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## SHBond® WD210

- selfbonding enamelled round cu.wire, bondable
- insulated with theic-mod. polyesterimide
- plus Amide-Imide overcoat
- plus bonding layer aromatic polyamide
- class 200

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## Attributes

"SHBond® WD210" is a highly thermo-resistant self-bonding enamelled copper wire of heat performance class N. With this wire the excellent resistance and insulation properties of SHTherm® 210 - Dualcoat are combined with the special application possibilities of an additional bonding layer which is based on mod. aromat. Polyamide and which enables the production of heat bonded wire windings. Using this type of thermo-setting wire the heat bonding process is economic, as it can be executed within seconds and can support automatic processing. It is not harmful to the environment. Heat bonded windings show excellent thermal and mechanical stability and high resistance to climatic demands and many chemical agents. Sophisticated process technology and process setting ensure easy mouldability, good elongation and excellent insulation properties.

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## Application

Drives for household appliances, pole windings, wire wound coils, power tools

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## Standards

IEC / DIN EN 60317-38

NEMA MW 102-C

UL approved

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## Delivery forms

Grade 1: 0.250 - 1.000 mm

Grade 2: 0.300 - 1.000 mm

(> 1.250 mm on request)

Typical properties of enamelled round copper wire 0.500 mm, with insulation film grade 1B

| Mechanical                  | Unit of measure | Set value                  | Actual value (typ.)        |
|-----------------------------|-----------------|----------------------------|----------------------------|
| Outer diameter with varnish | mm              | min. 0.541 - max. 0.568    | as set value               |
| Bare wire diameter          | mm              | 0.495-0.505                | as set value               |
| Elongation and adhesion     |                 | mandrel diameter: 0.500 mm | 1 x d /10 % pre-elongation |
| Scrape resistance           | N               | ≥ 3.950                    | ≥ 7.500                    |
| Pencil hardness of varnish  |                 | H                          | 3H / 5H                    |
| Elongation at break         | %               | ≥ 28                       | ≥ 38                       |
| Coefficient of friction     | μ               | /                          | ≤ 0.140                    |

| Thermal  | Unit of measure | Set value                 | Actual value (typ.)        |
|--|-----------------|---------------------------|----------------------------|
| Temperature index  | °C              | 200                       | 210                        |
| Cut through temperature (pre-heated block)                     | °C              | 320                       | ≥ 360                      |
| Dielectric loss factor (bending point)                         | (°C) (tan δ)    | /                         | ≥140/180/240               |
| Heat shock at 220 °C (no cracks in varnish coat after winding) |                 | mandrel diameter 1.120 mm | 1 x d / 10% pre-elongation |
| Bonding temperature  | °C              | 200 +/- 2                 | ≥ 180                      |

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.

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| Electrical                           | Unit of measure | Set value     | Actual value (typ.) |
|--------------------------------------|-----------------|---------------|---------------------|
| Dielectric strength RT               | kV              | ≥ 2.4 (twist) | ≥ 3 (cylinder)      |
| High voltage discontinuities<br>750V |                 | ≤ 10 on 30 m  | ≤ 7 on 100 m        |
| Electrical conductivity              | MS/m            | 58 - 59       | ≥ 58.5              |

| Chemical  | Set value               | Actual value (typ.) |
|---|-------------------------|---------------------|
| Pencil hardness (storage in standard solvent ½ h / 60 °C) | test methods unsuitable | /                   |
| Pencil hardness (storage in alcohol ½ h / 60 °C)          | test methods unsuitable | /                   |
| Resistance to commercial impregnants^(1)                  | /                       | not applicable      |
| Resistance to commercial refrigerants^(1)                 | /                       | limited             |
| Resistance to dry transformer oils^(1)                    | /                       | not recommended     |
| Resistance to hydraulic oils^(1)                          | /                       | no                  |

(1) Due to the variety of individual applications we cannot make any generally binding commitments regarding the compatibility. We recommend testing compatibility with the materials being used.