



Extrudr DuraPro Black PA12 CF Black

Material Engineering Report
MaterialID MAT0196

3DPiceland Engineering Platform
3DPiceland Labs
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WORKFLOW-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

\$76.06 USD/kg

Material identity

MaterialID	MAT0196
Material	Extrudr DuraPro Black PA12 CF Black
Manufacturer	Extrudr
Product line	DuraPro
Base material	PA12
Category	Engineering
Variant / finish	—
Reinforcement	CF
Color	Black

Governed engineering profile

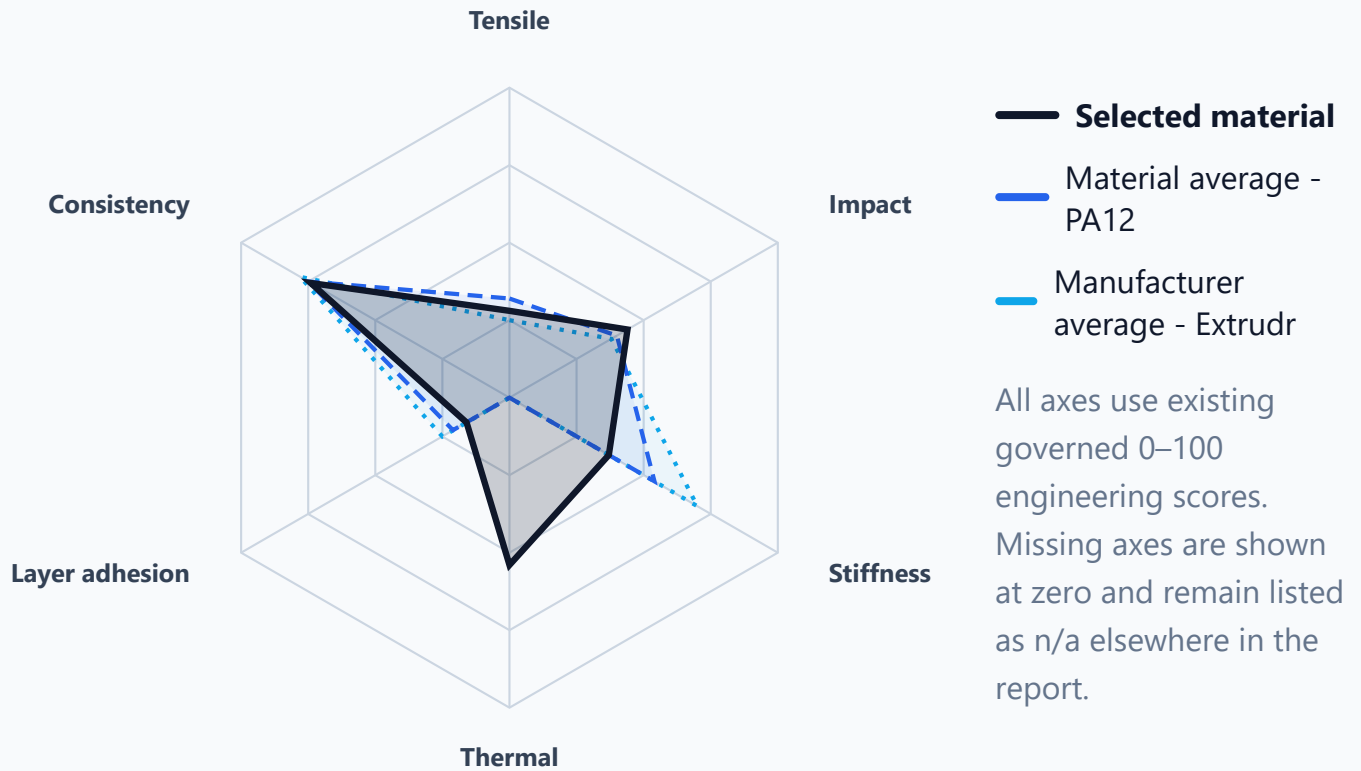
Overall	40/100
Tensile	28/100

Impact	44/100
Stiffness	37/100
Consistency	74/100
Layer adhesion	16/100
Thermal	54/100
Best available axis	consistency

Engineering score profile



Engineering radar



Fixture thermal result

107 °C · score 54/100 · 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	40/100	45/100	47/100
Tensile	28/100	32/100	25/100
Impact	44/100	40/100	38/100
Stiffness	37/100	54/100	70/100
Consistency	74/100	75/100	78/100
Layer adhesion	16/100	21/100	25/100
Thermal	54/100	—	—

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	6.135 MPa	3.945 MPa	64.3%	9	9/10
Tensile flat	37.96 MPa	5.403 MPa	14.2%	10	10/10
Impact upright	126.335 kJ/m ²	25.716 kJ/m ²	20.4%	10	10/10
Impact flat	762.529 kJ/m ²	26.557 kJ/m ²	3.5%	10	10/10
Stiffness modulus	1104.864 MPa	—	—	—	—
Stiffness deflection	4.912 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 Black PA12 CF Black has a specialized or limited engineering profile. It is below its material-family average by 4,7 points and below its manufacturer average by 7,4 points. Its strongest measured axis is Consistency, while the weakest axis is Layer Adhesion.

Data-driven review: Extrudr DuraPro Black PA12 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 13% overall, is below the material-family average by 4,7 points, and is below the manufacturer average by 7,4 points. Its strongest engineering signal is Consistency, while Layer Adhesion is the main limitation to consider before using it for demanding applications.

BEST FEATURE

Consistency

MAIN LIMITATION

Layer Adhesion

DATASET POSITION

Better than 13%
205 / 234

Strengths

- Consistency: 74/100. Repeatability is one of the stronger signals in this material profile.

Limitations

- Tensile: 28/100. Avoid using this as the primary choice for tensile-loaded parts.
- Stiffness: 37/100. Expect less shape stability than the stronger materials in the same family.
- Layer adhesion: 16/100. Z-axis performance should be treated with caution.

Engineering trade-offs

- Good repeatability does not compensate for low tensile capability in load-bearing designs.
- The report should be read as a suitability warning rather than a general-purpose recommendation.

Recommended applications

- 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	40/100	205 / 234	Better than 13%

Metric	Score	Rank	Percentile
Tensile	28/100	121 / 226	Better than 47%
Impact	44/100	40 / 226	Better than 83%
Stiffness	37/100	220 / 223	Better than 2%
Consistency	74/100	169 / 231	Better than 27%
Layer adhesion	16/100	160 / 226	Better than 30%
Thermal	54/100	13 / 209	Better than 94%

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
MAT0214	Eryone Standard Black PA12 CF Black	Eryone	53/100	43/100	46/100
MAT0167	BambuLab Basic PA12 PAHT CF Black	BambuLab	51/100	39/100	41/100
MAT0020	Extrudr DuraPro PA12 Black	Extrudr	50/100	34/100	50/100

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
MAT0214	Eryone Standard Black PA12 CF Black	Eryone	53/100	43/100	46/100
MAT0167	BambuLab Basic PA12 PAHT CF Black	BambuLab	51/100	39/100	41/100
MAT0020	Extrudr DuraPro PA12 Black	Extrudr	50/100	34/100	50/100
MAT0209	Eryone Standard Black PA12 GF Black	Eryone	49/100	33/100	67/100

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0022	Fillamentum FX256 PA12 Clear	Fillamentum	45/100	28/100	47/100
MAT0019	MatterHackers NylonX PA12 CF Black	MatterHackers	42/100	32/100	22/100
MAT0239	Yasin Standard Black PA12 CF Black	Yasin	41/100	33/100	25/100
MAT0021	Yasin Standard Black PA12 Black	Yasin	31/100	22/100	13/100

Public links

[Manufacturer website](#) [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](#)