

Our products are designed and manufactured to meet and exceed various international standards. Our quality standards and manufacturing capability ensures customers best quality products at most competitive prices.

EF, enjoys a close relationship with major organizations for manufacturing best in class range of overhead line material. This collaboration provides our customer the most complete and advanced pre and post sales service.



1.0 SCOPE

This Specification provides the range of steelwork required for the construction of standard designs of 33kV, 11kV and L.V. overhead lines on steel pole supports. It includes cross-arm configurations, supporting steelwork for ancillary equipment and brackets for anti-climbing devices and for supporting and terminating L.V. overhead lines and services.

The Specification lists fittings in alphabetical order but the Drawings are attached in numerical order for easy reference.

2.0 <u>REFERENCES</u>

This Specification makes reference to the following documents:-

BS 4 Structural Steel Sections

Part 1 - Hot Rolled Sections

BS EN 1562:1997 Blackheart Malleable Iron Castings

BS 729 Hot Dip Galvanised Coatings on Iron and Steel Articles.

BS 1387 Steel Tubes and Tubulars suitable for Screwing to BS 21 Pipe

Threads.

BS EN 20273:1992 Clearance Holes for Metric Bolts and Screws.

BS EN 10137:1996 Weldable Structural Steels

BS EN 10056-1:1999 Hot Rolled Structural Steel Sections

Equal and Un-equal Angles

BS 5135 Metal Arc Welding of Carbon and Carbon Manganese

Steels

3.0 <u>MATERIALS AND FINISH</u>

Unless otherwise specified the steel used in the manufacture of items to this Specification shall be to BS EN 10137, Grade 43A.

Equal and un-equal angle sections shall conform to BS EN 10056. Channel sections shall conform to BS 4, Part 1.

Tube used in the manufacture of items shall conform to BS 1387.

Castings shall be manufactured from Grade 3 iron in accordance with BS EN 1562.



Bending of flat strap shall be carried out cold. The purchaser reserves the right to request proof loading tests to be carried out on article after bending.

All ferrous material shall be hot dip galvanised in accordance with BS 729 after fabrication.

The purchaser reserves the right to inspect samples of steel articles prior to galvanizing.

4.0 WELDING

Welding shall be carried out in accordance with BS 5135. After welding and before galvanizing, welds shall be thoroughly cleaned to remove slag and spatter, particular attention being paid to the toes of welds and to the prevention of entrapment of slag and spatter. The preferred method of cleaning welds before galvanizing is by sand blasting.

5.0 TOLERANCES

Dimensions are subject to the following tolerances unless otherwise stated:

Dimensions up to and including 50 mm $-\pm 1$ mm Dimensions greater than 50 mm $-\pm 2$ mm

Limiting dimensions of holes shall be within the tolerances of the 'medium fit series' of BS EN 20273, Table 2, the hole diameter shown in drawings correspond to the 'minimum diameter' column of the 'medium fit series'.



9.1 Alphabetical List of Fittings

Sl. No.	Category	Function	Page No.
1	Brace	33/11kV Crossarm	24
2 3 4 5 6 7 8 9	Bracket Bracket Bracket Bracket Bracket Bracket Bracket Bracket	Anti-Climbing Guard - Steel Poles Earthwire Bracket for P.O. Crossings L.V. House Service (Corner) L.V. House Service (Concentric) L.V. Insulator (D Iron & Pin) 33/11kV Insulator Supporting Bracket Surge Diverter	6 7 8 9 10 11 12 13
10 11 12 13 14	Clamp Clamp Clamp Clamp Clamp	Staywire Terminating Adapter Phase Disc., Pole Number and Name Label Danger Notice Cleat	26 27 28 29 30
15 16 17	Crossarm Crossarm Crossarm	33/11kV Intermediate & Pin Angle 33/11kV Section/Angle to 60° deviation 33/11kV Terminal	14 15 16
18 19 20 21 22	Platform Platform Platform Platform Platform	33kV DOE Fuses 11kV DOE Fuses Transformer - H Pole 33kV Surge Diverters Support 33kV Cable Support	17 18 19 31 32
23 24 25	Strap Strap Strap	33/11kV Section 33/11kV Terminal L.V. Extension	20 21 22
26	Strut	33/11kV Crossarm	23
27	Tie	Tie Rods	25







BRACKETFOR EARTH WIRE P.O.CROSSINGS

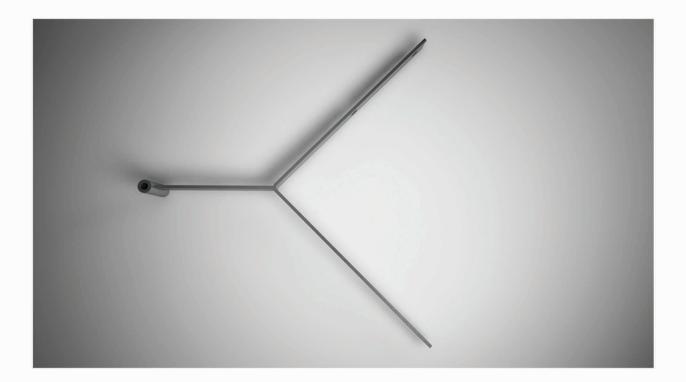


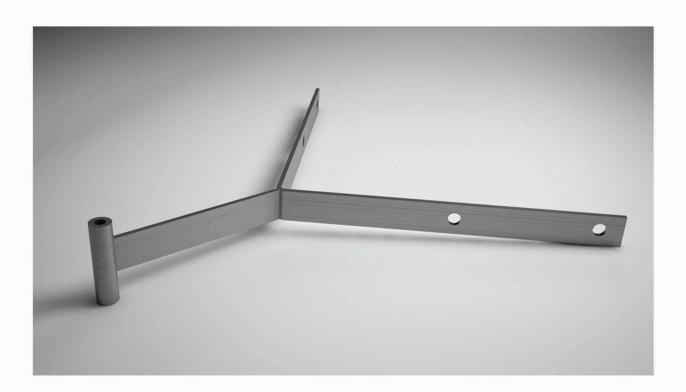




BRACKET FOR LV HOUSE SERVICE (CORNER)







BRACKETFOR LV HOUSE SERVICE (FOR CONCENTRIC CABLE ONLY)

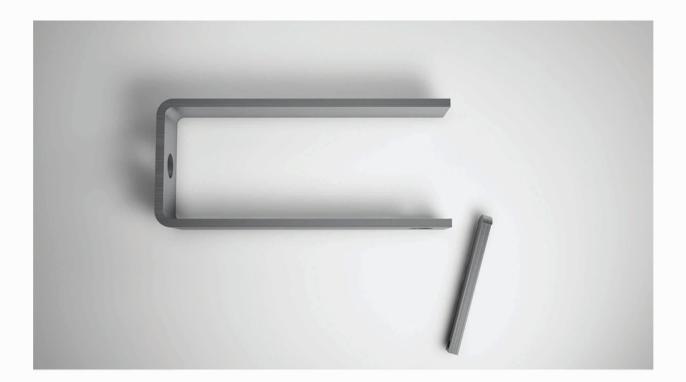


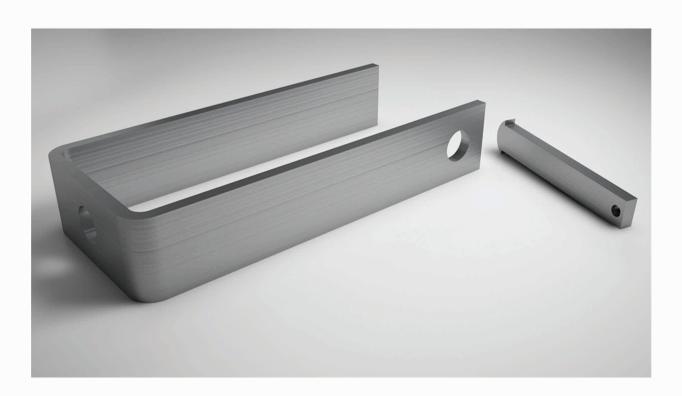




BRACKET & PIN FOR LV INSULATOR (D IRON & PIN)







BRACKET FOR 33 kV/11 kV INSULATOR

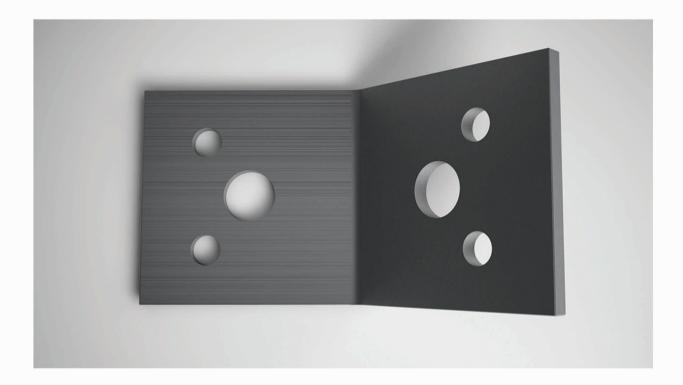






BRACKET FOR SUPPORTING

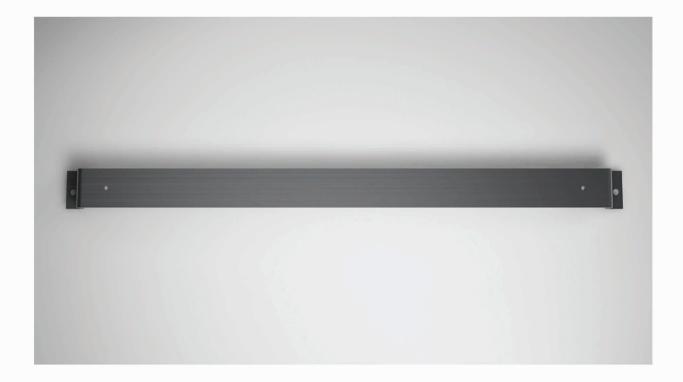






BRACKETFOR SURGE DIVERTER

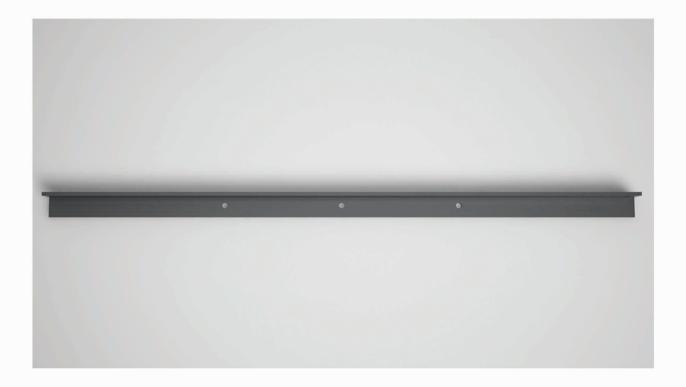






CROSSARM FOR 33 kV/11 kV INTERMEDIATE AND PIN ANGLE

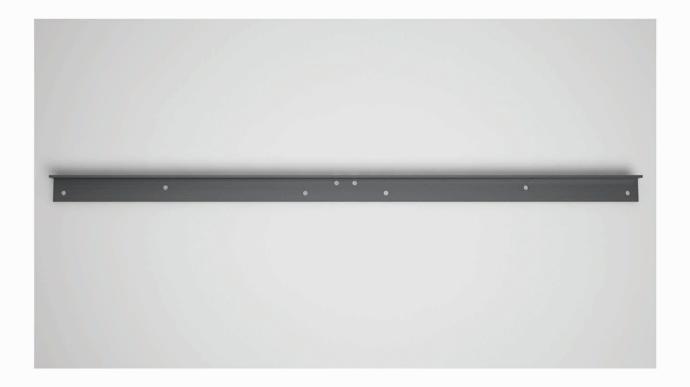






CROSSARMFOR 33 kV/11 kV SECTION ANGLE UP TO 60° DEVIATION







CROSSARM FOR 33 kV/11 kV TERMINAL







PLATFORM FOR SUPPORTING SURGE DIVERTERS PILOT INSULATORS OR D.O.E FUSES-33 kV







PLATFORM FOR SUPPORTING SURGE DIVERTERS PILOT INSULATORS OR D.O.E FUSES-11 kV



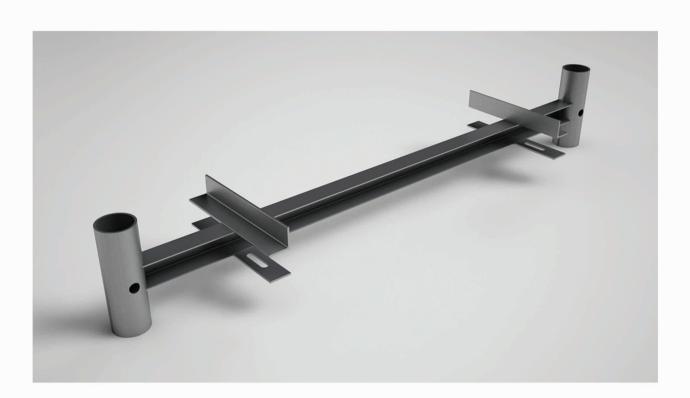




PLATFORMFOR TRANSFORMER-H-POLE







STRAP FOR 33 kV/11 kV SECTION

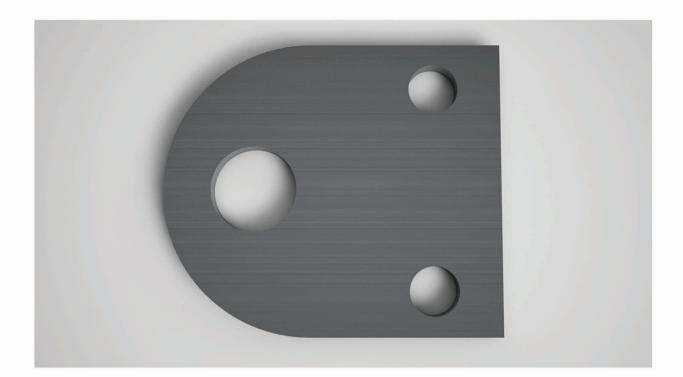






STRAP FOR 33 kV/11 kV TERMINAL

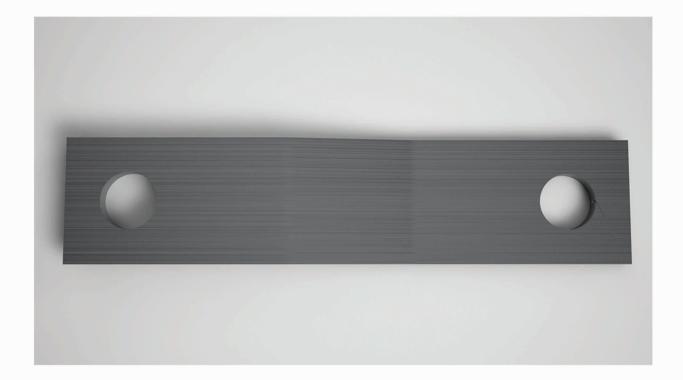






STRAP FOR LV EXTENSION



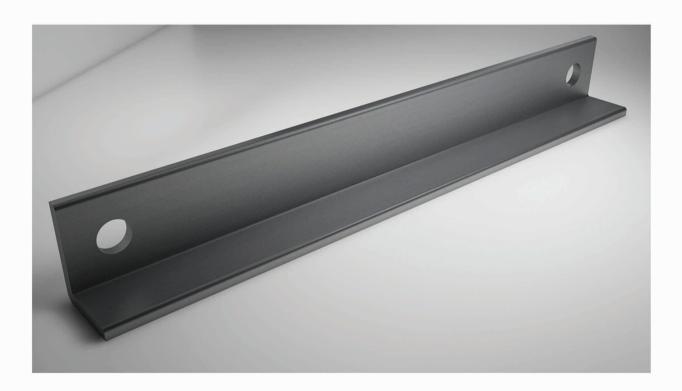




BRACE FOR 33 kV/11 kV CROSSARM



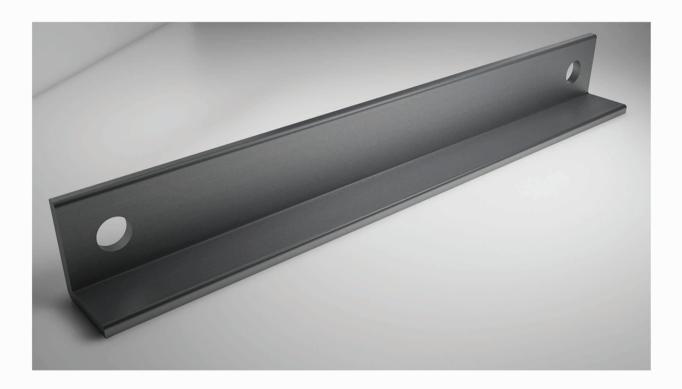




BRACE FOR 33 kV/11 kV CROSSARM







TIE-RODS FOR 33 kV/11 kV OVERHEAD LINES

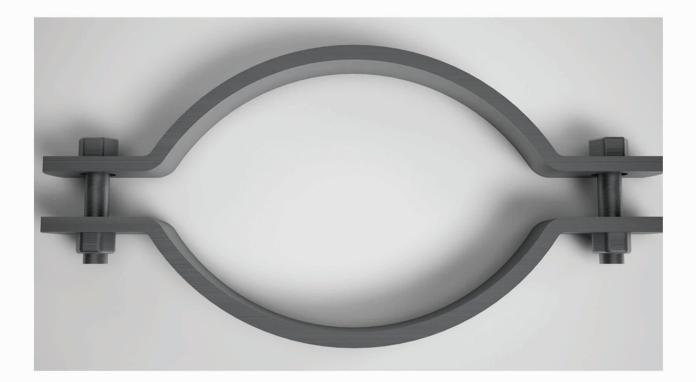






CLAMPFOR STAY WIRE TERMINATION



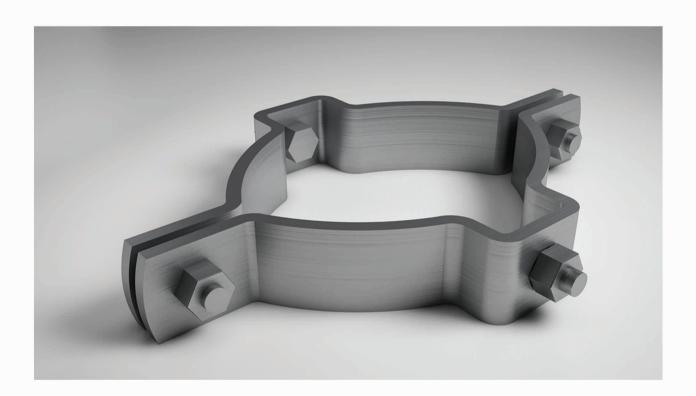




CLAMPFOR ADAPTOR

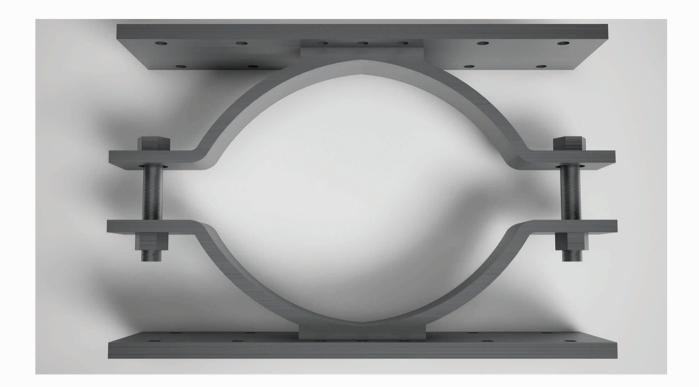






CLAMPFOR PHASE DISC, NAME LABEL & POLE NO.

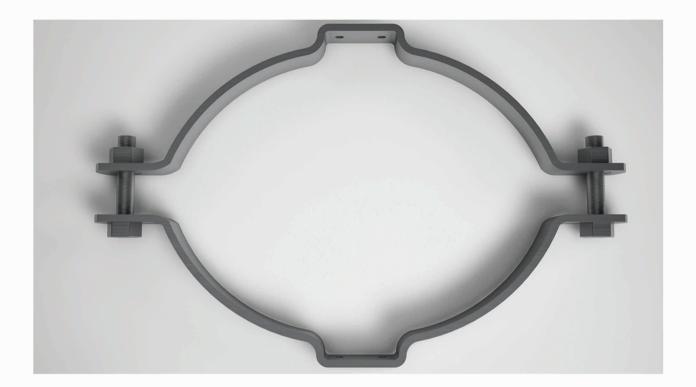


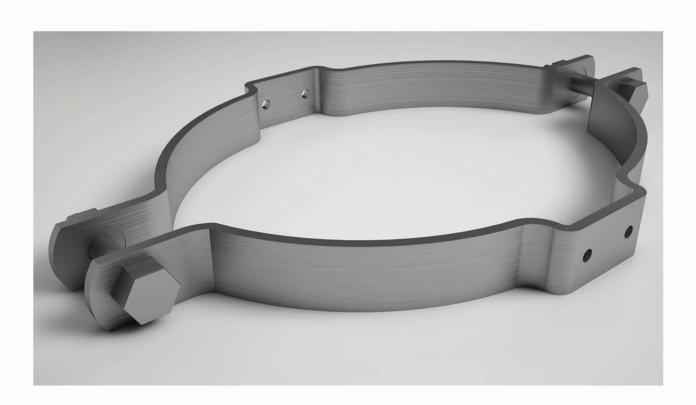




CLAMPFOR DANGER NOTICE PLATE







CLAMP FOR CLEAT







PLATFORMFOR 33 kV SURGE DIVERTERS SUPPORT

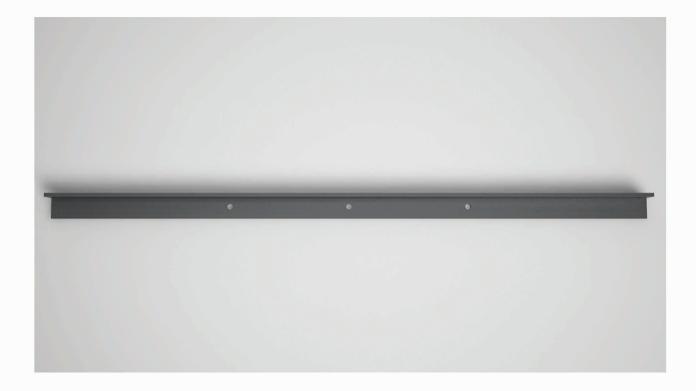






PLATFORMFOR 33 kV CABLE SUPPORT











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