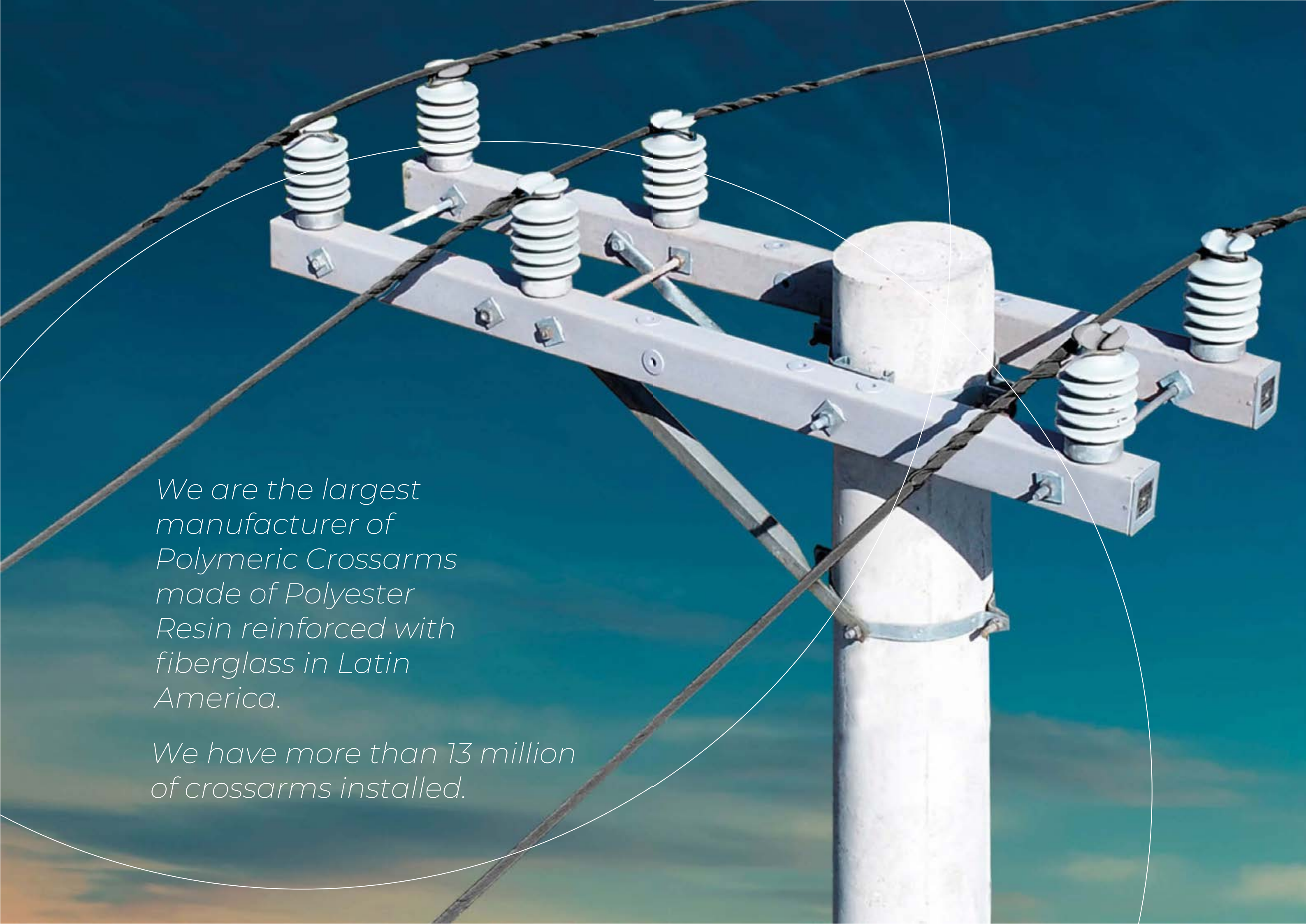




Hello, we are ASW.

We are located in Mogi Guaçu, state of São Paulo. We have been operating in the electrical energy distribution market since 2008. Our manufacturing line includes polyester resin crossarms reinforced with fiberglass, polymeric accessories for compact and conventional networks from 15kv to 35kv, and polyester resin poles reinforced with fiberglass for energy distribution network.





We are the largest manufacturer of Polymeric Crossarms made of Polyester Resin reinforced with fiberglass in Latin America.

We have more than 13 million of crossarms installed.

Polymeric Crossarm made of Polyester Resin reinforced with Fiberglass



Code CPRFV

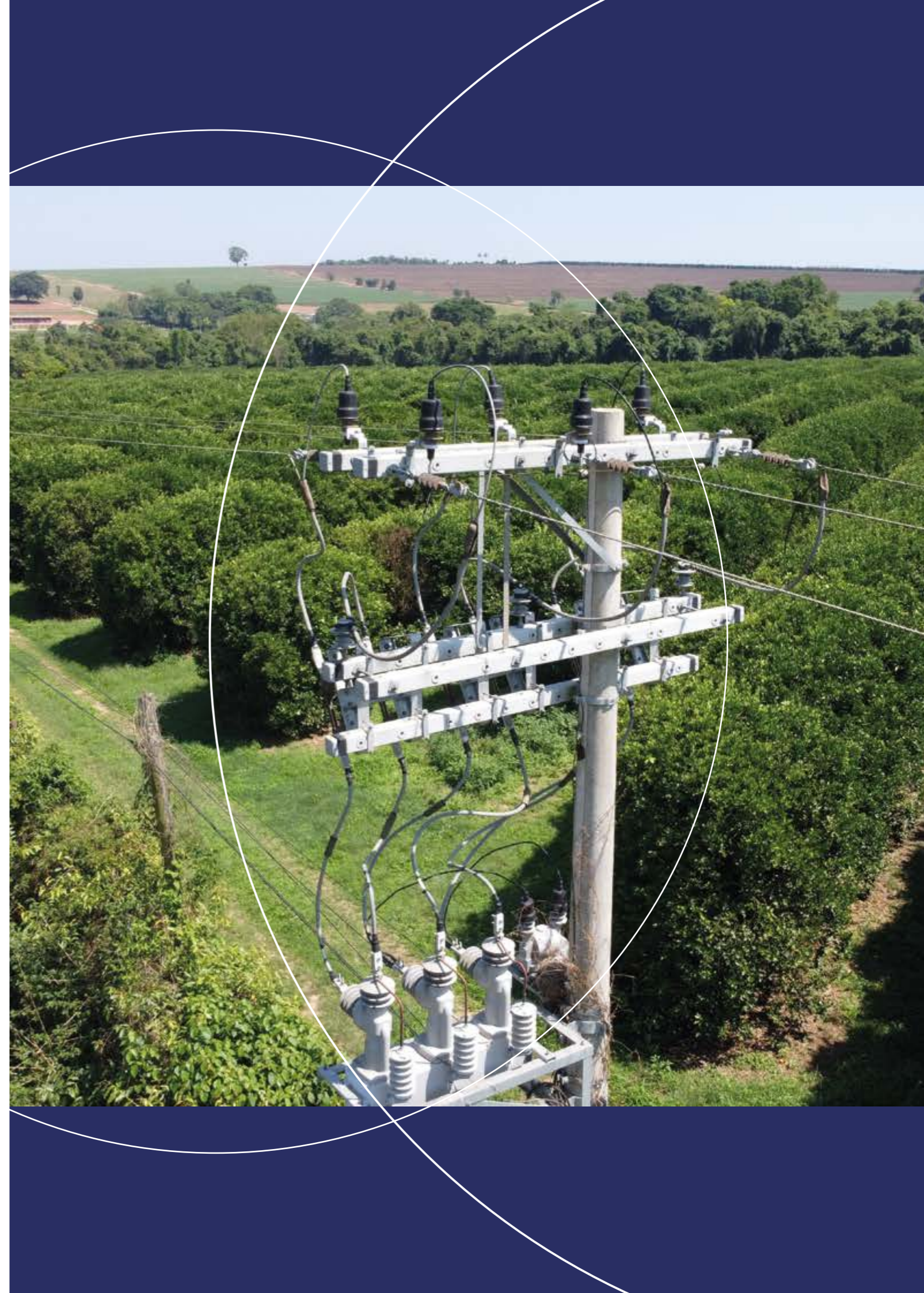
DESCRIPTION
 The product is designed to withstand the mechanical efforts that are applied upon the conductors/insulators and/or electrical power distribution network equipment. The crossarm has high durability and low weight, which makes its transportation and maintenance easier. It is made to resist natural adversities such as high concentration of salinity, heat, humidity and also resist the attack of natural and biological agents.

MATERIAL
 Polyester resin reinforced with fiberglass

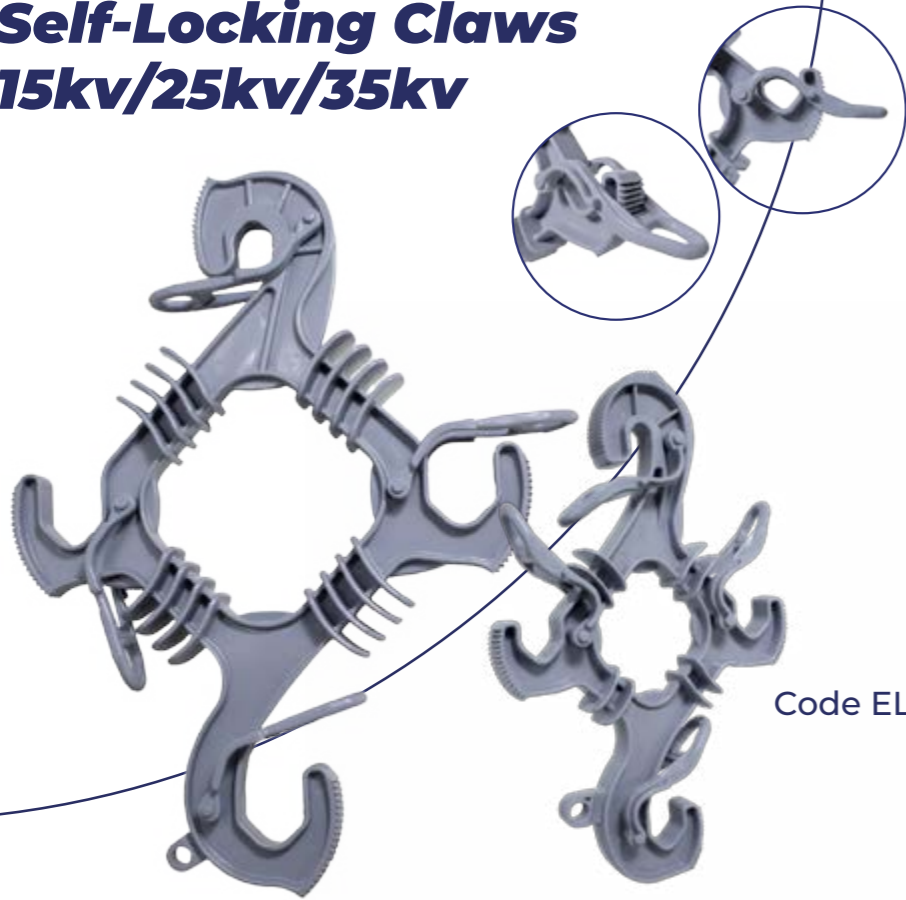
- According to ABNT NBR 16946:2021
- CUSTOMIZED PRODUCT: Length and dimensions for drilling

COMPOUND CHARACTERISTICS

<p>MATERIAL CHARACTERISTICS</p>	<p>Water absorption: as indicated in ABNT NBR 5310, the result must be <3%. Flammability: according to UL 94, must have a minimum rating of V-1. Resistance to electrical tracking and erosion: according to ABNT NBR 10296, method 2, criterion A 1.5kv. Barcol hardness: the pole will be considered approved if the measurement shows values ≥ 30 barcol. Resistance to flame propagation: a flame must be applied for 1 minute in accordance with ABNT NBR 16989:2021. After removing the heat source, the flame cannot spread and must be extinguished within 30 seconds.</p>
<p>PRODUCT CHARACTERISTICS</p>	<p>Mechanical testing of the compound: before and after aging in a UV chamber: - The aging test must be carried out in accordance with ASTM G155, cycle 1, for 2000 hours. - The tensile test before and after aging must be carried out in accordance with ASTM D3039. - The flexural test before and after aging must be carried out in accordance with ASTM D790.</p>



Rhomboid Spacer with Self-Locking Claws 15kv/25kv/35kv



Code ELAT

DESCRIPTION

The product was developed to be used in compact power distribution networks, with the function of ensuring the spacing between conductor cables and messenger cable, maintaining the level of electrical insulation to prevent the occurrence of short circuits and the formation of a power arc due to the proximity of covered cables.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

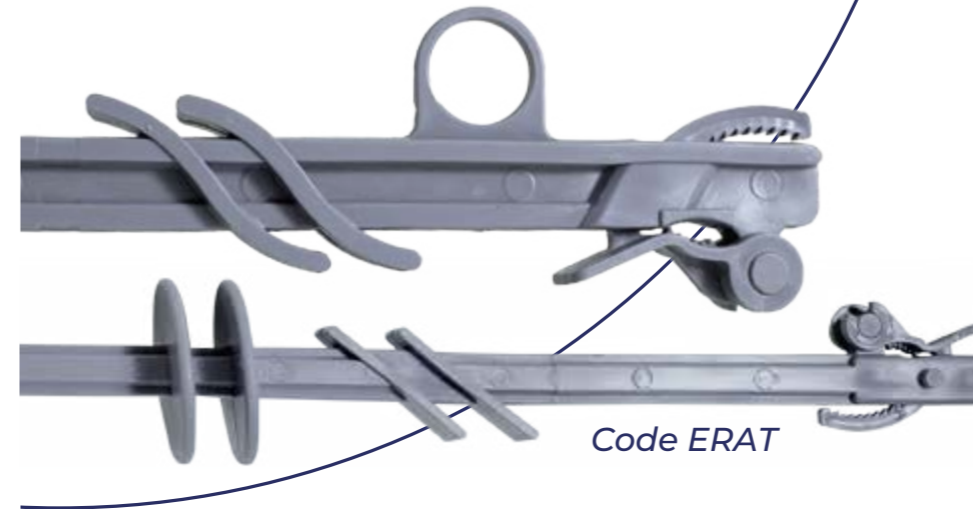
ACCORDING TO ABNT NBR 16094 and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Spacer with Self-Locking Claws – Primary and Secondary phases



Code ERAT

DESCRIPTION

Product developed for conventional primary and secondary energy distribution networks, preventing the occurrence of short circuits caused by accidental contact between cables, caused by animals, wind and trees. Can be used from cable 6 (4.47mm) to cable 397 (19mm). It can be applied easily without the use of special tools.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16094 and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Polymeric Pin Insulator with Self-locking Claws 15KV/25kv/35kv



Code IPPAT

DESCRIPTION

Product developed to be used in compact and conventional networks, of classes 15kv/25kv/35kv, with the function of maintaining network isolation. The IPPAT has self-locking claws, thus eliminating the need for ties, such as silicone rings and preformed ties.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16327

MATERIAL CHARACTERISTICS

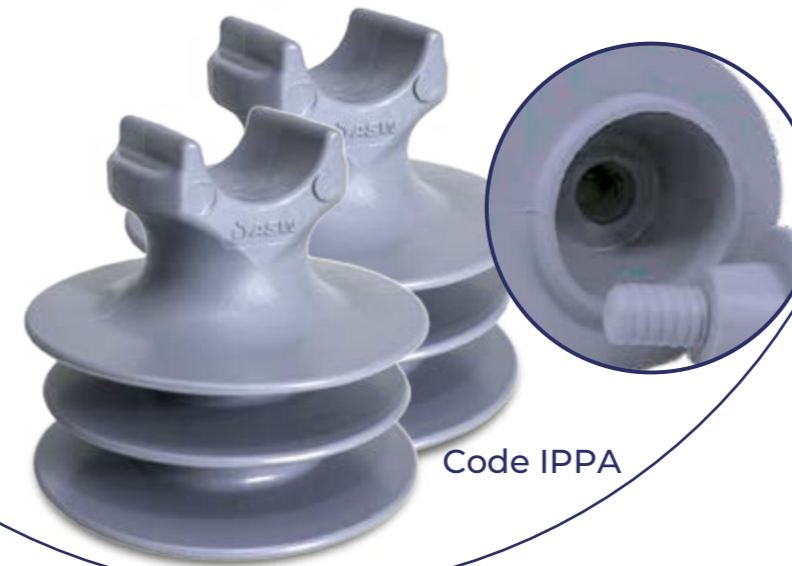
Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15

PRODUCT CHARACTERISTICS

Voltage class (KV)	Escape distance (mm)	Voltage supported under rain (Kv)	Atmospheric impulse withstand voltage (Kv)	Atmospheric impulse drilling in air (Kv)	Dielectric compatibility (kv)	Maximum tensile breaking stress (daN)	Maximum bending rupture stress (daN)
15	470	34	110	230	18	500	1500
35	530	50	170	315	40	500	1500



Polymeric Pin type Insulator - classes of 15kv/25kv/35kv



Code IPPA

DESCRIPTION

Product developed to be used in compact and conventional networks, classes of 15kv/25kv/35kv. The pin insulator has the function of maintaining network isolation.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16327

MATERIAL CHARACTERISTICS

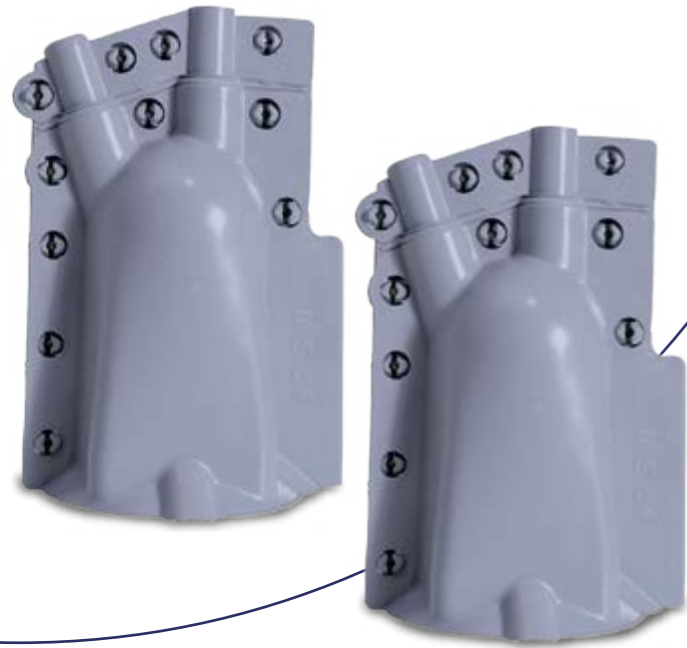
Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15

PRODUCT CHARACTERISTICS

Voltage class (KV)	Escape distance (mm)	Voltage supported under rain (Kv)	Atmospheric impulse withstand voltage (Kv)	Atmospheric impulse drilling in air (Kv)	Dielectric compatibility (kv)	Maximum tensile breaking stress (daN)	Maximum bending rupture stress (daN)
15	470	34	110	230	18	500	1500
35	530	50	170	315	40	500	1500



Protective Covering for Transformer and Equipment Bushings



Code CPBE

DESCRIPTION

Product developed to prevent the occurrence of short circuits, protecting against accidental contact caused by animals or trees. It can be applied to covered cables of class up to 150mm² 35kv. The CPBE can be applied without disconnecting the transformer or equipment.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16094 and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Protective Covering for Transformer and Equipment Bushings



Code CPBTE

DESCRIPTION

Product developed to prevent the occurrence of short circuits, protecting against accidental contact caused by animals or trees. The CPBTE can be applied to covered cables of class up to 150mm² 35kv.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16094 and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Protective Covering for Connector/Stirrup and Live Line Clamp



Code CPLV

DESCRIPTION

Product developed for compact and conventional 15kv power distribution networks, with the function of protecting the clip/stirrup connectors against weather conditions and accidental contacts, preventing the occurrence of disconnection. The CPLV has a previously defined opening and internal locks that prevent the cover from running along the cable, even when using cables with smaller gauges. The product can be applied manually or remotely as it has a socket for the maneuvering rod.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.



MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Protective Covering for Wedge Connector 15KV/25KV



Code CPCC

DESCRIPTION

Product developed for energy distribution networks, with the function of preventing the occurrence of short circuits due to accidental contacts caused by animals and trees. The CPCC is applied over wedge-type connectors, on covered cables of up to 150mm² - class 15kv and 25kv. It has previously defined openings, so the operator simply needs to rest the CPCC on the wedge connector and close its clips (buttonholes).

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

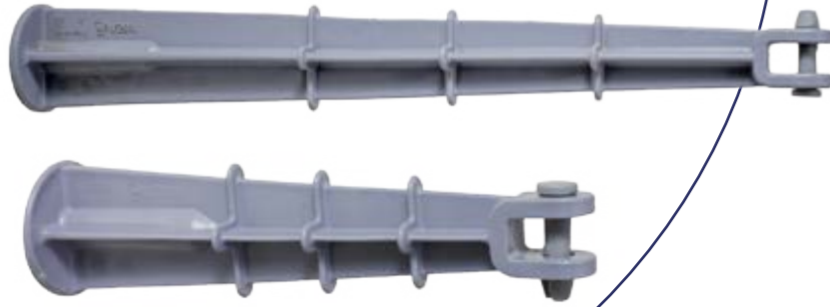


MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Anti-Swing Arm - 15kv/25kv/35kv



Code BRAAB

DESCRIPTION

Product developed for compact energy distribution networks, with the function of maintaining the spacing between the network and the pole (spacer). It also has the function of keeping the network aligned and stable, preventing the cable from swinging in the event of wind, avoiding a short circuit in the network and preventing the formation of an electric arc due to the proximity of covered cables.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING
TO ABNT
NBR 16094
and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15

PRODUCT CHARACTERISTICS

Voltage class (KV)	Leakage distance (mm)	Voltage supported under rain (Kv)	Atmospheric impulse withstand voltage (Kv)	Maximum tensile breaking stress (daN)	Maximum bending rupture stress (daN)
15	480	34	110	150	50
35	530	50	170	150	50



Protective Covering for Grounding Cables:



Code CPCA

DESCRIPTION

Product developed for grounding cables in power distribution networks, protecting against accidental contact with people and animals. The CPCA is fixed to the side of the power pole and tied with a metal strap or steel wire, covering the grounding cable.

MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING
TO ABNT
NBR 16094
and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Protective Covering for Cables



Code CPCN

DESCRIPTION

Product developed to be placed on bare cables, in the conventional primary energy network, to avoid disconnection from the network in heavily wooded regions.

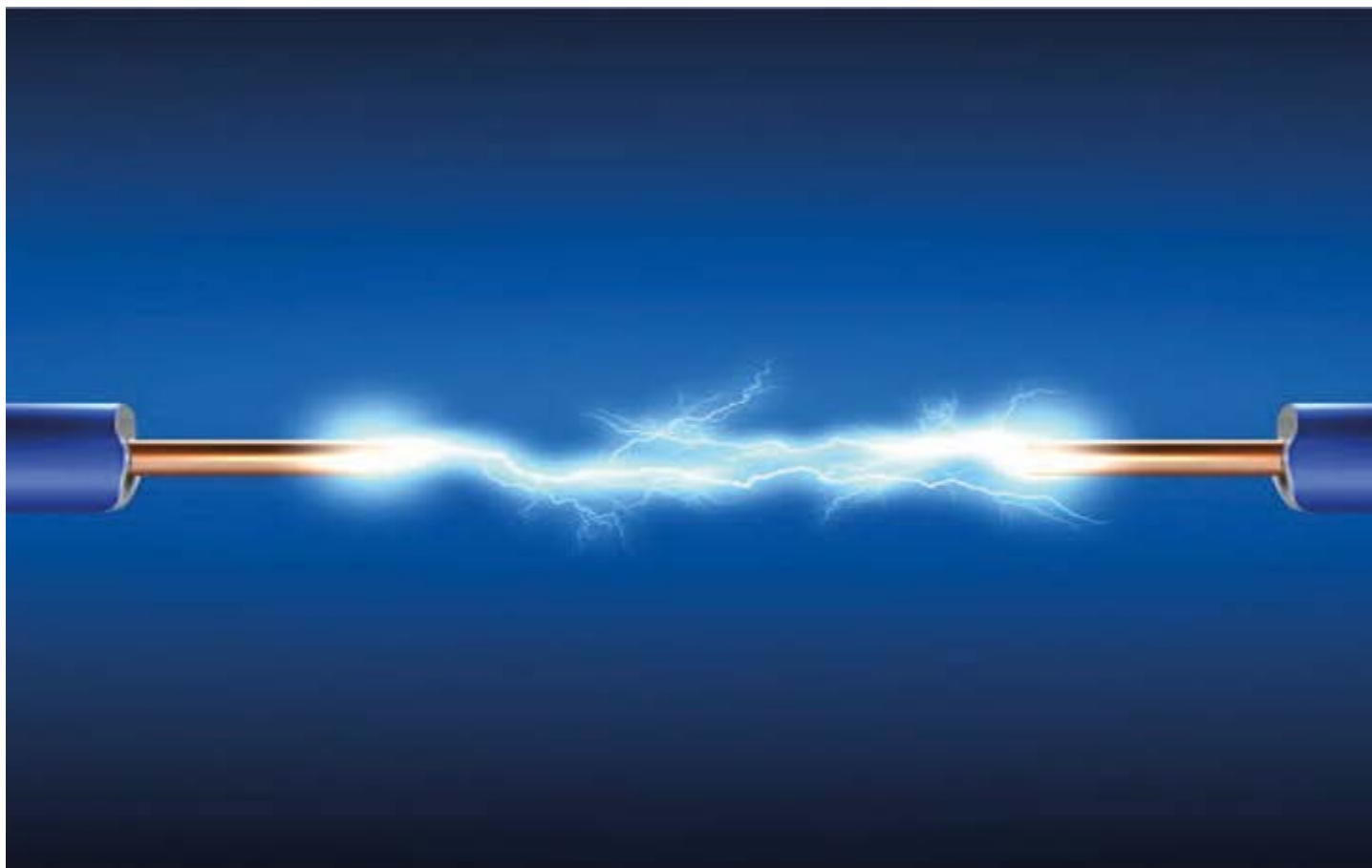
MATERIAL

HDPE, additivated with anti-UV and electrical anti-tracking.

ACCORDING TO ABNT NBR 16094 and 16095

MATERIAL CHARACTERISTICS

Voltage class (KV)	Tensile strength before and after aging in a 21.5 MPA UV chamber	Maximum variation in elongation before and after aging in a 300% UV chamber	Electrical tracking resistance (Kv)	Relative permittivity (Kv)	Water absorption (%)	Embrittlement temperature (°C)
15	max 25%	max 25%	≤ 3	≤ 3	≤ 0,25	≤ 15
35			≤ 3	≤ 3	≤ 0,25	≤ 15



Polymeric Pole made of Polyester Resin Reinforced with Fiberglass.



Code PRFV

DESCRIPTION

The product was designed to be used in electrical energy distribution and transmission networks. Made of polyester resin reinforced with fiberglass, it contains triple protection that guarantees greater durability of the poles against external agents.

MATERIAL

Polyester resin reinforced with fiberglass.

ACCORDING TO ABNT NBR 16989:2021

CUSTOMIZED PRODUCT: Length and dimensions for drilling

COMPOUND CHARACTERISTICS

MATERIAL CHARACTERISTICS	<p>Water absorption: as indicated in ABNT NBR 5310, the result must be <3%.</p> <p>Flammability: according to UL 94, must have a minimum rating of V-1.</p> <p>Resistance to electrical tracking and erosion: according to ABNT NBR 10296, method 2, criterion A 1.5kv.</p> <p>Barcol hardness: the pole will be considered approved if the measurement shows values ≥ 30 barcol.</p> <p>Resistance to flame propagation: a flame must be applied for 1 minute in accordance with ABNT NBR 16989:2021. After removing the heat source, the flame cannot spread and must be extinguished within 30 seconds.</p>
PRODUCT CHARACTERISTICS	<p>Mechanical testing of the compound: before and after aging in a UV chamber:</p> <ul style="list-style-type: none"> - The aging test must be carried out in accordance with ASTM G155, cycle 1, for 2000 hours. - The tensile test before and after aging must be carried out in accordance with ASTM D3039. - The flexural test before and after aging must be carried out in accordance with ASTM D790.



Standard Consumer Entrance Pole/Residential Pole

Code PPRFV

DESCRIPTION

The product was designed to be used as a standard entrance to residences. Made from polyester resin reinforced with fiberglass, it contains triple protection that guarantees greater durability of the pole against external agents.

MATERIAL

Polyester resin reinforced with fiberglass

ACCORDING
TO ABNT NBR
16946:2021

CUSTOMIZED
PRODUCT:
Length and
dimensions
for drilling

COMPOUND CHARACTERISTICS

MATERIAL CHARACTERISTICS	<p>Water absorption: as indicated in ABNT NBR 5310, the result must be <3%.</p> <p>Flammability: according to UL 94, must have a minimum rating of V-1.</p> <p>Resistance to electrical tracking and erosion: according to ABNT NBR 10296, method 2, criterion A 1.5kv.</p> <p>Barcol hardness: the pole will be considered approved if the measurement shows values ≥ 30 barcol.</p> <p>Resistance to flame propagation: a flame must be applied for 1 minute in accordance with ABNT NBR 16989:2021. After removing the heat source, the flame cannot spread and must be extinguished within 30 seconds.</p>
PRODUCT CHARACTERISTICS	<p>Mechanical testing of the compound: before and after aging in a UV chamber:</p> <ul style="list-style-type: none"> - The aging test must be carried out in accordance with ASTM G155, cycle 1, for 2000 hours. - The tensile test before and after aging must be carried out in accordance with ASTM D3039. - The flexural test before and after aging must be carried out in accordance with ASTM D790.



OWN LABORATORIES AND MODERN EQUIPMENTS, CALIBRATED AND CHECKED PERIODICALLY

The tests are carried out by highly qualified professionals to guarantee compliance with quality standards established by ABNT and ensure that the technical specifications of each customer will be rigorously met, demonstrating quality and reliability in all tests performed.




We are homologated in all companies and cooperatives of electrical energy in Latin America.








www.aswbrasil.com.br

R. João da Fonseca, 451 - Parque Industrial,
Mogi Guaçu - SP, 13849-216

 +55 19 99608-5507

 +55 19 3891-9450

 aswbrasiloficial

 asw@aswbrasil.com.br

