

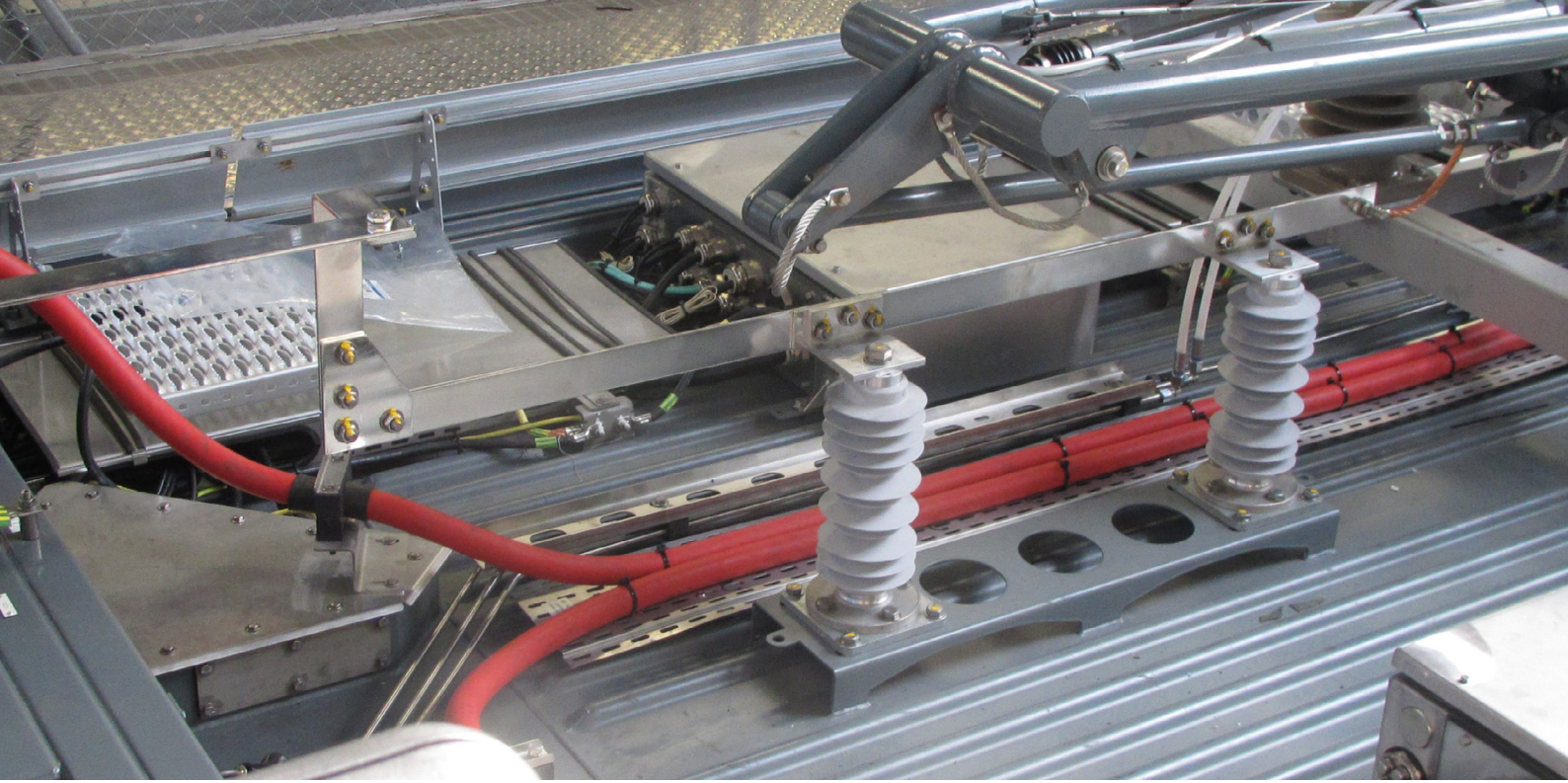
ROLLING STOCK

Silicone post insulator



ALPHA-ET

Current and voltage – our passion



General description

General

The ALPHA silicone rubber post insulators are used for a wide range of high voltage applications. They support the cable terminations, busbars and other equipment of the HV-cabling on trains. Standard post insulators are available in different variations, and for special use they can be adapted to match the customers' requirements.

Special characteristics

The combination of an inner part which is an E-CR glass fibre rod and the outer body made out of silicone rubber creates an ideal combination of the requested rigidity, good dielectric properties and a high protection against environmental impacts. The use of these polymeric materials also results in a lightweight product which makes it ideal for railway application.

To meet the customers' specification, the upper and lower flange can be individually designed.

The use of silicone rubber insulators in railway stock is proven by many applications. They are widely installed on high speed trains, locomotives and EMUs.

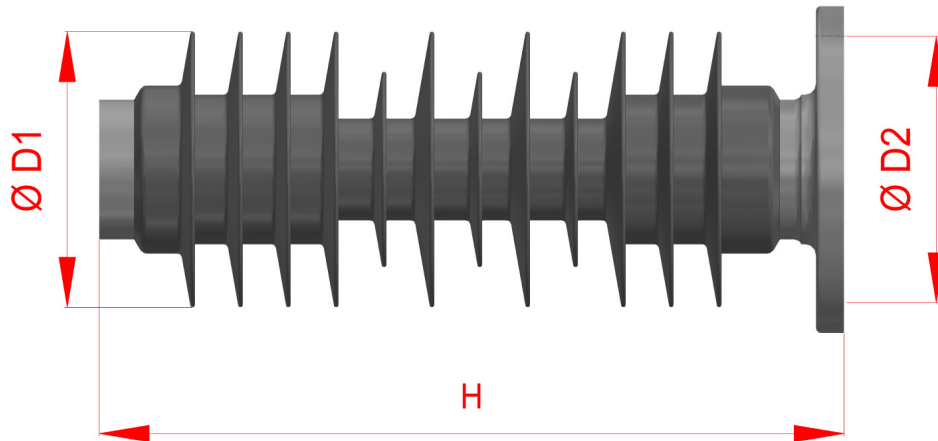
Contamination class

In addition to its outstanding mechanical and electrical characteristics, silicone rubber is distinguished by its ideal properties against atmospheric pollution. For example, the insulation strength is retained in the presence of severe pollution and thaw conditions. A large number of tests have demonstrated the superiority of silicone rubber insulated insulators over other materials such as porcelain and EPDM. Silicone rubber post insulators have been used successfully throughout the world for decades under the most-severe climatic conditions.

Benefits Post Insulators

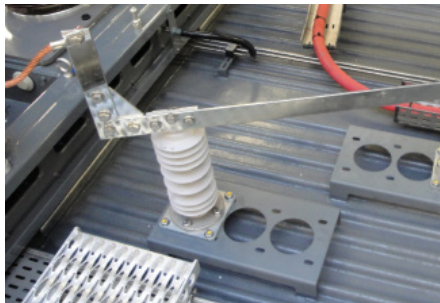
- All silicone post insulators satisfy the requirements of the fire protection standard EN 45545-2:2013.
- The use of silicone rubber guarantees a lightweight and maintenance free product with excellent dielectric properties.
- Highly customizable regarding to system voltage, high, creepage distance and flange design.
- All silicone post insulators are maintenance free.

Technical data



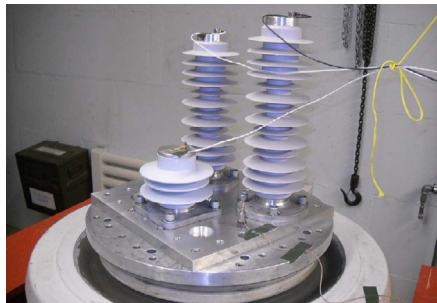
Type		AET 103893	AET 110290	AET 110289
System voltage	kV	3.6	25	36
One minute power frequency withstand voltage, 50 Hz, wet	kV	35/60s	85/72s	95/72s
Lightning impulse withstand voltage, 1,2/50	kV	70	250	250
Creepage distance	mm	293	902	1050
Arcing distance	mm	125	303	344
Specified cantilever load (SCL)	kN	8	3	3
Maximum design cantilever load (MDCL)	kN		1.5	1.5
Specified tension load (STL)	kN	15	45	45
Weight (approx.)	kg	1.4	2.5	2.7
H	mm	120	319	360
D1	mm	138	114	114
D2	mm	114	118	118
Insulator	E-CR glass fibre rod with HTV silicone rubber housing			
End fittings	Aluminium alloy			

Highlights



Reliable and maintenance free

The ALPHA post insulator is totally maintenance free. The used silicone rubber sheds can be used in extreme climatic conditions and high polluted areas. Post insulators have been in use for plenty of years and have been proven by their high reliability. Therefore the post insulator is an ideal product for rolling stock applications.



Type tests performed by ALPHA Elektrotechnik

There have been performed several type tests on the supporting insulators:

- Lightning impulse voltage tests acc. to IEC 62231
- Wet power-frequency voltage tests
- Fire protection test according to EN 45545-2
- Mech. shock-and vibration test acc. to IEC 61373
- Environmental tests acc. to IEC 60068-2



References

- Alstom Transportation: KZ4A, KZ8A, Coradia, TGV Maroc
- Hitachi Rail: IEP, WOE
- Bombardier: Talent
- Hyundai Rotem: Tunis project



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ALPHA Elektrotechnik AG

Niklaus-Wengstrasse 64
2540 Grenchen / Switzerland

+41 32 3328700
+41 32 3312679
mail@alpha-et.ch
www.pfiffner-group.com/aet

Member of PFIFFNER Group

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ROLLING STOCK



DISCONNECTORS

