



Bedrock 3D Standard Black TPU Foaming Black

Material Engineering Report
MaterialID MAT0256

3DPiceland Engineering Platform
3DPiceland Labs
Generated with 3DPiceland Engineering Platform v70.0.4
DIRECT-IMPACT-METHODOLOGY - Izod and Charpy
Methodology
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Public-data contract: This static report contains only allowlisted material identity, public links, canonical MSRP and existing Verified Material Summary / governed score outputs. It excludes raw specimen rows and non-public operational data.

RIGID TEST COVERAGE

No native results; 0/5 score families; Izod/Charpy 0/2 measured, 0/2 scored; Overall unavailable: missing measurements or references; policy engineering-score-v70-1

ENGINEERING AXES

0/8

PUBLIC MSRP

\$94.20 USD/kg

Material identity

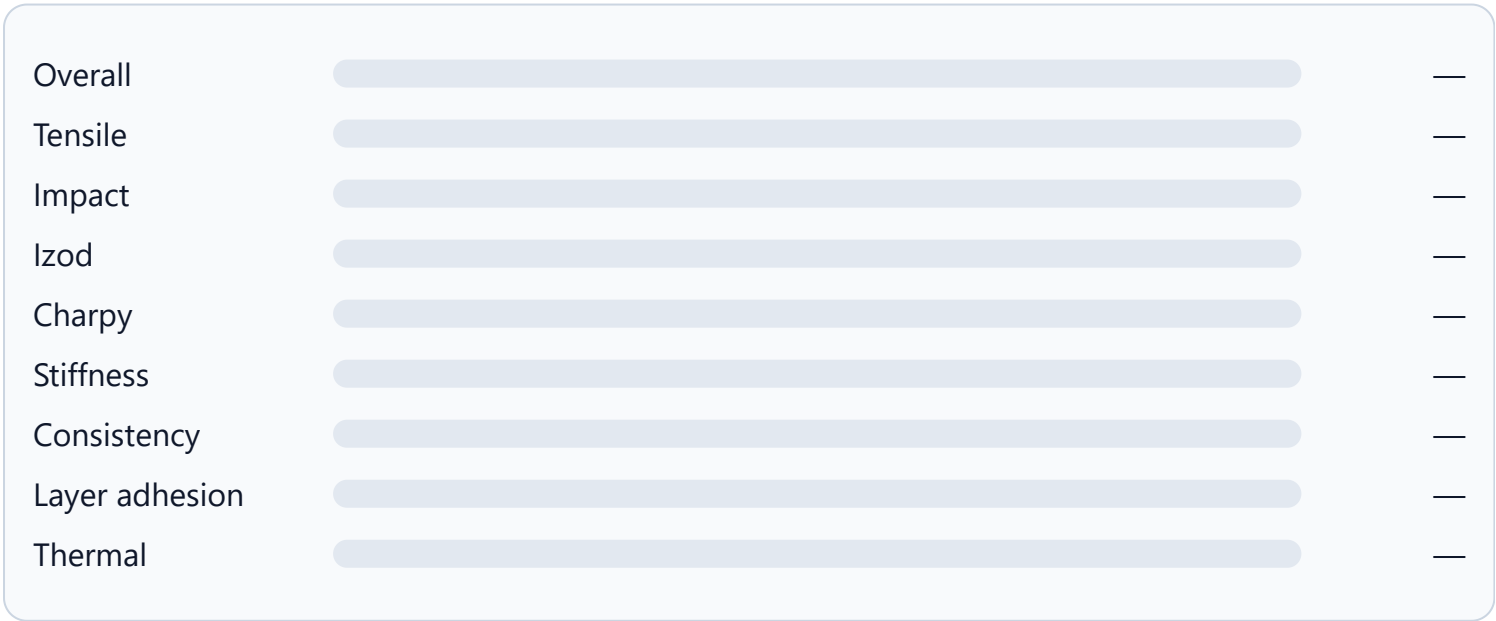
MaterialID	MAT0256
Material	Bedrock 3D Standard Black TPU Foaming Black
Manufacturer	Bedrock 3D
Product line	Standard
Base material	TPU
Category	Flexible

Variant / finish	Foaming
Reinforcement	—
Color	Black

Governed engineering profile

Overall	—
Tensile	—
Impact	—
Izod	—
Charpy	—
Stiffness	—
Consistency	—
Layer adhesion	—
Thermal	—
Best available axis	mechanical profile

Engineering score profile



Engineering radar

— Selected material

— Material average - TPU

— Manufacturer average - Bedrock 3D

Legacy Impact radar: —. This historical visual reference is the mean corrected Flat/Upright result divided by the matching rig capacity; it is not a modern engineering score.

Izod and Charpy use versioned method references and together form one equally weighted impact family. Overall requires all five families and both calibrated methods; incomplete profiles are not ranked. Legacy Impact and thermal are outside Overall. Missing axes have gaps with no marker or filled polygon; measured zero retains a centre marker.



Fixture thermal result

— · score — · method —
—

Material and manufacturer context

Metric	Selected material	Material average	Manufacturer average
Overall	—	—	—
Tensile	—	27/100	31/100
Impact	—	—	—
Izod	—	48/100	17/100
Charpy	—	47/100	24/100
Stiffness	—	—	81/100
Consistency	—	92/100	74/100
Layer adhesion	—	25/100	16/100
Thermal	—	—	—

Verified measurement results

Existing Verified Material Summary outputs. The public renderer does not read raw specimen rows or recalculate these values.

Measurement	Average	Std. deviation	CV	Samples	Confidence
Tensile upright	—	—	—	—	—
Tensile flat	—	—	—	—	—
Impact upright	—	—	—	—	—
Impact flat	—	—	—	—	—
Izod	—	—	—	—	—
Charpy	—	—	—	—	—
Stiffness modulus	—	—	—	—	—
Stiffness deflection	—	—	—	—	—

Measurement provenance

Canonical per-module measured dates from SQLite, shown in unambiguous ISO format. Missing dates are not inferred.

Module	Measured date
Tensile	Not recorded
Impact	Not recorded
Izod	Not recorded
Charpy	Not recorded
Stiffness	Not recorded
Thermal	Not recorded

Engineering interpretation

Summary: Bedrock 3D Standard Black TPU Foaming Black has a profile awaiting complete scoring evidence. It is without enough material-family average context and without enough manufacturer average context. Its strongest measured axis is No scored metric, while the weakest axis is No scored metric.

Data-driven review: Bedrock 3D Standard Black TPU Foaming Black has incomplete scoring evidence or pending method references. Overall suitability and ranking are unavailable. Available scored axes can be inspected separately; missing scores do not establish weak material performance.

BEST FEATURE

No scored metric

MAIN LIMITATION

No scored metric

DATASET POSITION

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.

Recommended applications

- Application guidance awaits sufficient measured evidence and approved score references

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	—	—	—
Tensile	—	—	—
Impact	—	—	—
Izod	—	—	—
Charpy	—	—	—
Stiffness	—	—	—
Consistency	—	—	—
Layer adhesion	—	—	—
Thermal	—	—	—

Decision guidance

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

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact	Izod	Charpy
No stronger same-base-material alternatives were identified in the current governed dataset.							

Peer context

Highest-scoring same-base-material peers from the current governed dataset. This context is descriptive and is not recalculated by the public renderer.

MaterialID	Material	Manufacturer	Overall	Tensile	Impact	Izod	Charpy
MAT0253	Bedrock 3D Standard Black TPU 64D Black	Bedrock 3D	—	—	—	n/a	n/a
MAT0255	Bedrock 3D Standard Natural TPU 85A Natural	Bedrock 3D	—	—	—	n/a	n/a
MAT0254	Bedrock 3D Standard White TPU 95A White	Bedrock 3D	—	—	—	n/a	n/a
MAT0257	Prima Creator Select Black TPU Black	Prima Creator	—	—	—	n/a	n/a
MAT0261	Prusa3D Prusament Jet Black TPU 95A Black	Prusa3D	—	—	—	n/a	n/a
MAT0200	Siraya Tech Fiberheart Black TPU 67D GF Black	Siraya Tech	—	27/100	—	n/a	n/a
MAT0260	Thorwell Standard Blue TPU Blue	Thorwell	—	—	—	n/a	n/a

Public links

[Manufacturer website](#) [Download PDF](#)

Methodology and limitations

Results are comparative 3DPIceland measurements from home-built test equipment. Thermal is a nearby BlueDOT probe-indicated fixture temperature, not ASTM D648, ISO 75 or specimen temperature. Missing evidence remains n/a. Scores and test results are not recalculated by this publishing layer and do not replace certified manufacturer datasheets or accredited laboratory testing.

- [Testing methodology](#)
- [Engineering methodology whitepaper](#)

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	0.357	10	0.011	2.973	0.346–0.377	0
eaacea91	Apparent Compressive Stress at 20% Strain (MPa)	30 s hold · 2 mm displacement · cycle 1	0.329	10	0.012	3.53	0.314–0.346	0
eaacea91	Compression Force at 20% Strain (N)	10 s hold · 2 mm displacement · cycle 1	22.7	10	0.675	2.973	22–24	0
eaacea91	Compression Force at 20% Strain (N)	30 s hold · 2 mm displacement · cycle 1	20.9	10	0.738	3.53	20–22	0
eaacea91	Force reduction from 10 s to 30 s at 20% Strain (%)	first compression only · 2 mm displacement	7.928	10	1.851	23.348	4.348–9.091	0
eaacea91	Force retention at 20% Strain (%)	10–30 s · 2 mm displacement · cycle 1	92.072	10	1.851	2.01	90.909–95.652	0
eaacea91	Residual height loss after recovery (%)	20% compression · 30 s compressed hold · 60 s rest · 10 mm initial height · cycle 1	2.96	10	0.615	20.777	2.2–4.1	0
ed381ba8	Shore A Hardness (Shore A)	10 s reading · 8 mm	54	1	—	—	54–54	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	54	1.225	2.268