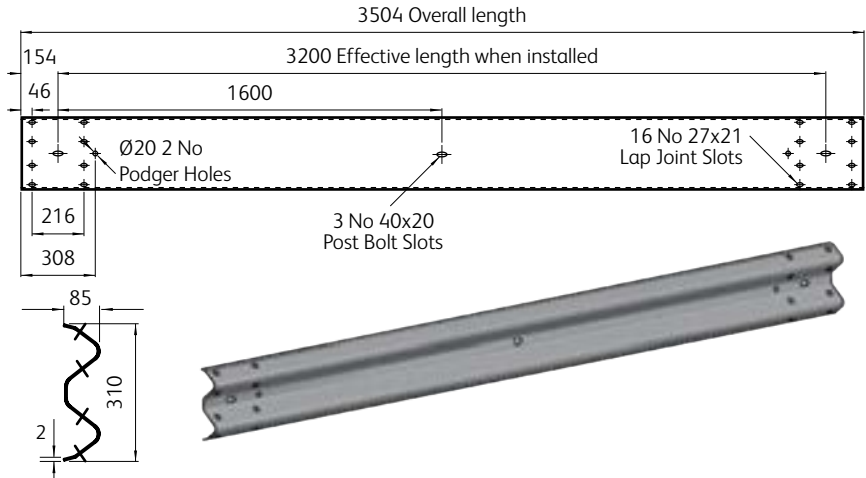
Material Calculator:

- > Divide total length by 3.2m
- > Add 8 x F07SH Lap Joint Bolts per connection - beam to beam
- > For non standard Beam lengths please contact us for further information

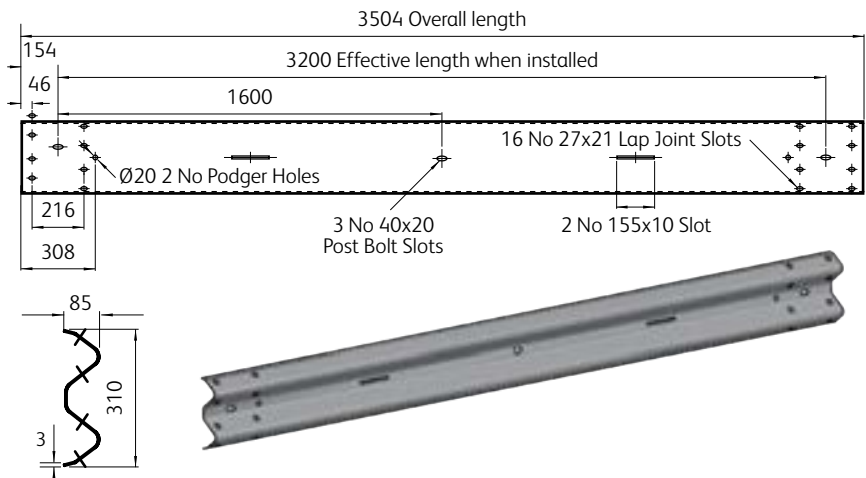
Notes:

- > Material: BS EN 10025 Grade S275JR (ORC027-2mm, C01-3mm)
- > Finish: BS EN ISO 1461 Galvanised

Specification			
Part No	Description	Length	Weight (kgs)
ORC027	2mm Corrugated Beam	3200	27.4
C01	3mm Corrugated Beam	3200	41.1



ORC027 Corrugated Beam



C01 Corrugated Beam

> Posts Concrete-in Z Post

Material Calculator:

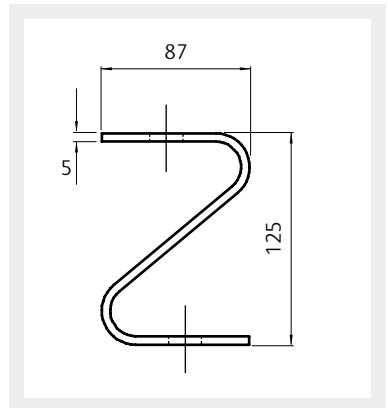
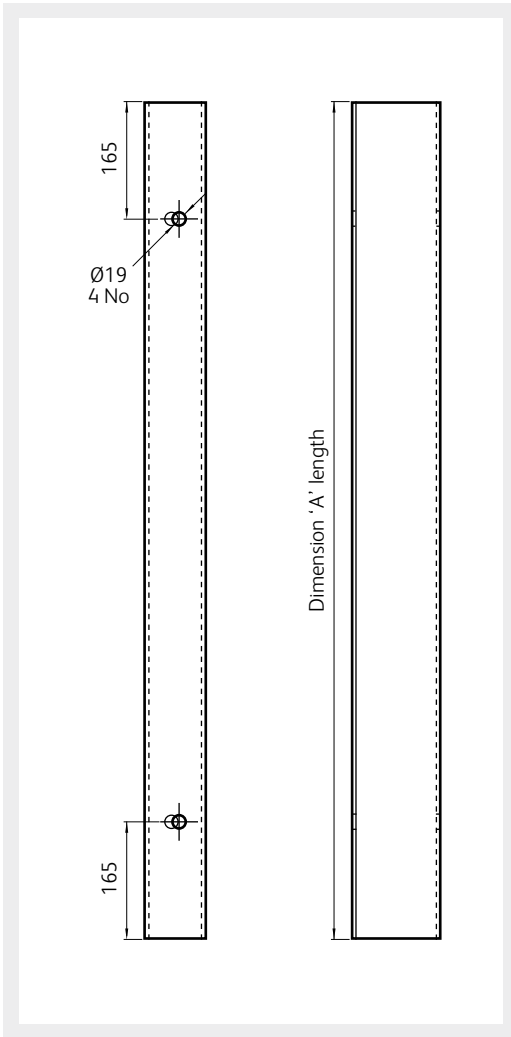
- > Divide total length of system required by 1.6m or 3.2m and add 1 No
- > 1 x F06 Post Bolt to bolt Beam to Post, (2 No for double sided)

Notes:

- > Material: BS EN 10025 Grade S275JR 5mm
- > Finish: BS EN ISO 1461 Galvanised
- > Can be used for Double Sided System

Post Variations

Part No	Description	Dim 'A'	Weight (kgs)
ORC003-1187	Z Section Post	1187	14.7
ORC003-1487	Z Section Post	1487	18.4



> Posts Surface Mounted Z Post

Material Calculator:

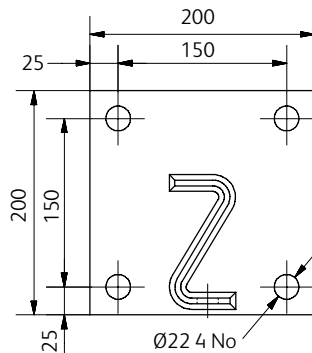
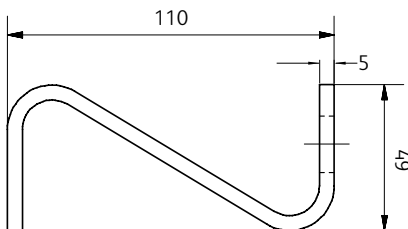
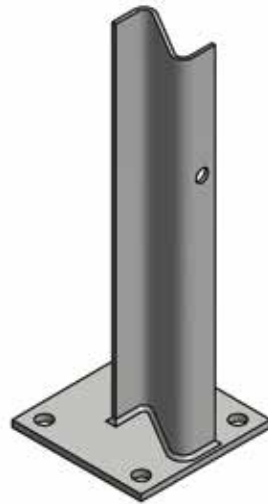
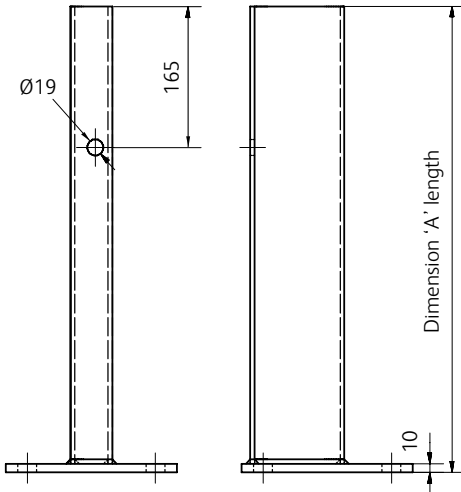
- > Divide total length of system required by 1.6m or 3.2m and add 1 No
- > 1 x F06 Post Bolt to bolt Beam to Post

Notes:

- > Material: BS EN 10025 Grade S275JR
- > Finish: BS EN ISO 1461 Galvanised
- > Base anchor/fixing requirements are dependant on the specific site slab/foundation and would need to be determined and supplied by third parties (Please see page 11 for post section properties).

Post Variations

Part No	Dim 'A'	Weight (kgs)
ORC009-547	547	7.65
ORC009-747	747	9.25



> Posts Concrete-in RSJ Post

Material Calculator:

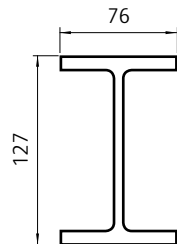
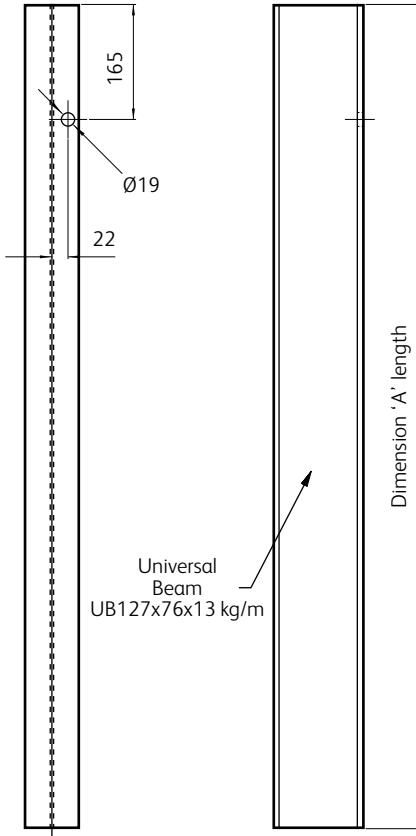
- > Divide total length of system required by 1.6m or 3.2m and add 1 No
- > 1 x F06 Post Bolt to bolt Beam to Post

Notes:

- > Material: BS EN 10025 Grade S275JR
- > Finish: BS EN ISO 1461 Galvanised

Post Variations

Part No	Dim 'A'	Weight (kgs)
ORC002-1087	1,087	14.85
ORC002-1187	1,187	16.20
ORC002-1487	1,487	20.30
ORC002-1787	1,787	24.40



> Posts Surface Mounted RSJ Post

Material Calculator:

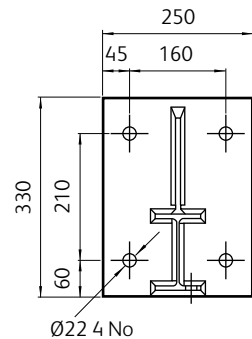
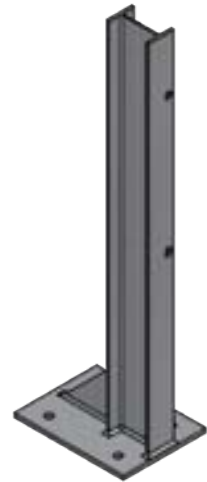
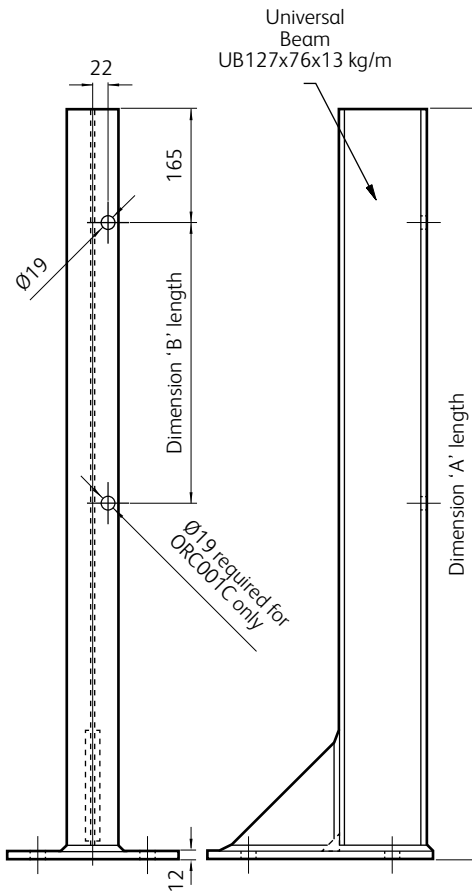
- > Divide total length of system required by 1.6m or 3.2m and add 1 No
- > 1 x F06 Post Bolt to bolt Beam to Post

Notes:

- > Material: BS EN 10025 Grade S275JR
- > Finish: BS EN ISO 1461 Galvanised
- > Base anchor/fixing requirements are dependant on the specific site slab/foundation and would need to be determined and supplied by third parties
(Please see page 11 for post section properties).

Post Variations

Part No	Dim 'A'	Dim 'B'	Weight (kgs)
ORC001-547	547	-	16.30
ORC001-747	747	-	19.90
ORC001-1095	1,095	410	22.65



> Corners External & Internal Corners

Material Calculator:

- > Add 2 Posts per Corner
- > Add 8 No F075H Lap Joint Bolt per corner

Notes:

- > Material: BS EN 10025 Grade S275JR - 3 mm
- > Finish: BS EN ISO 1461 Galvanised

Specifications

Component	Weight (kgs)
ORC005	13.2
ORC006	13.2
ORC018	14.5
ORC019	14.5



ORC005 External Corner 90°



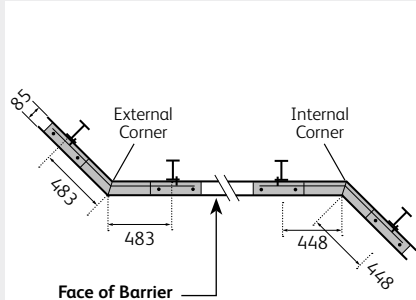
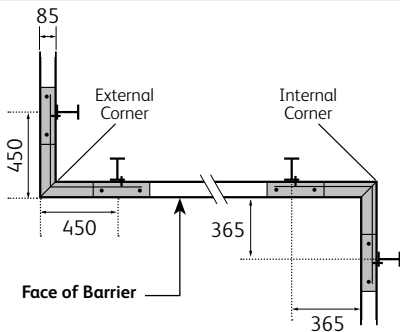
ORC019 External Corner 135°



ORC006 Internal Corner 90°



ORC018 Internal Corner 135°



> Beam Ends Corrugated Beam Plastic End Sleeve, Type D End Termination, End Shoe and Fishtail End Termination

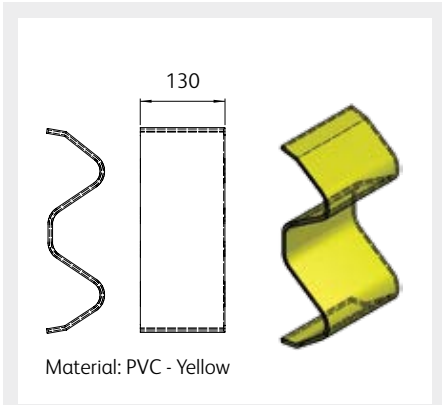
Material Calculator:

- > Add 4 x F07SH Lap Joint Bolt per ORC025
- > Add 8 x F07SH Lap Joint Bolt per ORC023 and ORC024

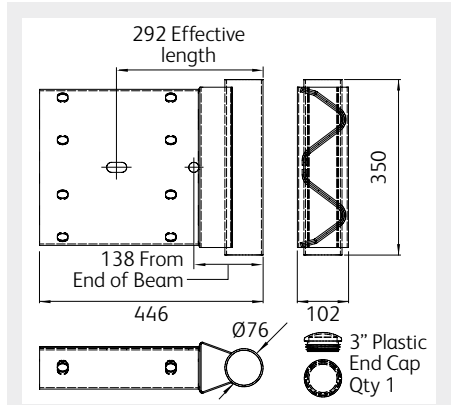
Notes: (Do not apply to ORC004)

- > Material: BS EN 10025 Grade S275JR
- > Finish: BS EN ISO 1461 Galvanised

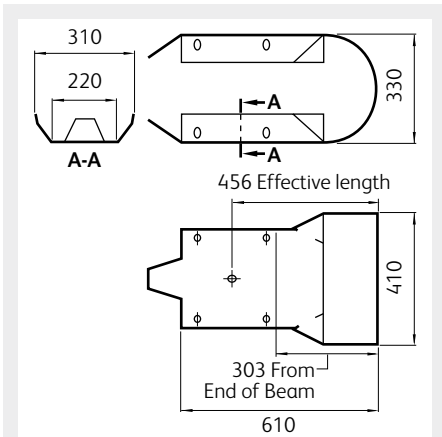
Specifications	
Component	Weight (kgs)
ORC004	0.4
ORC023	7.5
ORC024	10.2
ORC025	5.6



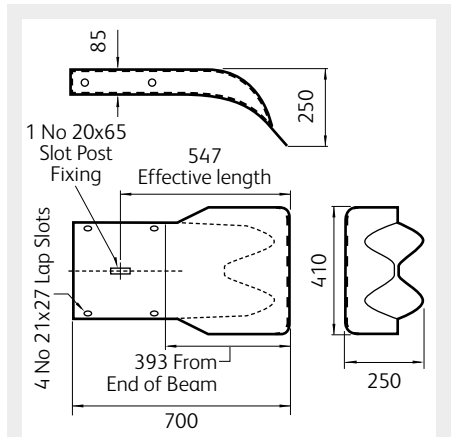
ORC004 Corrugated Beam PVC End Sleeve



ORC023 Type D End Termination



ORC024 End Shoe



ORC025 Fishtail End Termination

> Powder Coated Finishes

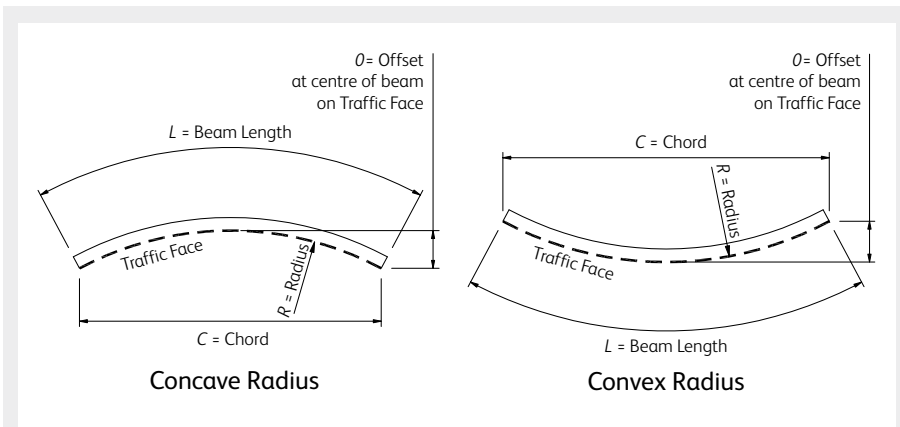
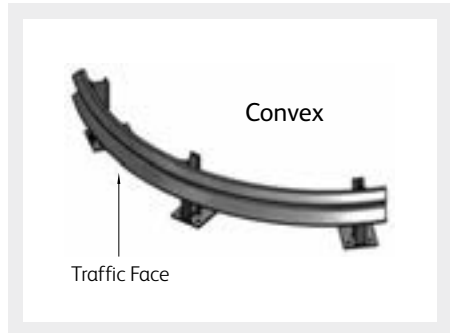
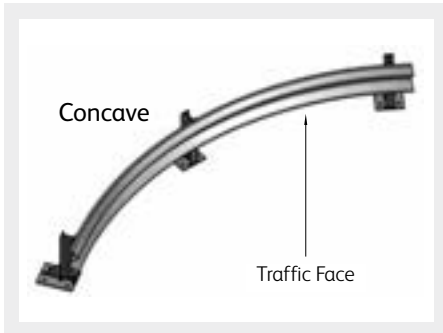
Available by request in the following standard colours:

Traffic Yellow - RAL1023, Traffic White - RAL9016, Traffic Black - RAL9017, Traffic Green - RAL6024

> Curves Concave and Convex Barriers

Notes:

- > Material: BS EN 10025 Grade S275JR 2mm or 3mm
- > Finish: BS EN ISO 1461 Galvanised
- > Radius to be measured from traffic face



How to calculate the radius

$$R = (O^2 + (C/2)^2) / (2 \times O)$$

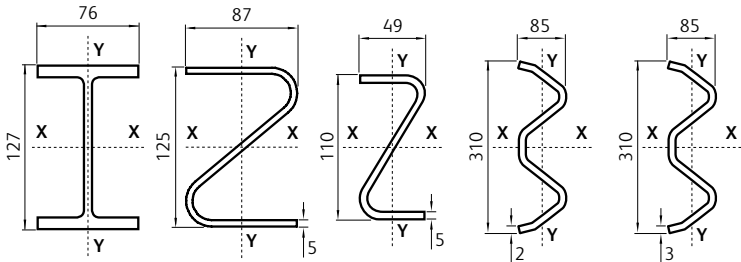
Advisory Note

For a 'traffic face' radius of less than 50m, beams are factory curved. Although beams can be radiused down to 6m it is recommended that the minimum practical radius of 10m is used as the edge of the beam is likely to 'ripple' when formed at a tight radius.

> Off-Road Section Properties

- Hill & Smith Ltd are unable to offer a layout/foundation design service. Ideally the foundation/anchorage should be designed to allow the post to plastically fail.
- The strength of the system depends on the properties of the chosen post, post spacing, strength and size of the foundation & base plate anchors (if applicable).
- Posts can be holed for double height and/or double sided.
- Please contact the team regarding **BRIFEN** wire rope and **OB**B Off Road options.

ORC001 ORC002 127x76x13kg/m 'UB' Post Steel Grade – S275	ORC003 125x87x5mm 'Z' Post Steel Grade – S275	ORC009 110x49x5mm 'Z' Post Steel Grade – S275	ORC027 2mm 'W' Beam Steel Grade – S275	C01 3mm 'W' Beam Steel Grade – S275
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Sectional Area cm ²	16.50	15.45	9.96	9.50	14.47
I _{xx} cm ⁴	473.0	359.1	163.3	904.5	1384.3
I _{yy} cm ⁴	55.7	100.0	20.1	65.9	106.6
Elastic Z _{xx} cm ³	74.6	57.4	29.7	58.2	89.3
Elastic Z _{yy} cm ³	14.7	23.0	8.2	15.5	24.8
r _{yy} cm	1.84	2.55	1.42	2.63	2.71
Plastic Z _{xx} cm ³	84.2	68.7	37.4	N/A	N/A

> Pedestrian Guardrail

HS35 Standard Panel

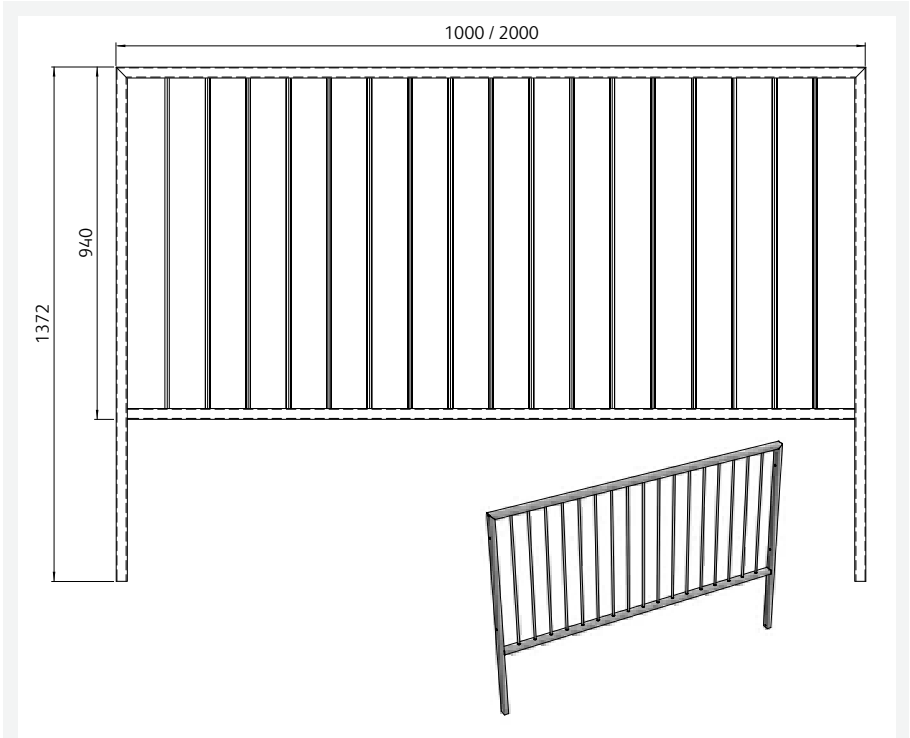
Description:

> STD - Inline Infill Bar, SI - Staggered Infill Bar

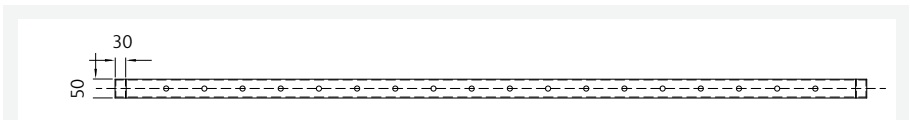
Notes:

- > Frame: 50x30 RHS Section
- > Infill: 12mm Diameter Bar
- > Fixings: 2 No M10 x75mm Bolt Nut and Washers
- > Finish: BS EN ISO 1461 Galvanised

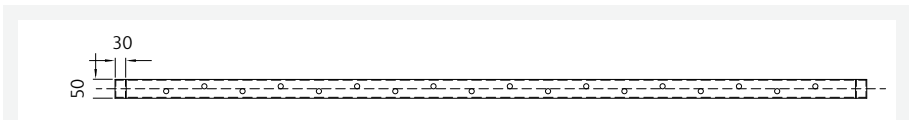
Panel Options		
Part No	Description	Weight (kgs)
CM15000	HS35 STD 1m Panel	17.7
CM15004	HS35 STD 2m Panel	29.9
CM15002	HS35 STD SI 1m Panel	17.7
CM15006	HS35 STD SI 2m Panel	29.9



Full Height Infill Panel



Inline Infill Bar Arrangement



Staggered Infill Bar Arrangement

➤ HS35 Sight Gap Panel

Description:

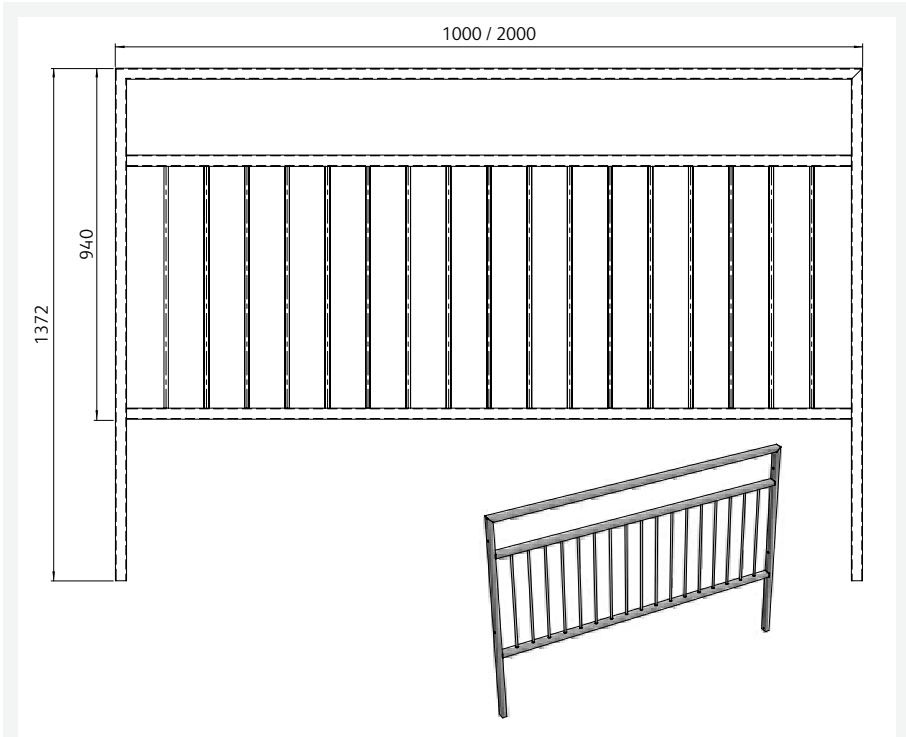
- > SG - Sight Gap, SI - Staggered Infill Bar

Notes:

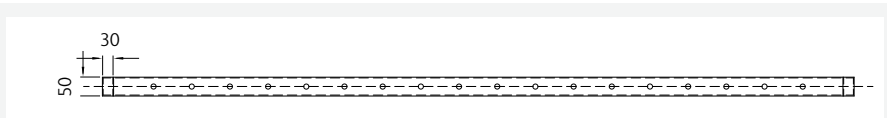
- > Frame: 50x30 RHS Section
- > Infill: 12mm Diameter Bar
- > Fixings: 2 No M10 x75mm Bolt Nut and Washers
- > Finish: BS EN ISO 1461 Galvanised

Panel Options

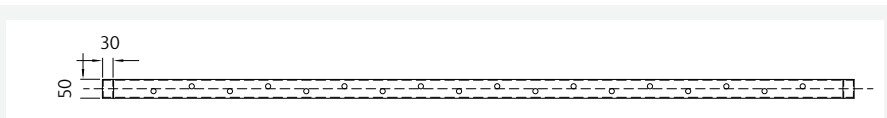
Part No	Description	Weight (kgs)
CM15001	HS35 SG 1m Panel	18.8
CM15005	HS35 SG 2m Panel	31.9
CM15003	HS35 SG SI 1m Panel	18.8
CM15007	HS35 SG SI 2m Panel	31.9



3/4 Height Infill Panel



Inline Infill Bar Arrangement



Staggered Infill Bar Arrangement

> Pedestrian Guardrail

MaxiSight

Description:

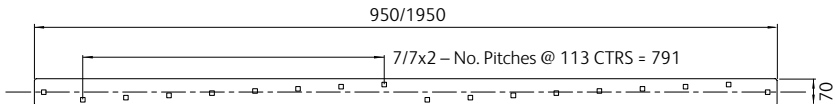
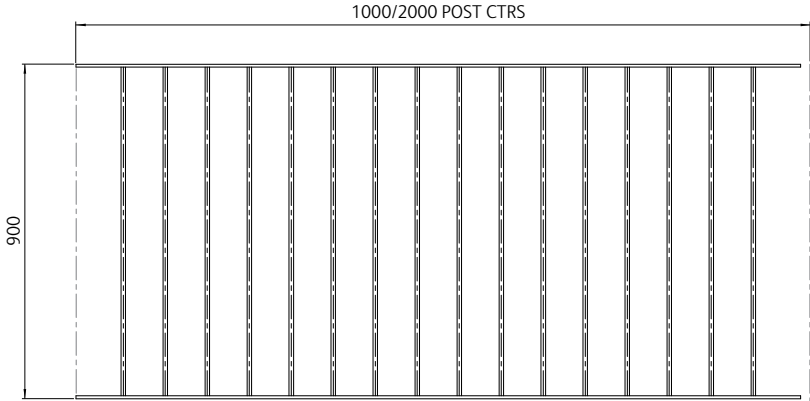
> H2, H4 and H8 Denote Infill Stagger Pattern

Notes:

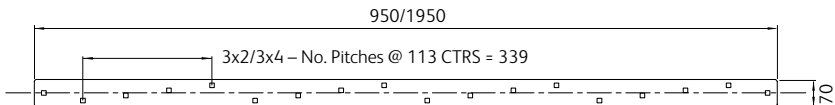
- > Frame: 70x8 Flat, Infill: 12mm Square
- > Fixings: 4 No M10 x 30mm Cup Square Bolt, Washer and Permacone Nut
- > Finish: BS EN ISO 1461 Galvanised

Panel Options

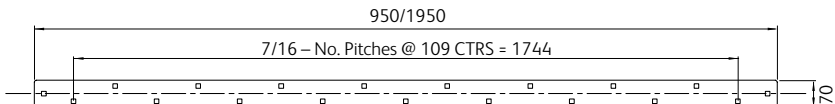
Part No	Description	Weight (kgs)
CM15503	MaxiSight H2 1000mm	17.7
CM15500	MaxiSight H2 2000mm	34.7
CM15504	MaxiSight H4 1000mm	17.7
CM15501	MaxiSight H4 2000mm	34.7
CM15505	MaxiSight H8 1000mm	17.7
CM15502	MaxiSight H8 2000mm	34.7



H2 Infill Stagger 2.5° - 5° Optimum Vision Angle



H4 Infill Stagger 5° - 14° Optimum Vision Angle



H8 Infill Stagger 14°+ Optimum Vision Angle

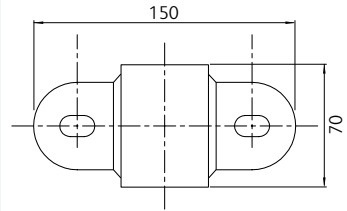
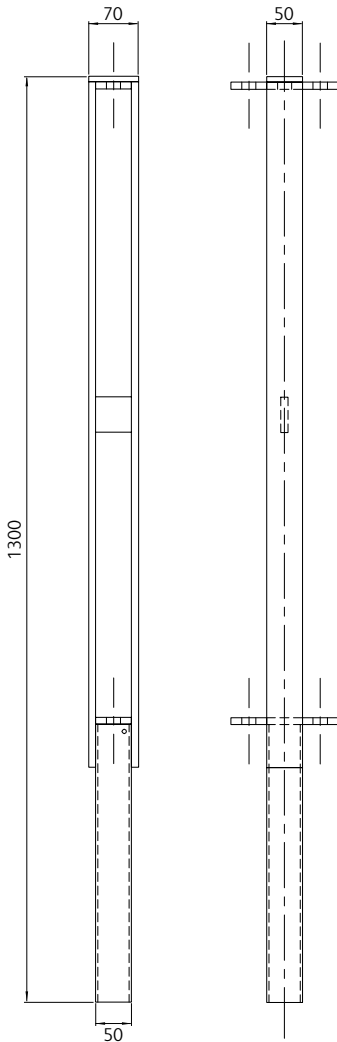
> Maxi Sight Posts

Notes:

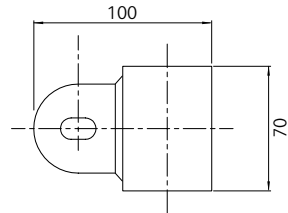
- > Frame: 70x8 Flat
- > Infill: 12mm Square
- > Posts: 50x10 Flat, 50x50 Box Section
- > Finish: BS EN ISO 1461 Galvanised

Post Options

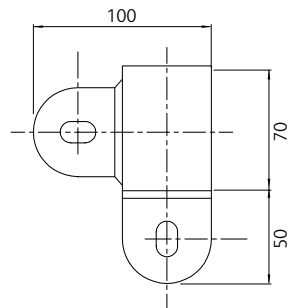
Part No	Description	Weight (kgs)
CM15550	MaxiSight Intermediate Post	11.4
CM15551	MaxiSight End Post	11.4
CM15552	MaxiSight Corner Post	11.4



Intermediate Post



End Post



90° Corner Post



We appreciate that all requirements are different and to help we have created a simple step by step guide to help you work out your single height barrier system requirement.

Simply follow the steps shown online, call our help line or submit your details if you would like further information.

New to Off-Road Barriers?

A step by step guide to
Off-Road Barriers:

www.armco.uk.com



The total solution
in barrier systems



Hill & Smith Limited

Springvale Business & Industrial Park,
Bilston, West Midlands WV14 0QL

T +44 (0)1902 499400

F +44 (0)1902 499419

E barrier@hill-smith.co.uk
sales@hill-smith.co.uk

Hill & Smith Limited

4 Newmains Avenue, Inchinnan,
Renfrewshire PA4 9RR Scotland

T +44 (0)141 812 5121

E wishaw@hill-smith.co.uk

www.hill-smith.co.uk