

Extrudr DuraPro PC/PBT CF Black

Material Engineering Report
MaterialID MAT0030

3DPiceland Engineering Platform
3DPiceland Labs
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RELIABILITY - Bug Fixes and Workflow Reliability
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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.

TEST COVERAGE

Complete

ENGINEERING AXES

6/6

PUBLIC MSRP

\$54.34 USD/kg

Material identity

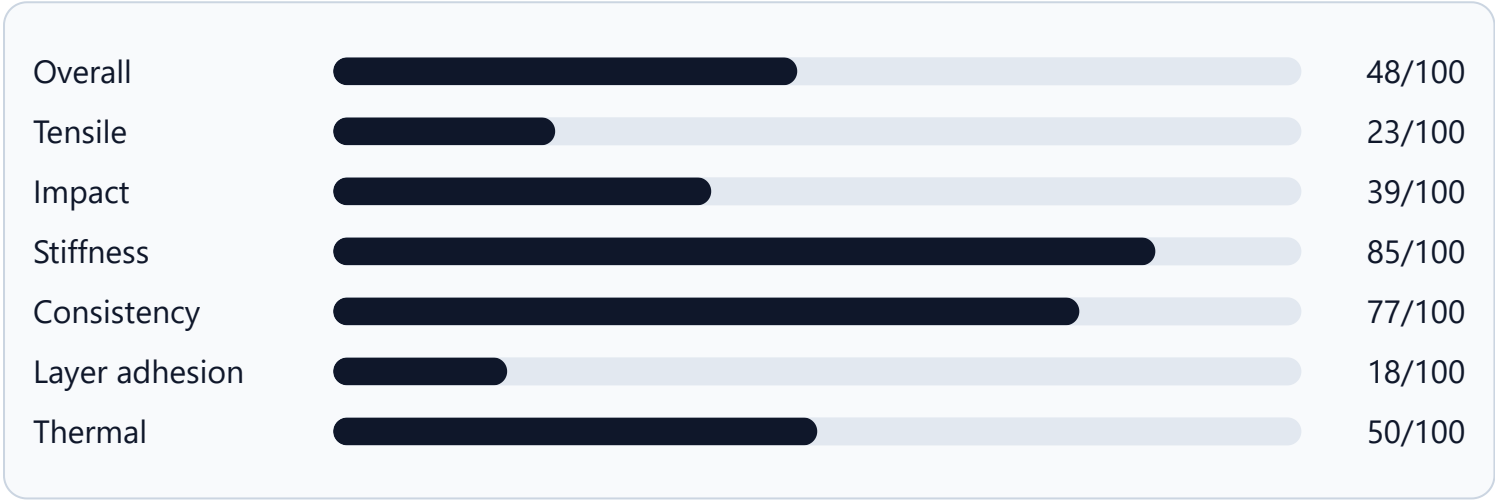
MaterialID	MAT0030
Material	Extrudr DuraPro PC/PBT CF Black
Manufacturer	Extrudr
Product line	DuraPro
Base material	PC/PBT
Category	Engineering
Variant / finish	—
Reinforcement	CF
Color	Black

Governed engineering profile

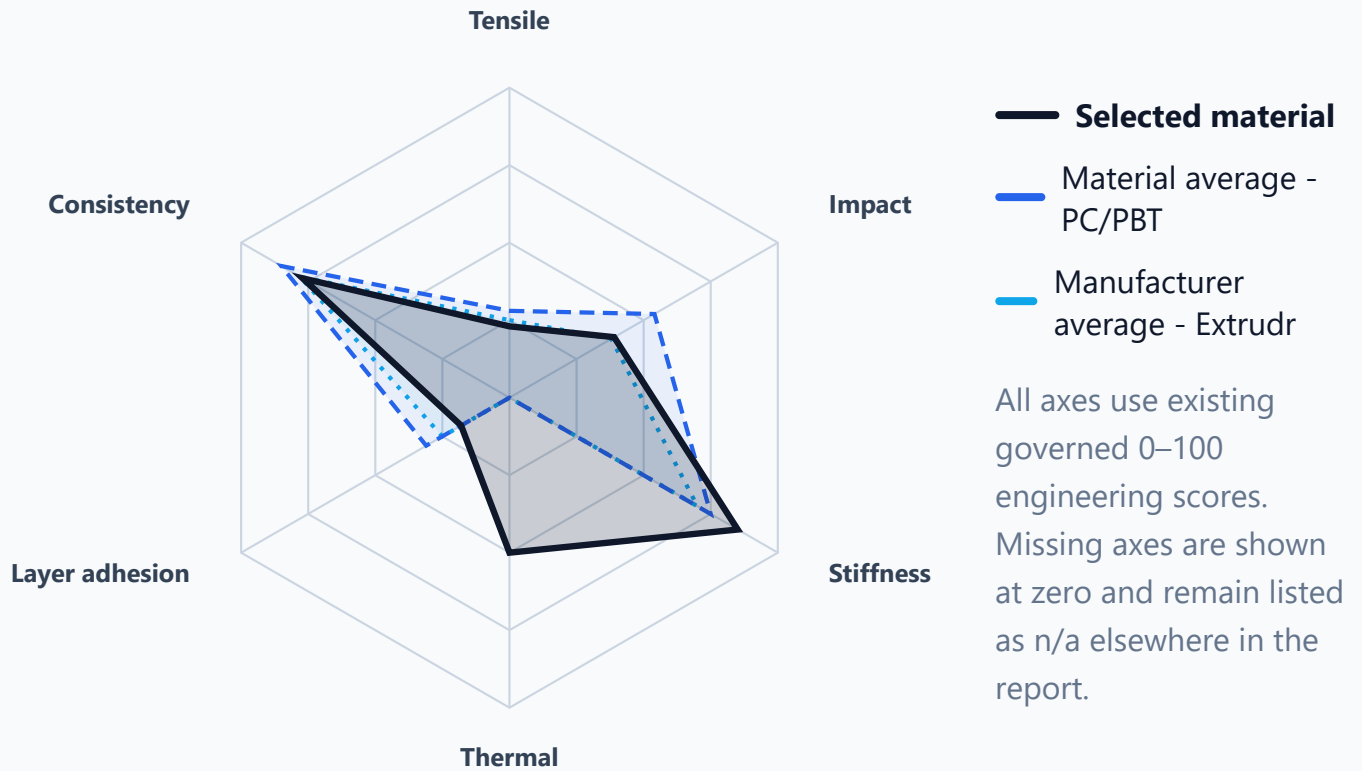
Overall	48/100
Tensile	23/100

Impact	39/100
Stiffness	85/100
Consistency	77/100
Layer adhesion	18/100
Thermal	50/100
Best available axis	stiffness

Engineering score profile



Engineering radar



Fixture thermal result

100 °C · score 50/100 · 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	48/100	55/100	47/100
Tensile	23/100	28/100	25/100
Impact	39/100	54/100	38/100
Stiffness	85/100	75/100	70/100
Consistency	77/100	85/100	78/100
Layer adhesion	18/100	31/100	25/100
Thermal	50/100	—	—

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	5.537 MPa	2.459 MPa	44.4%	10	10/10
Tensile flat	30.531 MPa	2.971 MPa	9.7%	10	10/10
Impact upright	99.942 kJ/m ²	16.213 kJ/m ²	16.2%	10	10/10
Impact flat	683.759 kJ/m ²	140.88 kJ/m ²	20.6%	10	10/10
Stiffness modulus	2544.996 MPa	—	—	—	—
Stiffness deflection	2.132 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 PC/PBT CF Black has a specialized or limited engineering profile. It is below its material-family average by 6,2 points and above its manufacturer average by 1,2 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

Data-driven review: Extrudr DuraPro PC/PBT 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 58% overall, is below the material-family average by 6,2 points, and is roughly aligned with the manufacturer average. 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 58%
100 / 234

Strengths

- Consistency: 77/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 85/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 23/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 39/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 18/100. 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

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	48/100	100 / 234	Better than 58%
Tensile	23/100	160 / 226	Better than 30%
Impact	39/100	50 / 226	Better than 78%
Stiffness	85/100	97 / 223	Better than 57%
Consistency	77/100	132 / 231	Better than 43%
Layer adhesion	18/100	144 / 226	Better than 37%
Thermal	50/100	15 / 209	Better than 93%

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.

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0031	Extrudr DuraPro Neon Green PC/PBT Green	Extrudr	61/100	33/100	70/100

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
MAT0031	Extrudr DuraPro Neon Green PC/PBT Green	Extrudr	61/100	33/100	70/100

Public links

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

Methodology and limitations

Results are comparative 3DPlceland 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](#)