

PROPERTIES

ZX-100K 3D TRIBOFILAMENT



| | Criteria / Properties | Standard | Unit / Classification | ZX-100K |
|-----------------|-----------------------------|----------|-----------------------|---------|
| User experience | Beginner | - | Yes / No | No |
| | Consumer | - | Yes / No | Yes |
| | Expert | - | Yes / No | Yes |
| | Professional | - | Yes / No | Yes |
| Type of parts | Structural parts | - | Yes / No | Yes |
| | Design parts | - | Yes / No | Yes |
| | Wear parts | - | Yes / No | Yes |
| | High temperature wear parts | - | Yes / No | No |

| | | | | |
|----------------------|------------------|---|----------|-----|
| Application examples | Gears | - | Yes / No | Yes |
| | Bushings | - | Yes / No | Yes |
| | Spindle nuts | - | Yes / No | Yes |
| | Sliding pads | - | Yes / No | Yes |
| | Scrapers | - | Yes / No | Yes |
| | Tool holders | - | Yes / No | Yes |
| | Damping elements | - | Yes / No | Yes |

| | | | | |
|----------------------|-----------------------|---|------|----------|
| Printer requirements | Nozzle temperature | - | °C | 260 |
| | Cabin temperature | - | °C | 15 to 30 |
| | Print bed temperature | - | °C | <80 |
| | Printing speed | - | mm/s | 42mm/sec |

| | | | | |
|------------------------|---|----------------------------|-------------------|-------|
| Operational conditions | Max. continuous operating temperature (long term) | UL 746B | °C | 110 |
| | Brittle point | ISO 6603-2 | °C | -40 |
| | Heat distortion temperature | DIN EN ISO 75 HDT/A 1,8MPa | °C | 80 |
| | Max surface pressure | DIN EN ISO 604 | N/mm ² | 49-80 |

| | | | | |
|-------------------------|---------------------------|----------|----------|------|
| General characteristics | Strength | - | ○○○○ | ●●●○ |
| | Brittleness | - | ○○○○ | ●●●○ |
| | Impact resistance | - | ○○○○ | ●●○○ |
| | Dimensional stability | - | ○○○○ | ●●●○ |
| | Wear resistance | - | ○○○○ | ●●●○ |
| | Friction | - | ○○○○ | ●●●○ |
| | Chemical resistance | - | ○○○○ | ●●○○ |
| | Weathering resistance | - | ○○○○ | ●●●○ |
| | Suitable for use in water | - | Yes / No | Yes |
| | Food approval EU 10/2011 | - | Yes / No | Yes |
| Food approval FDA | - | Yes / No | Yes | |

| | | | | |
|---------------|-------------|---|------|------|
| Bonding agent | PrintFixOne | - | ○○○○ | ●●●● |
| | Pritt Stick | - | ○○○○ | ●●○○ |
| | Hair spray | - | ○○○○ | ●●○○ |
| | Dimafix | - | ○○○○ | ●●○○ |

| | Criteria / Properties | Standard | Unit / Classification | ZX-100K |
|------------------|---------------------------------|----------|-----------------------|---------------------------------------|
| Printing results | Smooth surface | - | ○○○○ | ●●●○ |
| | No warping | - | ○○○○ | ●●●● |
| | Support material easy to detach | - | ○○○○ | ●●●● |
| | Bridging | - | ○○○○ | ●●●○ |
| | Odorless | - | Yes / No | Yes |
| | Colours | - | | Various |
| | Surface gloss | - | matt / glossy | It depends on the printing conditions |

| | | | | |
|-------------------|---|------------------|-----------------|---|
| processing | Bondable and weldable | - | ○○○○ | ●●○○ |
| | Machinability | - | ○○○○ | ●●●○ |
| | Annealing | - | ○○○○ | ●●●○ |
| Filament moisture | Annealing temperature | - | °C | 125 |
| | Dispatched moisture | DIN EN ISO 15512 | % | 0,005 |
| | Filament storage | - | rel. humidity % | <15 |
| Drying | Filament moisture content during printing | DIN EN ISO 15512 | % | <0,1 |
| | Drying temperature | - | °C | 75 |
| | Drying time | - | h | 24 |
| | Drying in | - | | Convention oven, dry air oven, vacuum furnace |

| | | | | |
|--------------------------|---|------------------|--|------------|
| Specific characteristics | Tensile strength | DIN EN ISO 527 | N/mm ² | 51-68 |
| | Tensile modulus | DIN EN ISO 527 | N/mm ² | 1600-2550 |
| | Elongation at break | DIN EN ISO 527 | % | 3 to 4 |
| | Impact resistance un-notched Charpy | EN ISO 179/1eU | kJ/m ² | - |
| | Ball indentation hardness | DIN 2039 H358/30 | N/mm ² | - |
| | Specific wear rate P = 1N / mm ² ; v = 100m / min; 100Cr6, dry-running | ASTM G99:2000 | mm ³ /km * 10 ⁻⁷ | 3,2 to 12 |
| | Specific wear rate p = 10N / mm ² ; v = 4 m / min; 100Cr6, dry-running | ASTM G99:2000 | mm ³ /km * 10 ⁻⁷ | 11,5 to 36 |
| Friction | Factory standard (20°C, p = 0,45N/mm ²) | - | 0,2 | |

| | | | | |
|-----------|----------|---|------|------|
| Fixing on | Glass | - | ○○○○ | ●●●● |
| | Carbon | - | ○○○○ | ●●●○ |
| | Aluminum | - | ○○○○ | ●●●○ |
| | Steel | - | ○○○○ | ●●●○ |
| | Pertinax | - | ○○○○ | ●●●○ |
| | Ceramic | - | ○○○○ | ●●●○ |