NSW
a General Cable company

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Connecting the World

Winding Wires for Submersible Motors

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As the name says, submersible motors are made to function under water (or other fluid) and the winding wires used in them accordingly require high-quality insulation which is completely impervious to liquids of any kind.

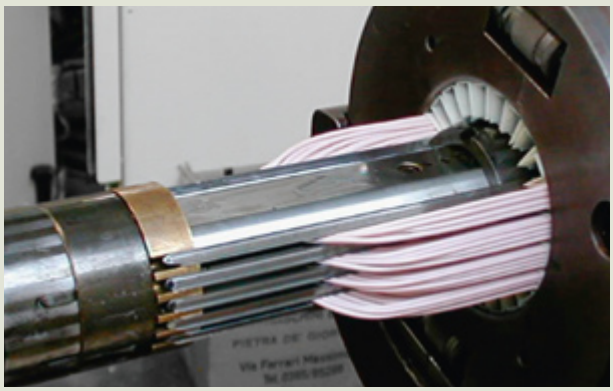
NSW winding wires are specially designed to meet the requirements of this application. They have proven their durability and reliability over many decades and ensure trouble-free operation and long motor life.

NSW winding wires consist of a solid or multi-stranded bare copper conductor insulated by means of a plastic sheath either made of PVC or PE2.

PVC-insulated winding wires can be used for voltages up to 1,000 V and at temperatures up to 75 °C*. PE2-insulated winding wires are generally used in submersible motors operating at higher voltages and at temperatures of up to a maximum of 90 °C*. The increased resistance to heat is achieved by cross-linking the polyethylene.

The thickness of the sheath wall is a function of the operating voltage. For voltages of 3 kV and more, NSW recommends the use of a semiconducting layer (HL) between the copper conductor and the insulating sheath. The surface of winding wires which are insulated with PE2 have a thin sheathing of polyamide (PA) for surface protection.

**** The temperature specifications are valid for winding wires under normal mechanical stress. The temperatures must be reduced if necessary in the case of winding wires subjected to pronounced mechanical loading.***



Automatic winding process for standard motors with PVC-insulated winding wires

Solid Copper Conductors

** Standard Insulation*

Stranded Copper Conductors

** Standard Insulation*

Conductor Design

› Solid Conductor

Diameter	0.6 to 4.6 mm
Cross section	0.28 to 16.60 mm^2

› Stranded Conductor

Diameter	4.5 to 17.1 mm
Cross section	12.10 to 150.00 mm^2

Insulation Wall Thickness

Depending on dimensions and operating voltage	0.3 to 3.5 mm

PA-Sheathing for PE2-Insulated Wires

Depending on outer PE2 diameter	0.1 to 0.3 mm

Semiconducting Layer (HL) between Copper Conductor and PE2 Insulation

(for high voltage applications)	0.1 to 0.3 mm

Further dimensions or winding wires for special applications are available on request. Please contact us.

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