

# Taped and covered wires

## 2FO 100 GL 300

▪ **Polyimide-Film taped and Glass-Yarn covered copper wire**

**Description :**

The winding wire 2FO 100 GL 300 is a rectangular copper wire wrapped tightly with 2 layers of Kapton®-(Polyimide)-tape with 50 % overlap. The tape is coated on one side with a Teflon®-(FEP)-adhesive. A suitable heat treatment melts the thermoplastic FEP-coating and thus bonds firmly the overlapping films. This nonporous, highly flexible insulation of superior thermal and chemical resistance is finally covered with a single layer of Polyester-imide varnished Glass Yarn (special alkali-free E-Glass) to form a covering of excellent mechanical properties with high abrasion resistance and good bonding strength.

**Dimensions :**

Rectangular copper according to IEC 60317-0-2.

**Insulation Construction:**

Type	Construction
FO 100	Lapping with one side FEP-coated Polyimide film, thickness 0.04 mm, overlap 50 %
GL 300	Covering with PEI-impregnated Glass yarn

**Standards:**

Polyimide-film insulated rectangular wires meet the requirements of IEC 60317-44, Class 220. Glass-fibre covered rectangular wires with thermal Class 180 meet the requirements of IEC 60317-31.

**Applications:** 2FO 100 GL 300 insulated wires are - due to their superior thermal, mechanical, dielectric and chemical properties - used especially where traditional wire insulations are inadequate.

**Processing instructions :**

Because of the excellent adherence of the insulation to the conductor, the low friction properties and mechanical toughness, such insulated wires can be processed on all common types of winding and coil forming machines.

- Nevertheless, when forming coils, the use of hard or sharp-edged tools is to be avoided.
- The best method for stripping the insulation of these wires is the mechanical one (using hand cutting tools or rotary knives).

		Value	Test norm
<b>Increase in insulation</b>			
Thickness increase due to insulation	mm	0.45 +/- 0.05	
<b>Mechanical properties</b>			
Elongation at break	%	min. 30	IEC 60851-3, Test 6
Springiness	°	max. 5.5	IEC 60851-3, Test 7
Adherence after elongation	10 %	no loss of adhesion	IEC 60851-3, Test 8
<b>Electrical properties</b>			
Breakdown voltage			
Edgewise bending 6 x width	V	min. 5000	IEC 60851-5, Test 13
Flatwise bending 6 x thickn.	V	min. 5000	
Nominal resistance D.C. at 20 °C	Ohm.mm <sup>2</sup> /m	max. 0.01724	IEC 60851-5, Test 5
<b>Thermal properties</b>			
Heat shock at 240°C / 30 min.			
Edgewise bending 6 x width		no cracks	IEC 60851-6, Test 9
Flatwise bending 6 x thickn.		no cracks	

**Order data :**

Quantity, Designation and Mode of Supply

The designation shall contain:

Type of wire	rectangular (DF)
Nominal dimension (width x thickn.) e.g.	4.00 x 2.00 mm
Conductor material	Cu
Designation of the insulation	2FO 100 GL 300

The mode of supply shall indicate the type of reel required, e.g. cylindrical reel according to IEC 60264-2 (identical with DIN 46399) or other types.

Example of complete order:

500 kg DF 2FO 100 GL 300 4.00 x 2.00 mm, reels DIN 355

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