

Fiber-insulated wires

Daglas enameled round

- **Enameled round copper wire insulated with a glass/polyester fiber blend**
- **Winding wire with excellent thermal and mechanical properties**
- **Temperature Index 180 or 200**

Nominal bare wire diameter d (mm)	Max. increase in Dimension (mm)	
	Daglas covering over grade 2 enameled conductor	
	Single covering	Double covering
0.80 to ≤ 2.40	0.20 to 0.23	0.28 to 0.32
2.40 to ≤ 3.50	0.21 to 0.24	0.33 to 0.36
> 3.50	0.23 to 0.26	0.33 to 0.36

General description

THERMEX® 200 enameled round wires are insulated with a single or double covering of a glass and polyester fibers blend, available in three different versions:

V180: impregnated with modified polyesterimide varnish.

V180K: impregnated with modified polyesterimide varnish in a thermal-adhesive version.

VSi: impregnated with silicone-based varnish.

Silicone impregnation is not available in the thermal-adhesive version.

Application

- Windings of motors up to 6 kV
- Motors and magnet coils subjected to constantly high thermal and mechanical stress

Conventional Types

Covered enameled copper wires THERMEX® 200 Grade 2, insulated with:

- 1 covering layer (1Daglas)
- 2 covering layers (2Daglas)
- optional: varnish impregnation
- coating varnishes: polyesterimide (also as 'B'-staged varnish), or silicone.

Conductor diameter: 0,30 to 6,00 mm

The standard diameters of the conductors (nominal diameter), the tolerances and the overall diameters of the enameled wire comply with the IEC standard 60317-0-10

Build Criteria Round Wire

Standards

DAGLAS-covered round enameled copper wires meets the requirements of IEC-Publications 60317-0-10 and 60317-70-1 (T1155 fused, without impregnation)
 60317-71 (T180) --> V180
 60317-72 (T1200) --> VSi

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

- Covering with high mechanical and bonding strength
- Great resistance to abrasion and scraping
- Good resistance to impregnating varnish solvents (for more information, consult our customer service)

Processing Instructions

Can be processed without reservation under normal working conditions. For the items with a thermal adhesive bond coat (K), the storage time is limited to 1 year at room temperature and 60 % relative humidity.

Order Data

Quantity, Designation, Supply Form e.g.:

The designation shall comprise:

For round shape:	RD
Enameled wire:	Thermex200 Grade 2
Designation of the yarn covering:	1Daglas V180
Nominal dimension in mm:	2.24mm
Reel type: e.g.	DIN 355

Example of complete order:

2000 Kg RD TX200 G2 1Daglas V180 2.24mm D355

		TX200 G2 1 or 2Daglas not impregnated	TX200 G2 1 or 2Daglas V180 (K)	TX200 G2 1 or 2Daglas VSi	Test standard
Mechanical properties					
Springiness /diameter above 1.60 mm	°	<= 5.5	<= 5.5	<= 5.5	IEC60851-3 test 7
Flexibility - Mandrel winding 8xd		no cracks	no cracks	no cracks	IEC60851-3 test 8
Adherence after elongation	20 %	no loss of adhesion	no loss of adhesion	no loss of adhesion	IEC60851-3 test 8
Shear strength (for V180K only)	N/mm ²	na	>= 3	na	Delle test 1.47.14
Electrical properties					
Breakdown voltage after winding 8xd (1x Daglas)	V	>= 2750	>= 2750	>= 2750	IEC60851-5 test 13
Breakdown voltage after winding 8xd (2x Daglas)	V	>= 3000	>= 3000	>= 3000	IEC60851-5 test 13
Thermal properties					
Heatshock 30 min / 180 °C after winding 10xd		no cracks			IEC60851-6 test 9
Heatshock 30 min / 200 °C after winding 10xd		na	no cracks	no cracks	IEC60851-6 test 9
Thermal endurance	TI	155	180	200	NEMA MW 1000

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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