

# DAMID

*Rectangular enamelled conductor of copper, heat resistant, class 200*

**Product name**

DAMID

**UL approval**

DAMID, E101843, MW 35

**Specification**

IEC 60317-29\*

NEMA MW 36-C

**Class 200**

Temperature index  $\geq 200^{\circ}\text{C}$  as per IEC 60172

Heat shock  $\geq 220^{\circ}\text{C}$

**Properties**

- Heat resistant
- Resistant to mineral oil
- Resistant to refrigerents

**Field of application**

- Stator and rotor coils
- Oil-cooled transformers
- Dry-insulated transformers
- Welding transformers

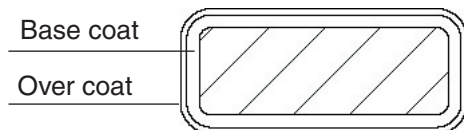
**Reels**

Reel 355, 500, 630

**Insulation**

Base coat: THEIC-modified polyester(imide)

Over coat: Polyamid-imide



**Conductor tolerances/mm**

| Width (W)               | Tolerance  | Thickness (T)           | Tolerance  |
|-------------------------|------------|-------------------------|------------|
| $2,00 \leq W \leq 3,15$ | $\pm 0,03$ | $1,00 \leq T \leq 3,15$ | $\pm 0,03$ |
| $3,15 < W \leq 6,30$    | $\pm 0,05$ | $3,15 < T \leq 6,00$    | $\pm 0,05$ |
| $6,30 < W \leq 12,50$   | $\pm 0,07$ |                         |            |
| $12,50 < W \leq 16,00$  | $\pm 0,10$ |                         |            |

**Conductor corner radius/mm**

| Thickness (T)        | Radius (r) | Tolerance  |
|----------------------|------------|------------|
| $1,00 < T \leq 1,60$ | 0,50       | $\pm 25\%$ |
| $1,60 < T \leq 2,24$ | 0,65       | $\pm 25\%$ |
| $2,24 < T \leq 3,55$ | 0,80       | $\pm 25\%$ |
| $3,55 < T \leq 6,00$ | 1,00       | $\pm 25\%$ |

Increase in dimension due to the insulation/mm = 0,10 - 0,21

Length as function of mass can be expressed:

$$l(m) = \frac{1000 m}{8,93 A} \text{ for: } A = W T - (4 - \pi)r^2$$

l = length in m

m = mass in kg

A = cross section in mm<sup>2</sup>

\* We fulfill all the requirements in IEC 60317-29 and IEC 60317-0-2 with the exception of clause 60317-0-2:4.4 which covers the tolerance of the increase of enamel. Nevertheless we remain well within the requirements of electric breakdown voltage and the other properties for the final product. For tolerances on the enamel thickness, see above.

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## Properties for enamelled rectangular wire - DAMID

| Characteristics   | Test method                | Interval  | Acceptance criteria <sup>1)</sup>                                | Typical test results                           |
|---|----------------------------|---|--|--|
| <b>Mechanical properties</b><br>Elongation at fracture          | <i>IEC 60851 - 3.3.1</i>   | 1,00 ≤ T ≤ 2,50<br>2,50 < T ≤ 6,00                    | ≥ 30 %<br>≥ 32 %   | 45 %<br>45 %                                   |
| Tensile strength  | <i>IEC 60851 - 3.3.2</i>   | 1,00 ≤ T ≤ 3,00<br>3,00 < T ≤ 6,00                    | 200 - 270 N/mm <sup>2</sup> 4)<br>200 - 260 N/mm <sup>2</sup> 4) | 250 N/mm <sup>2</sup><br>250 N/mm <sup>2</sup> |
| Springback  | <i>IEC 60851 - 3.4.2</i>   | 1,00 ≤ T ≤ 6,00                                       | ≤ 5,0°   | 4,1°   |
| Flexibility<br>- Edgewise and flatwise bending                  | <i>IEC 60851 - 3.5.1.2</i> | 2,00 ≤ B ≤ 10,0<br>10,0 < B ≤ 16,0<br>1,00 ≤ T ≤ 6,00 | 4 x W<br>5 x W<br>4 x T  | 3 x W<br>4 x W<br>3 x T                        |
| Adherence<br>- Stretch of a cut sample                          | <i>IEC 60851 - 3.5.5.1</i> | 1,00 ≤ T ≤ 6,00                                       | 15 % stretch<br>Loss of adhesion<br>≤ 1 x W                      | 30 % stretch<br>Loss of adhesion<br>≤ ½ x W    |
| <b>Electrical properties (20°C)</b><br>Conductor resistance (R) | <i>IEC 60851 - 5.3</i>     | 2)  | 0,01709 Ωmm <sup>2</sup> /m                                      | -  |
| Conductivity  | 1/R                        | 2)  | > 58 m/(Ωmm <sup>2</sup> )                                       | -  |
| Electrical breakdown voltage                                    | <i>IEC 60851 - 5.4.2</i>   | 5)  | 2,0 kV   | 5,0 kV   |
| <b>Thermal properties</b><br>Heat shock                         | <i>IEC 60851 - 6.3.1.2</i> | 1,00 ≤ T ≤ 6,00                                       | ≥ 220°C, 6 x T   | -  |
| Temperature index   | <i>IEC 60851 - 6.5.1.2</i> | 3)  | > 200°C  | > 230°C  |

### Comments:

1) Acceptance criteria are obtained from IEC 60317-0-2 and IEC 60317-29 unless otherwise is stated

2) The dependence of dimension is expressed by the unit

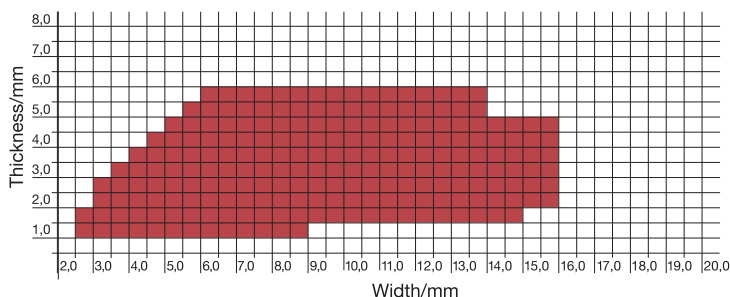
3) This test shall be conducted on round wire, 1,00 mm Grade 2 according to IEC

4) Acceptance criteria as per EN 13601 for Cu-ETP

5) Property independent of dimension

## Dimension range

DAMID, DAMIDFIBRE,  
DAMIDGLAS, DAMIDFIBRE EPOXY



The technical data included is up to date at the time of printing.  
Dahrentråd reserve the right to make any amendments deemed necessary.

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