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## SHTherm® 210 Alu

- Enamelled al.wire
- Insulated with theic-mod. polyesterimide and amid-imid topcoat
- Class 200

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### Attributes

SHTherm® 210 AL is a highly thermo-resistant enamelled aluminium wire of heat performance class N with a wide range of good and very good quality features. As it is a dual-coat wire its insulation film consists of two different coatings on top of one another. These ensure: a very good permanent thermal and overload resistance, excellent esistance to chemical attacks e.g. by alkalines, washing and cleaning agents, impregnating varnishes and resins, sealing compounds, thinners, solvents and refrigerants as well as their vapours, an excellent mechanical abrasion resistance.

On demand the system can be offered with an additional layer of selflubricating enamel thus giving enhanced properties for winding operations.

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### Application

Control gears, drives for household equipment, electric motor drives, pump drives, refrigerators, transformers

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### Standards

IEC /DIN EN 60317-25

NEMA MW 35-A / 73-A

UL approved

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### Delivery forms

Grade 1: 1.250 - 4.000 mm

Grade 2: 1.250 - 4.000 mm

< 1.250 mm on request

> 4.000 mm on request

Typical properties of enamelled round aluminium wire 0.600 m, with insulation film grade 1

| Mechanical                  | Unit of measure | Set value                  | Actual value |
|-----------------------------|-----------------|----------------------------|--------------|
| Outer diameter with varnish | mm              | min. 0.627 - max.<br>0.649 | as set value |
| Bare wire diameter          | mm              | 0.594-0.606                | as set value |
| Elongation and adhesion     |                 | 3 x d                      | 2 x d        |
| Scrape resistance           | N               | ≥ 2,2                      | ≥ 3.5        |
| Pencil hardness of varnish  |                 | H                          | 4H - 5H      |
| Elongation at break         | %               | ≥ 12                       | ≥ 20         |
| Coefficient of friction     | μ               | /                          | ≤ 0.140      |

| Thermal  | Unit of measure | Set value | Actual value |
|--|-----------------|-----------|--------------|
| Temperature index  | °C              | 200       | 207          |
| Cut through temperature (pre-heated block)                     | °C              | /         | /            |
| Dielectric loss factor (bending point)                         | (°C) (tan δ)    | /         | ≥ 185        |
| Heat shock at 220 °C (no cracks in varnish coat after winding) |                 | 3 x d     | 3 x d        |
| Solderability  |                 | no        | no           |

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Updated 05/18



| Electrical                         | Unit of measure | Set value     | Actual value   |
|------------------------------------|-----------------|---------------|----------------|
| Dielectric strength RT             | kV              | ≥ 2.6 (twist) | ≥ 3 (cylinder) |
| High voltage discontinuities 1000V |                 | ≤ 25 on 30 m  | ≤ 7 on 100 m   |
| Electrical conductivity            | MS/m            | 35.5 - 36.2   | ≥ 35.85        |

| Chemical  | Set value | Actual value |
|---|-----------|--------------|
| Pencil hardness (storage in standard solvent ½ h / 60 °C) | min. H    | 3H - 5H      |
| Pencil hardness (storage in alcohol ½ h / 60 °C)          | min. H    | 3H - 5H      |
| Resistance to commercial impregnants^(1)                  | /         | yes          |
| Resistance to commercial refrigerants (1)                 | /         | yes          |
| Resistance to dry transformer oils (1)                    | /         | yes          |
| Resistance to hydraulic oils (1)                          | /         | yes          |

(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.

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