

Enamelled wires

Thermex 220® Alu FL

- **Enamelled winding wire with excellent mechanical, thermal and chemical properties**
- **Insulation based on polyamide-imide enamel**
- **Temperature Index 220**

General description

THERMEX® 220 rectangular-shaped wires are enamelled with an excellent thermal base insulation based on polyamide-imide. The polyamide-imide coating ensures outstanding mechanical and chemical properties of the insulation.

Application

- Windings in highly stressed AC and DC electrical machines of class H ... 200

Conventional Types

Rectangular aluminum wires:

- Thickness: 1,60 to 7,00 mm
 - Width: 3,35 to 18,00 mm
 - Cross-section: 10,00 to 100,00 mm²
 - Coating class: Grade 1 and Grade 2
- Dimensions outside of this range on request

The standard dimensions of the conductors (nominal dimension) and the tolerances comply with the standard IEC 60317-0-9.

Standards

THERMEX® 220 Alu flat wires meet the requirements similar to IEC 60317-69 (we use pure Polyamide-Imide). 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

Because of their high thermal stability and their good mechanical and thermal properties THERMEX® 220 rectangular wires are particularly suitable for coils subjected to constantly high temperatures and mechanical stresses.

Order Data

Quantity, Designation, Supply form e.g.:

The designation shall comprise:

Nominal dimension in mm: 10,00 x 4,00
 Conductor material: Alu
 Coating class: Grade 2 (G2)
 Designation of the insulation: THERMEX 220
 Reel type: e.g. DIN 500

Example of complete order:

2000 kg FL THERMEX 220 Alu G2 10,00 x 4,00 mm, reels DIN 500

Appea

	unit	value	Test standard
Mechanical properties			
Insulation increase Grade 1	mm	0.06 - 0.11	IEC60851-2
Insulation increase Grade 2	mm	0.12 - 0.17	IEC60851-2
Elongation at break thickness up to 2.5 mm	%	≥ 15	IEC60851-3 test 6
Elongation at break thickness above 2.5 mm	%	≥ 15	IEC60851-3 test 6
Springiness	°	≤ 5.0	IEC60851-3 test 7
Adherence after elongation	10 %	No loss of adhesion	IEC60851-3 test 8
Flexibility - edgewise bent on mandrel Ø 2 x width		no cracks	IEC60851-3 test 8
Flexibility - flatwise bent on mandrel Ø 2 x thickness		no cracks	IEC60851-3 test 8
Electrical properties			
Break down voltage Grade 1	V	≥ 1000	IEC60851-5 test 13
Break down voltage Grade 2	V	≥ 2000	IEC60851-5 test 13
Thermal properties			
Heat shock 30 min /240 °C mandrel Ø 1 x width		no cracks	IEC60851-6 test 9
Thermal endurance	TI	220	IEC60172

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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