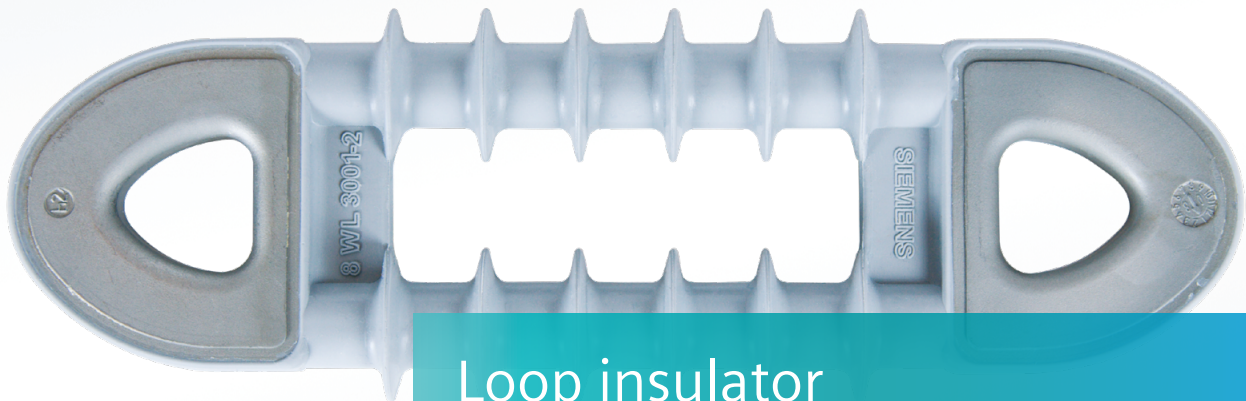


SIEMENS

Ingenuity for life



Loop insulator

Sicat 8WL3001-2 for contact line systems
in mass transit

[siemens.com/rail-electrification](https://www.siemens.com/rail-electrification)

Sicat® 8WL3001-2 loop insulators are composite insulators to EN 50151. They insulate the voltage-carrying parts of contact line systems against each other and against earth. They must therefore comply with electrical and mechanical requirements.

Features

- Plastic surface of the composite insulator is dust- and water-repellent and is resistant to ultraviolet rays
- High mechanical and electrical strength as well as high breakdown strength
- Long service life and permanent batch identification
- Fracture-proof and resistant to vandalism due to use of suitable materials
- Flexible in use due to slim-line geometry, optimum thimble shape and materials which are neutral in respect of their combinations
- Safe and easy installation due to silicone-coated thimble walls

Design

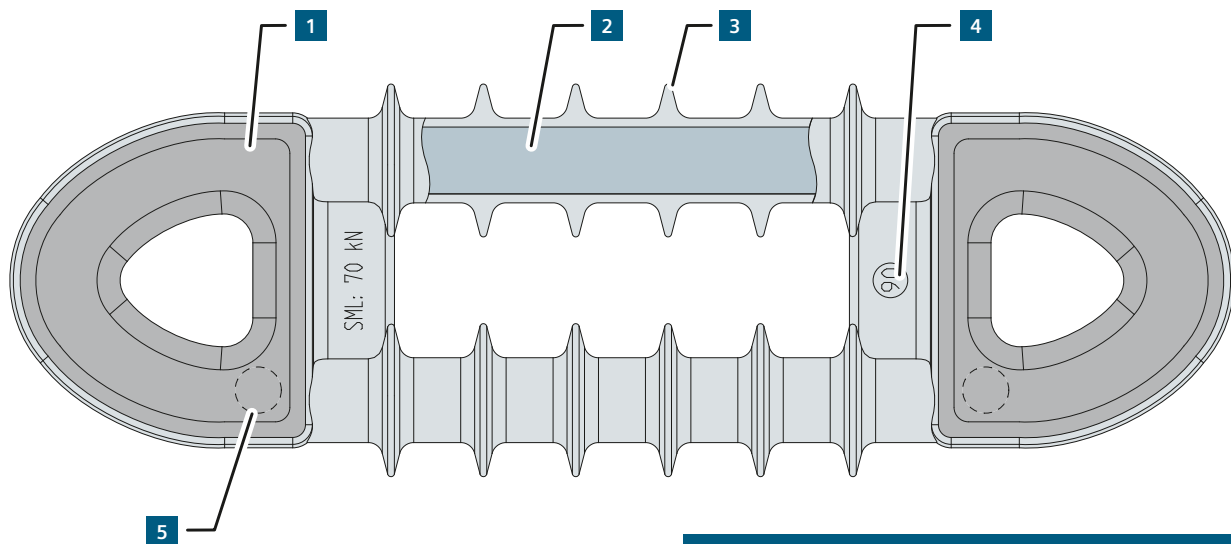
The loop insulators consist of the following components:

- Loop insulator core made of glass-fiber reinforced plastic (GRP, boron-free ECR glass)
- Sheds and coating made of silicone rubber
- Thimbles made of precision-cast stainless steel

Glass-fibers impregnated with epoxy resin are wound around thimbles. After compression, the resulting loop is hot-cured and, in an injection molding process, enclosed with the coating and the sheds made of high temperature vulcanized silicone rubber.

Batch identification

The silicone coating of the loop insulator bears a permanent batch identification mark in accordance with standard IEC 61109. It indicates the year and the quarter in which the insulator was made. The thimbles are also provided with a corresponding batch identification in accordance with EN 50119.



- | | | | |
|---|------------------------|---|--|
| 1 | Thimble | 4 | Batch identification on silicone coating |
| 2 | Core | 5 | Batch identification on thimble |
| 3 | Sheds and loop coating | | |

Design of loop insulator Sicat 8WL3001-2

Function

The longitudinally dense core serves as inner insulation and is suitably dimensioned so as to safely absorb the mechanical forces which occur. The silicone coating forms the continuous outer insulation layer and provides the

necessary creepage distance. This coating protects the core against environmental influences.

The loop insulators are only suitable for applications involving tensile loads.

System integration

The stainless steel thimbles of the loop insulators are suitable for applications calling for the variable installation of connecting fittings with pins or of cables with thimbles (made of freely selectable materials).

In addition to these methods of connection, the patented thimble design enables two thimbles to be installed at a relative angle of approx. 90° together with 35 mm² BzII cables to DIN 48201. This ensures an architecturally inconspicuous method of overhead contact line design.



Loop insulator, Stadtwerke Augsburg

Technical data

Technical data		
Nominal voltage	[kV DC]	1.5
Weight	[kg]	0.31
Distance to center of pin		
– Pin Ø 19 mm	[mm]	150
– Pin Ø 16 mm	[mm]	approx. 155
– Pin Ø 13 mm	[mm]	approx. 159
Specified mechanical load (SML)	[kN]	70
Permissible operating load (OML) when connected with		
– Pin Ø 19 mm	[kN]	23
– Pin Ø 16 mm	[kN]	20
– Pin Ø 13 mm	[kN]	12
– Thimbles for wires made of BzII or stainless steel	[kN]	max. 23
Minimum creepage distance	[mm]	150
Minimum clearance in air	[mm]	108
Power frequency withstand voltage, wet	[kV]	31
Lightning impulse withstand voltage	[kV]	84

Materials	
Insulator body	glass-fiber reinforced plastic with ECR glass
Insulator coating	silicone, high temperature vulcanized
Thimbles	stainless steel

Tests and standards

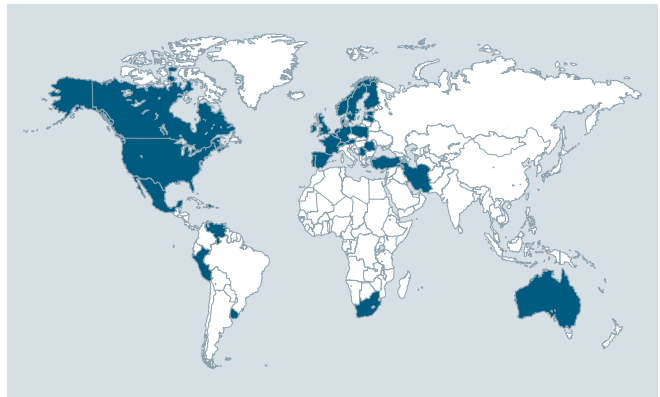
- Loop insulator acc. to EN 50151
- Insulation coordination acc. to EN 50124
- Design test acc. to IEC 61109

The loop insulators have been type-tested acc. to the standard IEC 61109: 2008:

- Lightning impulse withstand voltage
- Power-frequency withstand voltage, wet
- Mechanical load-time test

References

Since market introduction in the year 2006 more than 282,000 Sicat 8WL3001 type loop insulators have been delivered worldwide and are successful in use (status as of September 2017).



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Sicat 8WL3001-2 / Product information
No. A6Z08100028529 / Version 2.1.2

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