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Flat Wire Insulation Chart

Description	Fiber-Insulated Winding Wires			Tape and Film Insulated Winding Wires			
	Silix	Daglas	Cotton	Samica®	Aramide Paper	Paper	Polyimide
Insulating Material	E-glass fiber	Glass/Polyester fiber blend	Cotton	Tapes based on Mica Paper	Tapes based on aromatic Polyamide paper e.g. Nomex®	Tapes based on Kraft paper Thermo-stabilized paper Impregnated Paper (Prepreg)	Polyimide foils covered with Teflon FEP e.g. Kapton®
Type of Insulation	Single or double lapping or braiding	Single or double lapping fused	Single or several layers of lapping or braiding	Taping one or several layers	Taping one or several layers Bonded taping Bonded longitudinal taping	Taping one or several layers	Fused taping one or several layers
Impregnation	Polyesterimide varnish Epoxy Varnish B-Stage Epoxy Varnish Silicone Varnish Polyimide Varnish	Without impregnation Polyesterimide varnish Epoxy Varnish B-Stage Epoxy Varnish Silicone varnish Polyimide varnish	N/A	N/A	N/A	N/A	N/A
Temperature Index*	155 ... 220	155 ... 180	90	155 ... 180	180	90 ... 120	220
Conductor Material**/Dimensions: Bare copper round*** Bare Copper rectangular Enameled copper round Enameled copper rectangular	> 0.20 mmØ acc. to IEC 60317-0-2 Thermex 305, 306, 307, 308 > 0.20 mmØ Thermex 306, 307, 308	> 0.20 mmØ acc. to IEC 60317-0-2 Thermex 305, 306, 307, 308 > 0.20 mmØ Thermex 306, 307	> 0.20 mmØ acc. to IEC 60317-0-2 Duroflex >0.50 mmØ Duroflex	Seldom used acc. to IEC 60317-0-2 Seldom used Thermex 306, 307	> 0.50 mmØ acc. to IEC 60317-0-2 extended to a width of 20 mm Thermex 305, 306 Thermex 306, 307	> 0.25 mmØ acc. to IEC 60317-0-2 extended to a width of 20 mm Duroflex >0.50 mmØ Duroflex	0.30 mm ... 5.00 mmØ acc. to IEC 60317-0-2 Thermex 306, 307, 308 >0.30 mmØ Thermex 306, 307, 308
Common Uses	Roebel bars Rotating electromachines Dry-type transformers Thermo-couples	Roebel bars Rotating electromachines Dry-type transformers Thermo-couples	Oil-filled transformers	High voltage machines	Dry-type transformers Reactance coils Pole coils Railway transformers	Oil-filled transformers	Traction motors Rolling mill motors Motors used in the mines Motors for the aviation and marine industries

*The temperature index is derived from the test carried out according to IEC Publ. 60172. It gives an indication of the behavior of the wires when exposed to heat, but it does not necessarily equal the service temperature at which the wire can be used.

**In addition to copper, other conductor materials, such as aluminum, nickel-plated or tinned copper, superconductors, oxygen-free copper and alloys are possible.

***Instead of round or rectangular wires, other types, such as litz wires, leads and hollow conductors can also be insulated.