

Winding Wires for E-Mobility



Winding Wires with Special Properties

State-of-the-art electric motors for EV's, PHEV's and HEV's require new and sophisticated solutions – especially in the field of stator winding and insulation materials.

GG – as a specialist for flat insulated copper winding wires over decades – developed different solutions suitable for various applications, voltage levels and other special requirements.

Available Solutions

ENAMELED FLAT WIRES

- Smooth, even surface
- Good adhesion on copper surface
- Almost pin-hole and blister free (< 1 fault / 1000m)



EXTRUDED PEEK INSULATED FLAT & ROUND WIRES

- Smooth, even surface
- Excellent adhesion on copper surface **without** any further bonding layer
- High flexibility of insulation material
- Very good aging and PD resistance



EXTRUDED POLYIMIDE INSULATED FLAT & ROUND WIRES

- Smooth, even surface
- Excellent adhesion on copper surface **without** any further bonding layer
- High flexibility of insulation material
- Very good aging and PD resistance

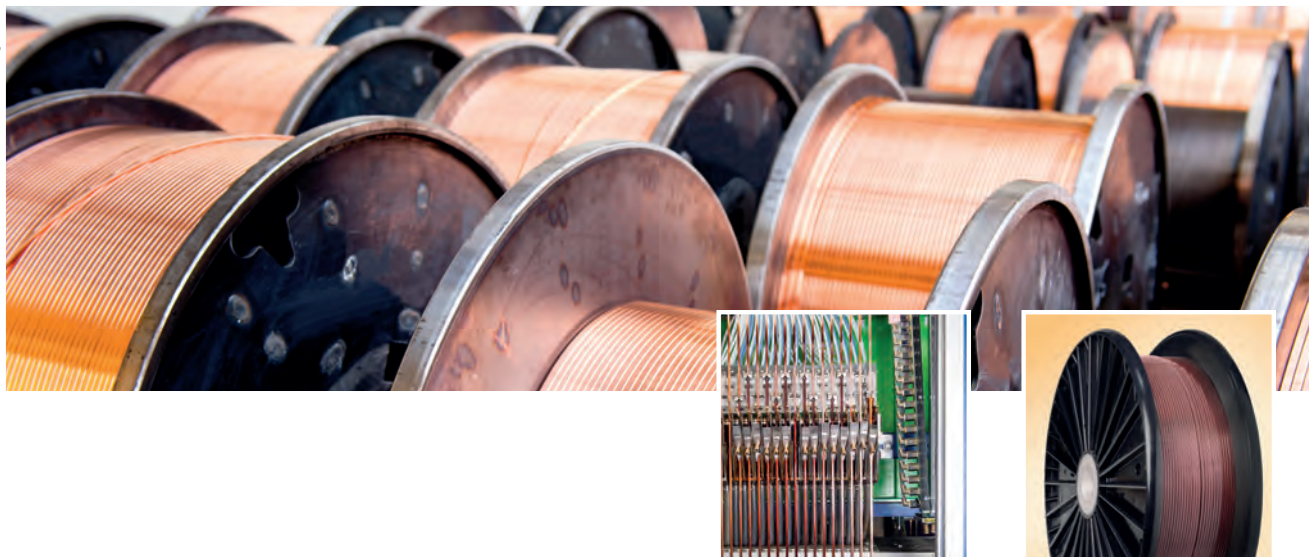


POLYIMIDE-FILM INSULATED FLAT & ROUND WIRES

- Good adhesion on copper surface
- Proven insulation material
- Standard insulation material in traction motors for decades



E-Mobility



Comparison of properties of different insulation systems

Property	Enamel	PEEK	Extr. Polyimide	Taped Polyimide
Surface	even, closed	even, closed	even, closed	un-even, with tape edges
Temperature class	200	240-260	240	240
Possible Coating Thickness	max. 100µm	max. 300µm	max. 300µm	max. 230µm (two layers)
Flexibility in Coating Thickness	+	++	++	~
Minimum Bending Diameter	min. 2x bare wire width/thickness	min. 1x bare wire width/thickness	min. 1x bare wire width/thickness	min. 2x bare wire width/thickness
Electr. Properties	+	++	++	++
Aging Resistance	~	++	+++	+
Corona Resistance	-	+++	+++	+
Possible Wire Shape	only Flat	Flat & Round	Flat & Round	Flat & Round

Detailed information regarding oil- and PD-resistance may be provided on request.



innovativ - kompetent - verlässlich

innovative - competent - reliable



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