

Technisches Datenblatt



Produkt: IND402

Hersteller: HENKEL KGAA

Warengruppe: 3DP

Artikelgruppe: 3DP RESINS

Download: 20.04.2024

LOCTITE IND402 A70 HR BLACK

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LOCTITE®

IND402™

**PhotoElastic
A70 High Rebound
Black**

LOCTITE®
5110 Port Chicago Hwy
Concord CA 94520

07/10/2020

Preliminary v3.1

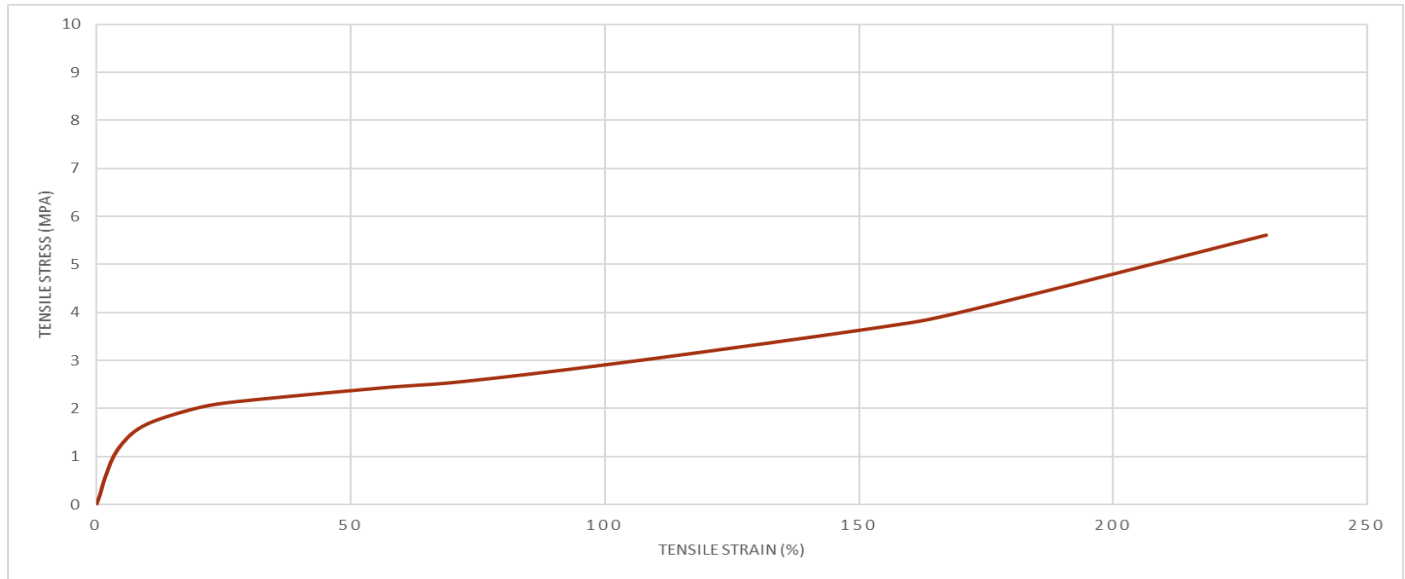


IND402™ A70 High Rebound Black

Description

LOCTITE® 3D IND402™ is a high elongation elastomeric photopolymer that exhibits excellent resilience to compression forces and maintains its tensile strength and interlayer adhesion. It demonstrates good rebound performance resulting in high energy return. These performance attributes make this product ideal for midsole and soft insert applications with lattice structure as well as other consumer and industrial applications requiring an elastomeric solution. Parts can be printed with various DLP and SLA printer platforms and would not require thermal post processing.

Available colors: Black. Custom colors can be offered upon request.



| Mechanical Properties | Method | Green state (no post processing) | Post Processed |
|---------------------------------|-----------------|-------------------------------------|------------------------------|
| Tensile Strength | ASTM D638 | 2.3 ± 0.31 MPa [10] | 5.5 ± 0.2 MPa ^[1] |
| Young's Modulus | ASTM D638 | 15 ± 2.15 MPa [10] | 42 ± 5 MPa ^[1] |
| Elongation at Break | ASTM D638 | 176 ± 43.5 % [10] | 230 ± 10 % ^[1] |
| Energy Return | Internal method | | 30-35 % ^[2] |
| Tear Strength | ASTM D624 | | 28 ± 1 kN/m ^[5] |
| Shore Hardness (0s, 3s) A Scale | ASTM D2240 | | 75, 73 ^[8] |
| Other Properties | | | |
| Water Absorption | ASTM D570-98 | | 3.15% ^[4] |
| Solid Density | ASTM D1475 | | 1.068 [9] |
| Liquid Density | ASTM D1475 | | 1.044 [9] |

Liquid Properties

| | | |
|--------------------------|-------------------------|--|
| Viscosity @ 25°C (77°F) | 14500 cP ^[3] | |
| Viscosity @ 35°C (95°F) | 8430 cP ^[7] | |
| Viscosity @ 40°C (104°F) | 6028 cP ^[7] | |
| Flow Characteristic | Self-leveling, | |
| Appearance Color | Black | |

"All samples are printed unless otherwise specified." ASTM Methods: D638 Type IV, 5mm/min, D790-B , 2mm/min, D624, D570-98 24 hour water immersion, specimen 50.8mm diameter, 3.2mm thick.

07/10/2020

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IND402™ A70 High Rebound Black

1) TaskID: FOR18387
2) TaskID: FOR18388
3) TaskID: FOR18389
4) TaskID: FOR18665

5) TaskID: FOR18664
6) TaskID: FOR19225
7) TaskID: FOR19857
8) TaskID: FOR20027

9) TaskID: FOR20028
10) TaskID: FOR18709

Machine Settings

LOCTITE® IND402™ is formulated to print with 385-405 nm wavelength projectors with irradiance between 3-7 mW/cm². Layer time is given below at 6 mW/cm².

| Layer Thickness: | 50um | 100um |
|------------------------|------|-------|
| Base Cure Time: | 25s | 25s |
| Model Layer Cure Time: | 2-4s | 4-6s |

| | |
|--------------------------|------|
| Ec (mJ/cm ²) | 6.06 |
| Dp (mm): | 0.09 |

Recommended printing Temperature range: 20°C to 45°C

Post Processing

LOCTITE® IND402™ requires post processing to achieve specified properties. Support structures should be removed from the printed part then the part may be lightly rinsed in IPA for 2 minutes and sprayed with pressurized air to remove residual resin. Part should be allowed to dry at room temperature or 35°C for 5-15 minutes to remove any residual solvent. Exact times and methods can be found by contacting us at www.loctiteAM.com

Post Curing

LOCTITE® IND402™ It is recommend to use wide spectrum UV light (5-10 J/cm² per side). See Validation chart for examples of type and time. Exact devices with detail information can be found by contacting us at www.loctiteAM.com

Additional Development Options for IND402™ High Rebound

Colors: LOCTITE® IND402™ formula can be made in additional pigment colors

Vat Printer: LOCTITE® IND402™ formula is likely possible with recirculation VAT that can handle higher viscosity resins

LCD printers: LOCTITE® IND402™ formula shows limited path forward for LCD projector printers at this time.

Limitations for IND402™ High Rebound

Post Cure: LOCTITE® IND402™ requires broadband spectrum for post cure.

Formula Modification: LOCTITE® IND402™ has limited potential for any tensile property adjustments.

IND402™ A70 High Rebound Black

Note

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