

Public printing recommendation

Bedrock 3D Standard Natural TPU 85A Natural

MaterialID MAT0255



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 —	Engineering axes 0/8	Public rank —	MSRP USD/kg 48.85
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Engineering profile

Overall		—
Tensile		—
Impact		—
Izod		—
Charpy		—
Stiffness		—
Consistency		—
Layer adhesion		—

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	2.977	10	0.072	2.416	2.861–3.097	0
eaacea91	Apparent Compressive Stress at 20% Strain (MPa)	30 s hold · 2 mm displacement · cycle 1	2.848	10	0.067	2.353	2.735–2.955	0
eaacea91	Compression Force at 20% Strain (N)	10 s hold · 2 mm displacement · cycle 1	189.4	10	4.575	2.416	182–197	0
eaacea91	Compression Force at 20% Strain (N)	30 s hold · 2 mm displacement · cycle 1	181.2	10	4.264	2.353	174–188	0
eaacea91	Force reduction from 10 s to 30 s at 20% Strain (%)	first compression only · 2 mm displacement	4.328	10	0.38	8.778	3.684–4.813	0
eaacea91	Force retention at 20% Strain (%)	10–30 s · 2 mm displacement · cycle 1	95.672	10	0.38	0.397	95.187–96.316	0
eaacea91	Residual height loss after recovery (%)	20% compression · 30 s compressed hold · 60 s rest · 10 mm initial height · cycle 1	1.2	10	0.2	16.667	0.9–1.6	0
ed381ba8	Shore A Hardness (Shore A)	10 s reading · 8 mm	84.8	1	—	—	84.8–84.8	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	84.8	1.304	1.538

reports/printing-recommendations/MAT0255/

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.