

# Stanyl® TW271B3

## (PA46+PTFE)–CF15

15% Carbon Reinforced, Heat Stabilized, Wear and Friction Modified

Stanyl® TW271B3 is a friction–modified high heat polyamide that offers excellent creep resistance, strength, stiffness and fatigue resistance, not only at ambient temperatures but especially at high temperatures, while at the same time providing cycle–time advantages and excellent flow. TW271B3 has an excellent track–record in gear applications.

| PROPERTIES                    | TYPICAL DATA      | UNIT | TEST METHOD  |
|-------------------------------|-------------------|------|--------------|
| <b>RHEOLOGICAL PROPERTIES</b> |                   |      |              |
|                               | <b>DRY / COND</b> |      |              |
| Molding shrinkage (parallel)  | 0.2 / *           | %    | ISO 294–4    |
| Molding shrinkage (normal)    | 0.8 / *           | %    | ISO 294–4    |
| <b>MECHANICAL PROPERTIES</b>  |                   |      |              |
|                               | <b>DRY / COND</b> |      |              |
| Tensile modulus               | 13500 / 6700      | MPa  | ISO 527–1/–2 |
| Tensile modulus (120°C)       | 6300 / –          | MPa  | ISO 527–1/–2 |
| Tensile modulus (160°C)       | 5700              | MPa  | ISO 527–1/–2 |
| Tensile modulus (180°C)       | 5400              | MPa  | ISO 527–1/–2 |
| Tensile modulus (200°C)       | 5100              | MPa  | ISO 527–1/–2 |
| Stress at break               | 195 / 120         | MPa  | ISO 527–1/–2 |
| Stress at break (120°C)       | 108 / –           | MPa  | ISO 527–1/–2 |
| Stress at break (160°C)       | 92                | MPa  | ISO 527–1/–2 |
| Stress at break (180°C)       | 84                | MPa  | ISO 527–1/–2 |
| Stress at break (200°C)       | 76                | MPa  | ISO 527–1/–2 |
| Strain at break               | 2.1 / 5           | %    | ISO 527–1/–2 |
| Strain at break (120°C)       | 5 / –             | %    | ISO 527–1/–2 |
| Strain at break (160°C)       | 5                 | %    | ISO 527–1/–2 |
| Strain at break (180°C)       | 5                 | %    | ISO 527–1/–2 |
| Strain at break (200°C)       | 5                 | %    | ISO 527–1/–2 |
| Flexural modulus              | 12000 / 5800      | MPa  | ISO 178      |

## Property Data

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| <i>PROPERTIES</i>                            | <i>TYPICAL DATA</i>      | <i>UNIT</i>       | <i>TEST METHOD</i> |
|--|--------------------------|-------------------|--------------------|
| Flexural modulus (120°C)                     | 6300                     | MPa               | ISO 178            |
| Flexural modulus (160°C)                     | 5900                     | MPa               | ISO 178            |
| Flexural strength                            | 280 / 150                | MPa               | ISO 178            |
| Flexural strength (120°C)                    | 150                      | MPa               | ISO 178            |
| Flexural strength (160°C)                    | 120                      | MPa               | ISO 178            |
| Charpy impact strength (+23°C)               | 50 / 57                  | kJ/m <sup>2</sup> | ISO 179/1eU        |
| Charpy impact strength (-30°C)               | 45 / 45                  | kJ/m <sup>2</sup> | ISO 179/1eU        |
| Charpy notched impact strength (+23°C)       | 6 / 12                   | kJ/m <sup>2</sup> | ISO 179/1eA        |
| Charpy notched impact strength (-30°C)       | 5 / 4.5                  | kJ/m <sup>2</sup> | ISO 179/1eA        |
| Izod notched impact strength (+23°C)         | 6 / 12                   | kJ/m <sup>2</sup> | ISO 180/1A         |
| <b><i>THERMAL PROPERTIES</i></b>             |                          |                   |                    |
|  | <b><i>DRY / COND</i></b> |                   |                    |
| Melting temperature (10°C/min)               | 295 / *                  | °C                | ISO 11357-1/-3     |
| Temp. of deflection under load (1.80 MPa)    | 290 / *                  | °C                | ISO 75-1/-2        |
| Coeff. of linear therm. expansion (parallel) | 0.25 / *                 | E-4/°C            | ISO 11359-1/-2     |
| Coeff. of linear therm. expansion (normal)   | 0.5 / *                  | E-4/°C            | ISO 11359-1/-2     |
| Burning Behav. at 3.0 mm nom. thickn.        | HB / *                   | class             | IEC 60695-11-10    |
| Thickness tested                             | 3 / *                    | mm                | IEC 60695-11-10    |
| UL recognition                               | Yes / *                  | -                 | -                  |
| <b><i>ELECTRICAL PROPERTIES</i></b>          |                          |                   |                    |
|  | <b><i>DRY / COND</i></b> |                   |                    |
| Volume resistivity                           | 100000 / -               | Ohm*m             | IEC 62631-3-1      |
| <b><i>OTHER PROPERTIES</i></b>               |                          |                   |                    |
|  | <b><i>DRY / COND</i></b> |                   |                    |
| Humidity absorption                          | 2.6 / *                  | %                 | Sim. to ISO 62     |
| Density                                      | 1320 / -                 | kg/m <sup>3</sup> | ISO 1183           |