

# Fiber-insulated wires

## CuNi 2Silix® VSI round

- **Nickel plated round copper OF1 wire insulated with glass yarn**
- **Winding wire with excellent thermal and chemical resistance**
- **Temperature Index 200**

### General description

SILIX®-covered nickel-plated bare round wires are insulated with a double covering of glass fibers (SILIX®) and impregnated with silicone (V Si) based varnish.

Users should consider that a silicone impregnation gives a lower level of adhesion than epoxy or polyetherimide impregnations (see IEC 60317-50 standards).

### Application

- Motors and magnet coils subjected to constantly high thermal and mechanical stress in Nuclear environment.
- Thermo-elements.

### Material

**Conductor:** CU-OF1 (CW007A), nickel plated 5 my thickness.

**Insulation:** 2 layers of glass-fibers, impregnated with Silicon coating varnish.

**Product range:** 0.6 to 6 mm

The standard diameters of the conductors (nominal diameter) comply with standard IEC 60317-0-1.

### Insulation increase:

Nominal conductor diameter	Type	Minimum insulation increase	Maximum external dimension
0.65 mm	FIN	0.13 - 0.20 mm	0.85 mm
1.00 mm	FIN	0.17 - 0.21 mm	1.21 mm
1.15 mm	FIN	0.17 - 0.21 mm	1.36 mm
1.70 mm	RENF	0.17 - 0.21 mm	1.95 mm

### Elongation at break:

Nominal conductor diameter	Minimum elongation at break %
0.65 mm	24 %
1.00 mm	25 %
1.15 mm	26 %
1.70 mm	28 %

### Standards

SILIX®-covered nickel-plated bare round copper wires meet the requirements of IEC Publications 60317-0-6 and 60317-50 (TI 200).

The test methods are based on IEC Publication 60851:

- 60851-1 General
- 60851-2 Definition of dimensions
- 60851-3 Mechanical properties
- 60851-4 Chemical properties
- 60851-5 Electrical properties
- 60851-6 Thermal properties

### Advantages

- Excellent resistance to high temperatures in continuous Mode.
- Good resistance to mineral oil and corrosive vapors.
- Good resistance to abrasion and scraping.

### Order Data

Quantity, Designation, Supply Form e.g.:

The designation shall comprise:

Nominal dimension in mm:	0.65 mm
Conductor material:	CuNi OF1
Designation of the insulation:	2 Silix VSI FIN
Reel type:	e.g. DIN 355

Example of complete order:

50 Kg CuNi2 Silix VSi FIN Ø 0.65 mm D355

<b>Mechanical properties</b>			<b>Standard</b>
Spring back angel for diameter > 1.6 mm	°	≤ 5	IEC 60851-3 Test 7
Flexibility Mandrel winding	10 x d	No cracks	IEC 60851-3 Test 8
Adherence of elongation	10 %	No loss of adhesion	IEC 60851-3 Test 8
<b>Electrical properties</b>			
Breakdown voltage	V / mm	2200	IEC 60851-5 Test 13
<b>Thermal properties</b>			
Heat shock 30 min at 200°C	12 x d	No cracks	IEC 60851-6 Test 9

**Appearance**

Slight color variations are raw material or process-related and have no influence on the technical properties of the wire.

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