

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

## Loop insulator

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

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

Technical data		
Nominal voltage	[kV DC]	1.5
Weight	[kg]	0.3
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

## 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.

## Function

The longitudinally dense core serves as inner insulation and is suitable 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.

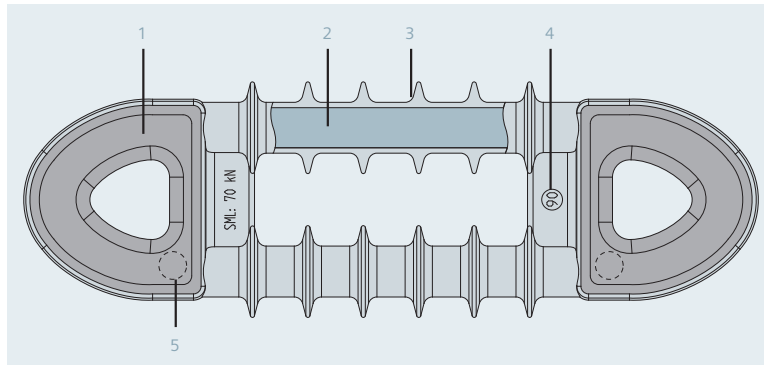
## Batch identification

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.

## Installation

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 mm<sup>2</sup> BzII cables to DIN 48201. This ensures an architecturally inconspicuous method of overhead contact line design.



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

## Design of loop insulator Sicut 8WL3001-2

## Standards and tests

- Loop insulator to EN 50151
- Insulation coordination to EN 50124
- Design test according 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

## Technical data

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

Siemens AG  
Infrastructure & Cities Sector  
Smart Grid Division  
Rail Electrification  
Mozartstraße 33b  
91052 Erlangen  
Germany

electrification.mobility@siemens.com  
www.siemens.com/rail-electrification

© Siemens AG 2012

Product Information / Version 2.1.1 / No. A6Z08100028529

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. If not stated otherwise, we reserve the right to include modifications, especially regarding the stated values and dimensions.