Public engineering report

Extrudr DuraPro ABS CF Black

Material Engineering Report
MaterialID MAT0002

3DPIceland Engineering Platform
3DPIceland Labs
Generated with 3DPIceland Engineering Platform v60.0.6 WORKFLOW-RELIABILITY - Bug Fixes and Workflow Reliability
Generated 2026-08-25 19:02:26

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.

TEST COVERAGE	ENGINEERING AXES	PUBLIC MSRP
Complete	**6/6**	**$42.27 USD/kg**

Material identity

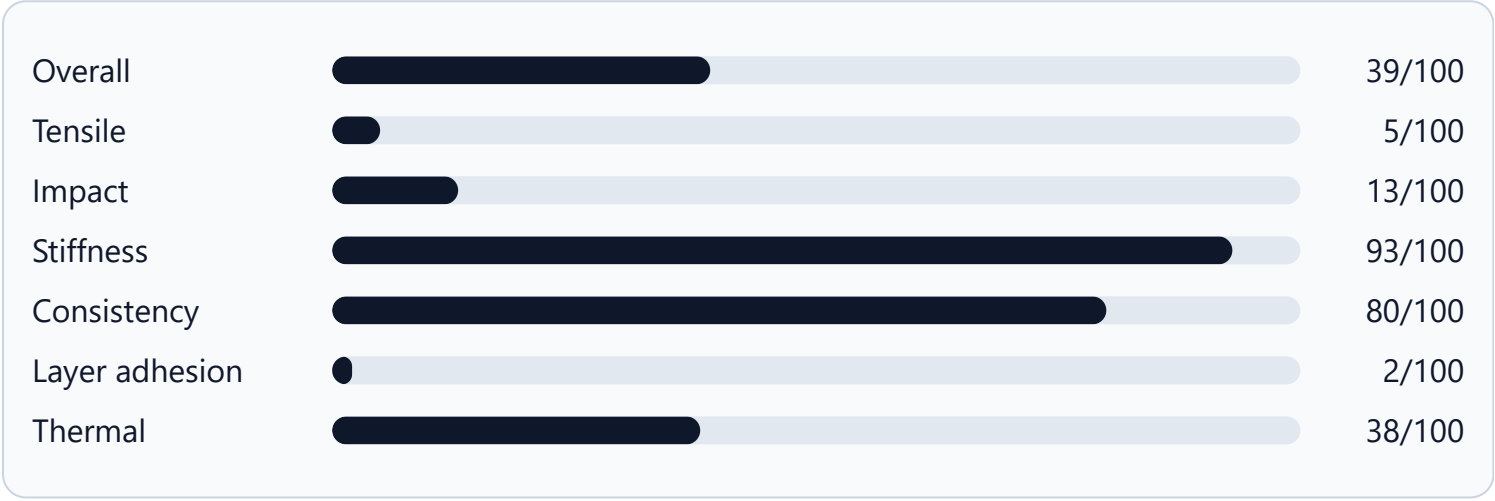
MaterialID	MAT0002
Material	Extrudr DuraPro ABS CF Black
Manufacturer	Extrudr
Product line	DuraPro
Base material	ABS
Category	Engineering
Variant / finish	—
Reinforcement	CF
Color	Black

Governed engineering profile

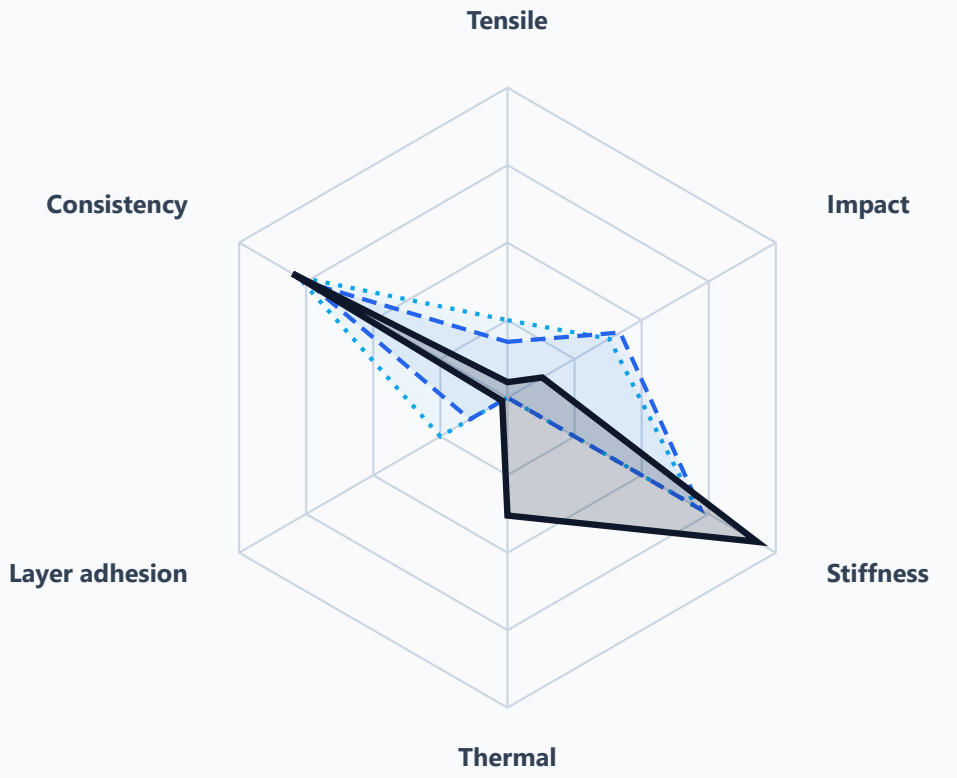
Overall	39/100
Tensile	5/100

Impact	13/100
Stiffness	93/100
Consistency	80/100
Layer adhesion	2/100
Thermal	38/100
Best available axis	stiffness

Engineering score profile



Engineering radar



All axes use existing governed 0–100 engineering scores. Missing axes are shown at zero and remain listed as n/a elsewhere in the report.

Fixture thermal result

75 °C · score 38/100 · method 3dp-thermal-deflection-fixture-v1
Nearby BlueDOT probe-indicated fixture temperature from a non-standard comparative 3DPIceland method; not ASTM D648, ISO 75, specimen temperature, certified HDT or a manufacturer limit.

Material and manufacturer context

Metric	Selected material	Material average	Manufacturer average
Overall	39/100	45/100	47/100
Tensile	5/100	18/100	25/100
Impact	13/100	42/100	38/100
Stiffness	93/100	72/100	70/100
Consistency	80/100	74/100	78/100
Layer adhesion	2/100	14/100	25/100
Thermal	38/100	—	—

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	0.154 MPa	0 MPa	0%	3	3/10
Tensile flat	7.383 MPa	2.075 MPa	28.1%	9	9/10
Impact upright	96.601 kJ/m²	29.949 kJ/m²	31%	10	10/10
Impact flat	159.613 kJ/m²	11.721 kJ/m²	7.3%	10	10/10
Stiffness modulus	2795.64 MPa	—	—	—	—
Stiffness deflection	1.941 mm	—	—	—	—

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
Stiffness	Not recorded
Thermal	Not recorded

Engineering interpretation

Summary: Extrudr DuraPro ABS CF Black has a specialized or limited engineering profile. It is below its material-family average by 6 points and below its manufacturer average by 8,6 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

Data-driven review: Extrudr DuraPro ABS CF Black is best understood as a repeatable material for cosmetic, concept and low-load prototype work. Compared with the current verified dataset, it ranks better than 9% overall, is below the material-family average by 6 points, and is below the manufacturer average by 8,6 points. Its strongest engineering signal is Stiffness, while Layer Adhesion is the main limitation to consider before using it for demanding applications.

BEST FEATURE
Stiffness

MAIN LIMITATION
Layer Adhesion

DATASET POSITION
Better than 9%
213 / 234

Strengths

- Consistency: 80/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 93/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 5/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 13/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 2/100. 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.
- The report should be read as a suitability warning rather than a general-purpose recommendation.

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 tensile load applications
- Avoid high impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	39/100	213 / 234	Better than 9%
Tensile	5/100	226 / 226	Better than 0%
Impact	13/100	200 / 226	Better than 12%
Stiffness	93/100	59 / 223	Better than 74%
Consistency	80/100	76 / 231	Better than 68%
Layer adhesion	2/100	226 / 226	Better than 0%
Thermal	38/100	60 / 209	Better than 72%

Decision guidance

- Use this material mainly for low-load, visual or experimental parts.
- Review the listed alternatives if the application needs stronger overall performance.
- Do not choose it as a tensile-strength benchmark material.
- Avoid selecting it for impact-focused testing or shock-loaded designs.

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0006	Prima Creator PrimaValue Dark Gray ABS Gray	Prima Creator	52/100	24/100	54/100
MAT0202	Siraya Tech Fiberheart White ABS High Temp White	Siraya Tech	49/100	21/100	54/100
MAT0207	Siraya Tech Fiberheart Black ABS Core CF Black	Siraya Tech	49/100	24/100	27/100

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
MAT0006	Prima Creator PrimaValue Dark Gray ABS Gray	Prima Creator	52/100	24/100	54/100
MAT0202	Siraya Tech Fiberheart White ABS High Temp White	Siraya Tech	49/100	21/100	54/100
MAT0207	Siraya Tech Fiberheart Black ABS Core CF Black	Siraya Tech	49/100	24/100	27/100
MAT0003	Prusa3D Buddy3D ABS Black	Prusa3D	48/100	19/100	53/100
MAT0007	FilaFarm Standard ABS Orange	FilaFarm	47/100	—	41/100
MAT0152	Thorwell Standard ABS ABS Yellow	Thorwell	47/100	20/100	53/100
MAT0181	BambuLab Standard Blue ABS Blue	BambuLab	46/100	19/100	53/100
MAT0005	Extrudr DuraPro ABS Blue	Extrudr	44/100	16/100	47/100

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