Enamelled wires

VT THERM 120° FL Copper

- **Enameled winding wire with excellent mechanical, thermal and chemical properties**
- **Insulation based Polyvinyl formal**
- **Temperature Index 120**

General description
VT THERM 120° rectangular-shaped copper wires are insulated with a Polyvinyl-formal magnet wire enamel, with excellent chemical resistance, flexibility and very good adhesion.

Application
Flat wire to produce transposed cable (CTC).

Conventional Types
Rectangular copper wires:
- Thickness: 1,10 to 4.5 mm
- Width: 3.8 to 14.00 mm
- Cross-section: 4 to 70 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 60317-18.

Standards
VT THERM 120° rectangular-shaped copper wires meet the requirements of **IEC 60317- 18.**

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
High thermal stability and good mechanical properties VT THERM 120 rectangular wires are particularly suitable for coils subjected to constantly high temperatures and mechanical stresses with an optimal resistance to the mineral oil and silicon oil. Very good characteristics for all kind windings.
Thermal index is 120 IEC 60172.

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

	Unit	Value	Test norm
Thermal properties			
Heat shock 30min / 155°C Mandrel bending flatwise on 6xthickness		No cracks	IEC 60851-6
Mechanical properties			
Insulation increase Grade 1	mm	0,06 – 0,11	IEC 60851-2
Insulation increase Grade 2	mm	0,12 – 0,17	IEC 60851-2
Elongation at fracture thickness up to and including 2.5 mm	%	Min.30	IEC 60851-3
Elongation at fracture thickness above 2.5 mm	%	Min.32	IEC 60851-3
Springiness	degree	Max.5	IEC 60851-3
Flexibility and adherence (size up to and including 10mm width) Mandrel bending edgewise on mandrel Ø 2 x width		No crack	IEC 60851-3
Flexibility and adherence (size over 10mm with) Mandrel bending edgewise on mandrel Ø 3 x width		No crack	IEC 60851-3
Flexibility and adherence Mandrel bending flatwise bent on mandrel Ø 2 x thickness		No crack	IEC 60851-3
Flexibility and adherence Stretching by 20%		Loss of adherence less than 1xwidth	IEC 60851-3
Electrical properties			
Breakdown Voltage Grade 1 (room temperature)	V	≥ 1000	IEC 60851-5
Breakdown Voltage Grade 2 (room temperature)	V	≥ 2000	IEC 60851-5