

Public printing recommendation

# Bedrock 3D Standard Black TPU 64D Black

MaterialID MAT0253



3DPiceland Labs  
Generated with 3DPiceland Engineering Platform v70.0.4  
DIRECT-IMPACT-METHODOLOGY - Izod and Charpy  
Methodology  
2026-10-04 18:12:06

**Guidance boundary:** values below are shared base-material guidance resolved only through the canonical BaseMaterialId link. They are not manufacturer-, spool- or printer-specific validated settings. Missing fields remain Not recorded.

|              |                         |                  |                      |
|--------------|-------------------------|------------------|----------------------|
| Overall<br>— | Engineering axes<br>0/8 | Public rank<br>— | MSRP USD/kg<br>42.39 |
|--------------|-------------------------|------------------|----------------------|

## Engineering profile

|                |             |   |
|----------------|-------------|---|
| Overall        | <div></div> | — |
| Tensile        | <div></div> | — |
| Impact         | <div></div> | — |
| Izod           | <div></div> | — |
| Charpy         | <div></div> | — |
| Stiffness      | <div></div> | — |
| Consistency    | <div></div> | — |
| Layer adhesion | <div></div> | — |

### Recommended applications

- Application guidance awaits sufficient measured evidence and approved score references

### Measured strengths

- No scored strength is available yet.

## Limitations

- No scored limitation can be established from the available evidence.

## Engineering trade-offs

- Complete scoring evidence and approved method references are required before assessing an overall balance of properties.

## Base-material printing guidance

| Guidance                   | Minimum           | Recommended | Maximum | Unit  |
|----------------------------|-------------------|-------------|---------|-------|
| Nozzle temperature         | 220               | 225         | 260     | °C    |
| Bed temperature            | 65                | 65          | 65      | °C    |
| Print speed                | 11                | 30          | 30      | mm/s  |
| Cooling                    | 65                | 65          | 65      | %     |
| Guidance                   | Value             |             |         | Unit  |
| Cooling guidance           | High              |             |         |       |
| Drying temperature         | 65                |             |         | °C    |
| Drying time                | 8                 |             |         | hours |
| Enclosure                  | Not required      |             |         |       |
| Printer / G-code reference | PrusaCoreOneL     |             |         |       |
| Slicer profile reference   | Prusament TPU 95A |             |         |       |

## Print workflow checks

- Confirm nozzle temperature, bed temperature, speed, cooling and drying requirements from the manufacturer profile or spool label.
- Print a small validation part before committing to a long, costly or safety-relevant print.
- Orient the part so the governing load does not rely on an unverified or weak engineering axis.
- Flexible family: validate extrusion path, retraction and speed conservatively on the actual printer.
- Layer-adhesion evidence is weak; avoid critical Z-axis loading without additional validation.
- Repeatability is low on the internal scale; run extra validation specimens before relying on the profile.

## Decision guidance

- Overall suitability is unavailable until the required measurements and method references are complete.

## Stronger same-family alternatives

| MaterialID                                                                                                                                                            | Material | Manufacturer | Overall | Tensile | Impact | Izod | Charpy |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|---------|---------|--------|------|--------|
| Confirm exact settings against the manufacturer profile, spool label and actual printer/material combination. Results do not replace application-specific validation. |          |              |         |         |        |      |        |

[Testing methodology](#) · [Download PDF](#)

## Flexible Material Testing

Comparative in-house measurements; n = independent specimens. Separate test groups; Overall unchanged.

| Method   | Result                                              | Condition                                                                           | Mean    | n | SD    | CV %  | Range         | Not reached |
|----------|-----------------------------------------------------|-------------------------------------------------------------------------------------|---------|---|-------|-------|---------------|-------------|
| eaacea91 | Apparent Compressive Stress at 20% Strain (MPa)     | 10 s hold · 2 mm displacement · cycle 1                                             | 6.885   | 9 | 0.133 | 1.934 | 6.728–7.074   | 0           |
| eaacea91 | Apparent Compressive Stress at 20% Strain (MPa)     | 30 s hold · 2 mm displacement · cycle 1                                             | 6.352   | 9 | 0.128 | 2.016 | 6.193–6.571   | 0           |
| eaacea91 | Compression Force at 20% Strain (N)                 | 10 s hold · 2 mm displacement · cycle 1                                             | 438     | 9 | 8.471 | 1.934 | 428–450       | 0           |
| eaacea91 | Compression Force at 20% Strain (N)                 | 30 s hold · 2 mm displacement · cycle 1                                             | 404.111 | 9 | 8.146 | 2.016 | 394–418       | 0           |
| eaacea91 | Force reduction from 10 s to 30 s at 20% Strain (%) | first compression only · 2 mm displacement                                          | 7.738   | 9 | 0.443 | 5.731 | 7.111–8.372   | 0           |
| eaacea91 | Force retention at 20% Strain (%)                   | 10–30 s · 2 mm displacement · cycle 1                                               | 92.262  | 9 | 0.443 | 0.481 | 91.628–92.889 | 0           |
| eaacea91 | Residual height loss after recovery (%)             | 20% compression · 30 s compressed hold · 60 s rest · 10 mm initial height · cycle 1 | 1.956   | 9 | 0.124 | 6.321 | 1.8–2.2       | 0           |
| ed381ba8 | Shore A Hardness (Shore A)                          | 10 s reading · 8 mm                                                                 | 91.9    | 1 | —     | —     | 91.9–91.9     | 0           |

## Shore location statistics

Within each specimen; specimen numbers are local to each test group. SD uses the sample formula. These readings do not increase independent n.

| Method   | Scale            | Condition           | Specimen | Readings | Mean | Location SD | Location CV % |
|----------|------------------|---------------------|----------|----------|------|-------------|---------------|
| ed381ba8 | Shore A Hardness | 10 s reading · 8 mm | 1        | 5        | 91.9 | 4.561       | 4.963         |

reports/printing-recommendations/MAT0253/

Score policy engineering-score-v70-1: Overall requires tensile, stiffness, consistency, layer adhesion and the Izod/Charpy impact family, each with equal weight. Both impact methods and configured versioned references are required. Missing results and unconfigured scores remain n/a. Legacy Impact is historical only; thermal remains separate. Engineering-axis counts describe displayed evidence, not Overall completeness.