



Grounding Systems

Austenitic Stainless Steel Type 304

Stavol[®]



Design & Manufacture

Based on the different requirements set forth in the legal technical standards and regulations, we have taken into account the following considerations in the design and manufacture of our products to ensure the protection against the corrosion and the effectiveness of our grounding systems:

Materials

- Selection of austenitic stainless steel 304 material with a useful life greater than 15 years.

Chemical Properties

- High resistance to atmospheric corrosion.
- No galvanic corrosion due to the homogeneity of all of its components.

Mechanical Properties

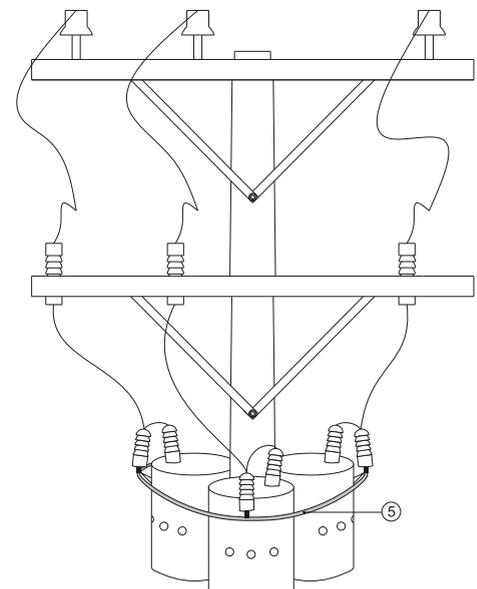
- Does not require exothermic welding.

Electrical Properties

- Effective handling of the touch and step potential.

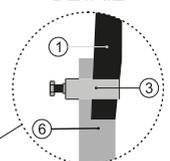
The good design of a grounding system, must ensure the control of the touch and step potential, thus complying with the basic function of driving and dissipate with sufficient capacity the flow of lightning, electrostatic and failure currents.

Assemble of the grounding system for surge arresters and distribution transformers.



KIT COMPONENTS ALL STAINLESS STEEL 304	
No.	DESCRIPTION
1	Downspout Surge Arrester Conductor
2	Downspout Transformer Conductor
3	Connector
4	Clamps
5	Flat Conductor
6	Grounding Rod (Optional)

DETAIL



HIGHLY CORROSIVE SOIL



Skin Effect

The current density when a direct current (DC) is flowing, is uniform throughout the surface of the conductor. By contrast, in the case of the transmission of alternating current (AC), the current flows mostly at the periphery of the conductor due to the electromagnetic field created.

This phenomenon is known as skin effect; it restricts the flow of electrical current, since it uses only a percentage of the conductive material and generates a rise in temperature as a result of the Joule effect.

The skin effect is directly related to the shape of the conductor's edge and its length in relation to their sectional area. In electrical terms this effect is related to the mutual impedance of the conductor.

The blocks used in the bus bars are more efficient for the conduction of the electrical flow than the circular conductors used in the form of cables, due to the declining influence of the skin effect; this is for their greater peripheral length in relation to their sectional area.

DROP OUT SURGE ARRESTER



FLAT CONDUCTOR

AC

CIRCLE CONDUCTOR

CIRCLE CONDUCTOR



Are you using the appropriate systems
of protection against any possible

ELECTRICAL FAILURE?

Electricos Internacional LTDA., specializes in the manufacture of GROUNDING SYSTEMS, made of AUSTENITIC STAINLESS STEEL TYPE 304, and also in the development of customized solutions related to the individual areas of concern of each grounding electrical requirement, that always keep in mind the safety of personnel and the protection of EQUIPMENT AND STRUCTURES.

Our products are manufactured with state of the art technology and under the most demanding standards of quality.

Below we will summarize the different applications of our (GKS), to the various fields of the Utilities companies and the construction of buildings and structures.

We pioneered the concept of grounding systems in Colombia, through the development of Kits with all the necessary components manufactured with Austenitic Stainless Steel 304.
Intellectual Property of Electricos Internacional Ltda.

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Physical Properties

Such an advantage of the system developed by Electricos Internacional Ltda is the non-use of the exothermic welding due to the connection between the conductor and the downspout connector with our patented type "U" connector, which does not allow interstitial spaces.

For this specific type of user (telecommunications) we have created some other kits like:

- Underground inspection boxes
- Phone Cabinets
- Nodes
- Cover Splice

LAB TESTING RESULT FOR THE BENDING TEST DONE TO THE SS RODS.

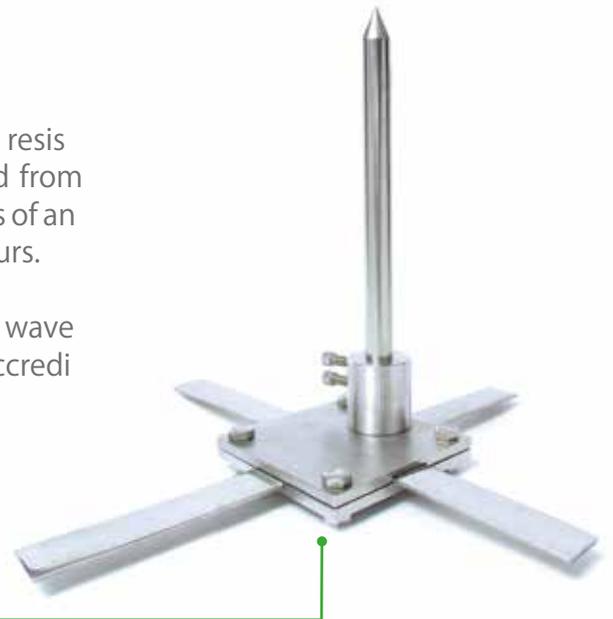
Material		SS Type 304	SS Type 304	SS Type 304	Copper Electroplated Steel	Copper (Cu)
Nominal Diameter	mm	9.5	12.7	15.8	14.1	14.1
Max Strength	N	8.560	23.890	30.440	13.560	7.070
Fluence Limit	N	5.954	11.654	21.371	11.399	5.736
Traction Max	Mpa	121	189	155.3	86.8	45.6
Fluence effort	Mpa	84	92	109	73	37
Bending 180°		NO CRACKS	NO CRACKS	NO CRACKS	CRACKS ON COATING	NO CRACKS



SIPRAS

As manufacturers of grounding systems we guarantee the resistance to corrosion during a minimum of 15 years counted from the date of installation, certifying this requirement by means of an immersion testing method in salt chamber during 1000 hours.

Both the intensities of short circuit as the testing of current wave impulse to 8/20 microseconds are made by appropriate accredited laboratories.



"Electricos Internacional Ltda, has an environmental management system that has identified, assessed and controlled the environmental aspects and impacts associated with our well diversified manufacturing processes and has been committed to the protection of the environment and the continued prevention of pollution.

Our programs allow minimizing the generation of waste and optimizing the consumption of natural resources through management tools that contribute to the improvement and strengthening of our system".

CONTACT

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