

Public printing recommendation

Bedrock 3D Standard Black PLA Black

MaterialID MAT0249



3DPiceland Labs
Generated with 3DPiceland Engineering Platform v70.0.4
DIRECT-IMPACT-METHODOLOGY - Izod and Charpy
Methodology
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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 50/100	Engineering axes 7/8	Public rank 13 / 80	MSRP USD/kg 22.96
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Engineering profile

Overall		50/100
Tensile		38/100
Impact		—
Izod		11/100
Charpy		32/100
Stiffness		100/100
Consistency		71/100
Layer adhesion		21/100

Recommended applications

- Rigid brackets, fixtures and shape-stable prototypes
- Repeatable print jobs and production-style batches
- Cosmetic parts, concept models or low-load prototypes
- Avoid high impact components

Measured strengths

- Consistency: 71/100. Repeatability is one of the stronger signals in this material profile.
- Izod/Charpy impact family: 21/100. The two-method impact score is competitive against the material-family context.
- Tensile: 38/100. Tensile behavior is competitive against the material-

- family context.
- Stiffness: 100/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 38/100. Avoid using this as the primary choice for tensile-loaded parts.
- Izod/Charpy impact family: 21/100. Validate impact or shock-loaded components against their application requirements.
- Layer adhesion: 21/100. Z-axis performance should be treated with caution.

Engineering trade-offs

- Good repeatability does not compensate for low tensile capability in load-bearing designs.
- Stiffness is useful for shape stability, but impact tolerance is a separate limitation.

Base-material printing guidance

Guidance	Minimum	Recommended	Maximum	Unit
Nozzle temperature	195	230	230	°C
Bed temperature	60	60	70	°C
Print speed	55	165	165	mm/s
Cooling	20	80	85	%
Guidance	Value			Unit
Cooling guidance	High			
Drying temperature	50			°C
Drying time	5			hours
Enclosure	Not required			
Printer / G-code reference	PrusaCoreOneL			
Slicer profile reference	Prusament PLA			

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.
- Layer-adhesion evidence is weak; avoid critical Z-axis loading without additional validation.

Decision guidance

- Use this material for moderate requirements after checking the weakest axis.
- Review the listed alternatives if the application needs stronger overall performance.
- Validate impact-focused or shock-loaded designs against the measured Izod/Charpy results.

Stronger same-family alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact	Izod	Charpy
MAT0265	Coex 3D Standard Scarlet Red PLA Red	Coex 3D	58/100	39/100	—	n/a	n/a
MAT0118	Prusa3D Prusament Azure Blue PLA Blue	Prusa3D	55/100	36/100	—	n/a	n/a

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](#)

Izod and Charpy Impact Strength

Izod Impact Strength · 2026-09-29
Instrument readings in kJ/m²
Mean 8.999 kJ/m²; Std. Dev 3.793 kJ/m²; CV 42.147%; Samples 10; Confidence 10
No break 0; invalid 0; excluded 0.
Comparative measurements; standard conformity unverified.

Charpy Impact Strength · 2026-09-29
Instrument readings in kJ/m²
Mean 25.357 kJ/m²; Std. Dev 4.877 kJ/m²; CV 19.234%; Samples 9; Confidence 9
No break 0; invalid 0; excluded 0.
Comparative measurements; standard conformity unverified.

reports/printing-recommendations/MAT0249/

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.

