



DuraForm[®] PAX Black

Nylon Copolymer

High impact, high elongation, high recyclability SLS material with properties similar to injection molded plastics for tough, lightweight, production-grade parts.

Selective Laser Sintering (SLS)

PRODUCTION-GRADE HIGH IMPACT NYLON COPOLYMER WITH HIGH ELONGATION AND LONG-TERM STABILITY FOR TOUGH PLASTIC PARTS

DuraForm PAX Black is a nylon copolymer that offers properties similar to injection molded plastics and features high impact resistance with high elongation at break in any direction, including Z. Engineered for easy processing and high recyclability, DuraForm PAX Black is ideal for functional prototypes and end-use parts with good mechanical properties and long-term stability.

The low printing temperatures of DuraForm PAX Black contribute to high throughput when using this material, and its designation as a clean running material means low operator maintenance. With impressive long-term stability of over five years indoor, DuraForm PAX Black is among the top performing SLS materials for long-term use.

APPLICATIONS

- General purpose prototypes
- Orthotics
- Tooling handles and grips for use in tough, rugged environments
- Living hinges
- Liquid reservoirs per data sheet specifications
- Enclosures requiring high impact and high toughness

ADVANTAGES

- Durable and tough for true functional plastic parts
- High reuse rates reduce waste and decrease production costs
- Low temperature printing enables faster parts in hand
- Excellent long-term stability; 5+ years indoor for mechanical properties and color
- Vapor-honed parts have excellent translucency and smooth finish

Note: Not all products and materials are available in all countries — please consult your local sales representative for availability.

DuraForm PAX Black

| THERMOPLASTIC POWDER MATERIAL | | |
|---|---------------------|------------------------|
| METRIC | METHOD | |
| Color | Black | |
| Blend Ratio | % Fresh | 30% |
| SOLID MATERIAL | | |
| METRIC | ASTM METHOD | METRIC |
| PHYSICAL | | |
| Solid Density | ASTM D792 | 1.04 g/cm ³ |
| 24 Hour Water Absorption | ASTM D570 | |
| MECHANICAL | | |
| Tensile Strength Ultimate | ASTM D638 Type I | 40 MPa |
| Tensile Strength at Yield | ASTM D638 Type I | 40 MPa |
| Tensile Modulus | ASTM D638 Type I | 1500 MPa |
| Elongation at Break | ASTM D638 Type I | 100% |
| Elongation at Yield | ASTM D638 Type I | 5% |
| Flex Strength | ASTM D790 | 50 MPa |
| Flex Modulus | ASTM D790 | 900 MPa |
| Izod Notched Impact | ASTM D256 | 58 J/m |
| Izod Unnotched Impact | ASTM D4812 | +400 J/m |
| Shore Hardness | ASTM D2240 | |
| THERMAL | | |
| Tg (DMA E") | ASTM E1640 (E"Peak) | |
| HDT 0.455MPa/66PSI | ASTM D648 | 110 °C |
| HDT 1.82MPa/264 PSI | ASTM D648 | 45 °C |
| CTE -40 to 15C | ASTM E831 | |
| CTE 55 to 125C | ASTM E831 | |
| UL Flammability | UL94 | |
| ELECTRICAL | | |
| Dielectric Strength (kV/mm) @ 3mm thickness | ASTM D149 | |
| Dielectric Constant @ MkHz | ASTM D150 | |
| Dissipation Factor @ MkHz | ASTM D150 | |
| Volume Resistivity (ohm-cm) | ASTM D257 | |



*Tensile testing done at 50mm/min after timeout at 5mm/min per ASTM D638 standards

Complete data set will be available in Q4 2022.