

3D Fuel PCTG Cobalt Blue PCTG Pro Blue

Material Engineering Report
MaterialID MAT0041

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

Complete

ENGINEERING AXES

6/6

PUBLIC MSRP

\$29.95 USD/kg

Material identity

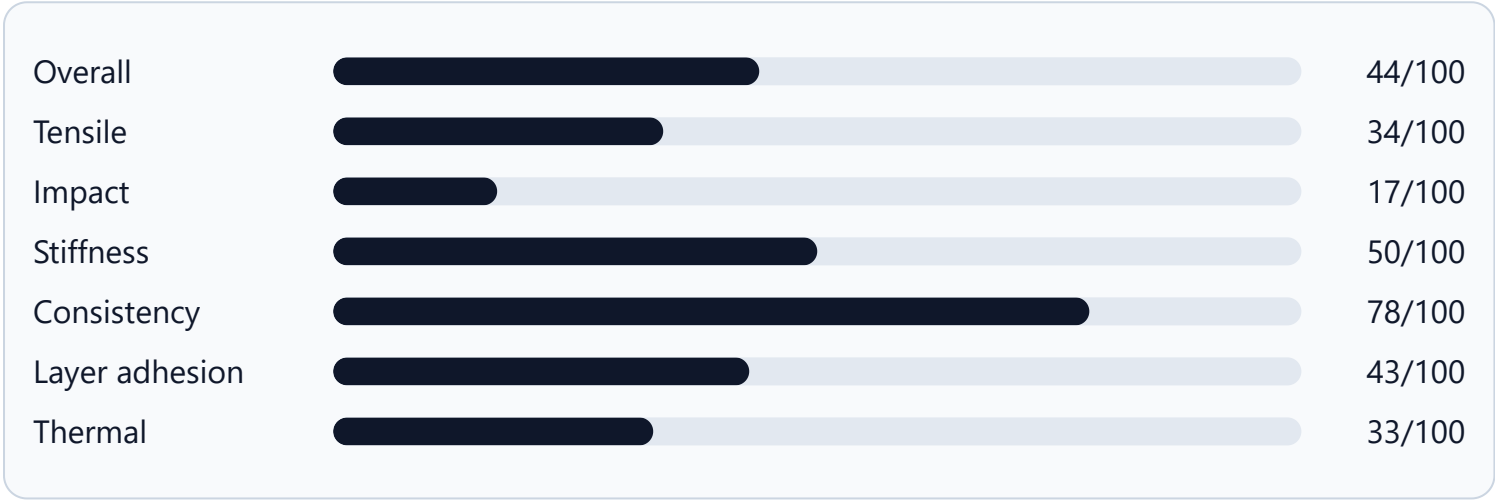
MaterialID	MAT0041
Material	3D Fuel PCTG Cobalt Blue PCTG Pro Blue
Manufacturer	3D Fuel
Product line	PCTG
Base material	PCTG
Category	Standard
Variant / finish	Pro
Reinforcement	—
Color	Blue

Governed engineering profile

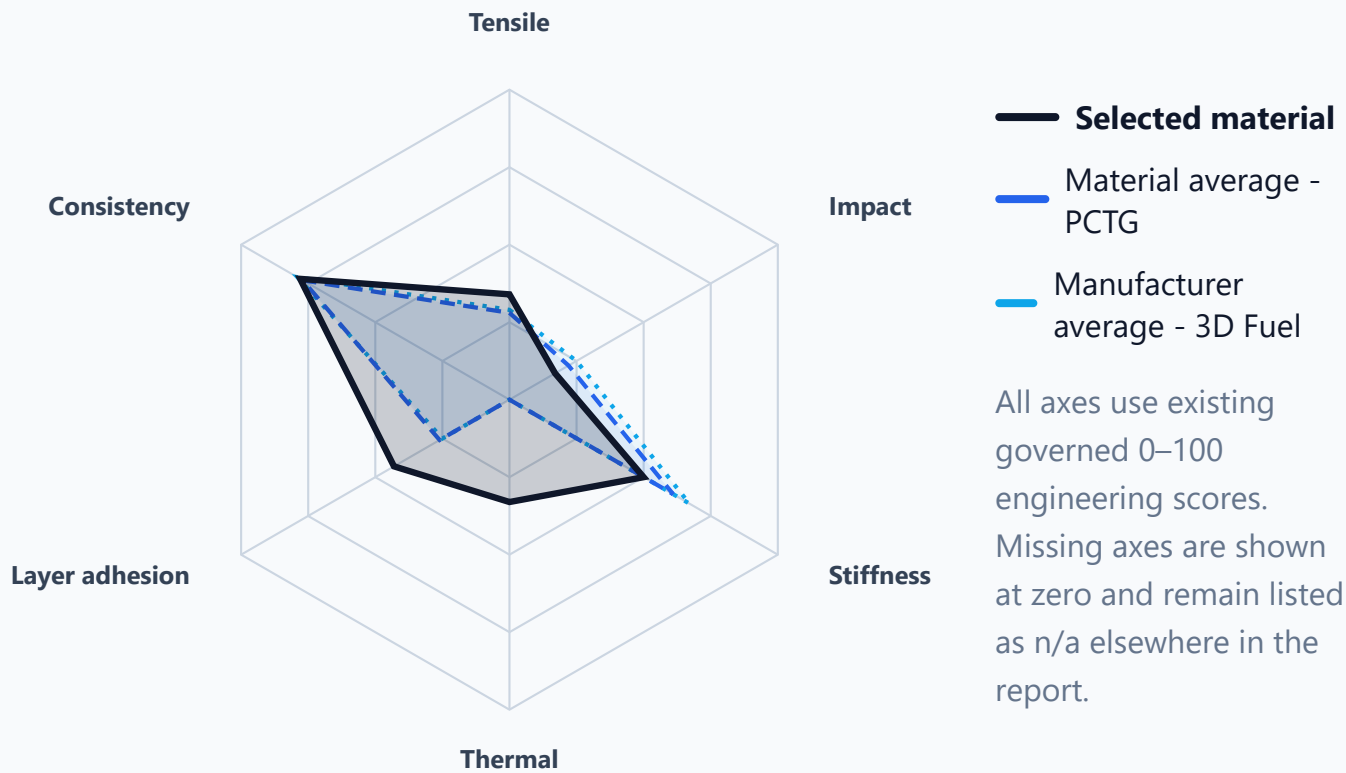
Overall	44/100
Tensile	34/100

Impact	17/100
Stiffness	50/100
Consistency	78/100
Layer adhesion	43/100
Thermal	33/100
Best available axis	consistency

Engineering score profile



Engineering radar



Fixture thermal result

65 °C · score 33/100 · 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	44/100	43/100	45/100
Tensile	34/100	28/100	29/100
Impact	17/100	22/100	25/100
Stiffness	50/100	61/100	67/100
Consistency	78/100	77/100	79/100
Layer adhesion	43/100	26/100	25/100
Thermal	33/100	—	—

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	16.058 MPa	4.492 MPa	28%	10	10/10
Tensile flat	37.56 MPa	4.709 MPa	12.5%	10	10/10
Impact upright	77.934 kJ/m ²	20.339 kJ/m ²	26.1%	10	10/10
Impact flat	267.777 kJ/m ²	57.423 kJ/m ²	21.4%	10	10/10
Stiffness modulus	1512.395 MPa	—	—	—	—
Stiffness deflection	3.588 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: 3D Fuel PCTG Cobalt Blue PCTG Pro Blue has a specialized or limited engineering profile. It is above its material-family average by 1,6 points and below its manufacturer average by 0,4 points. Its strongest measured axis is Consistency, while the weakest axis is Impact.

Data-driven review: 3D Fuel PCTG Cobalt Blue PCTG Pro Blue 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 35% overall, is roughly aligned with the material-family average, and is roughly aligned with the manufacturer average. Its strongest engineering signal is Consistency, while Impact is the main limitation to consider before using it for demanding applications.

BEST FEATURE

Consistency

MAIN LIMITATION

Impact

DATASET POSITION

Better than 35%
154 / 234

Strengths

- Layer adhesion: 43/100. Z-axis bonding is better than the material-family context.
- Consistency: 78/100. Repeatability is one of the stronger signals in this material profile.
- Tensile: 34/100. Tensile behavior is competitive against the material-family context.

Limitations

- Tensile: 34/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 17/100. Avoid high impact or shock-loaded components without additional validation.
- Stiffness: 50/100. Expect less shape stability than the stronger materials in the same family.

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
- Avoid high impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	44/100	154 / 234	Better than 35%

Metric	Score	Rank	Percentile
Tensile	34/100	63 / 226	Better than 73%
Impact	17/100	165 / 226	Better than 27%
Stiffness	50/100	205 / 223	Better than 9%
Consistency	78/100	115 / 231	Better than 51%
Layer adhesion	43/100	41 / 226	Better than 82%
Thermal	33/100	73 / 209	Better than 66%

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
MAT0039	3D Fuel PCTG PCTG Pro CF Black	3D Fuel	48/100	27/100	26/100

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
MAT0039	3D Fuel PCTG PCTG Pro CF Black	3D Fuel	48/100	27/100	26/100
MAT0227	Spectrum Smart Sky Blue PCTG Blue	Spectrum	43/100	34/100	23/100
MAT0040	3D Fuel PCTG Toolbox Red PCTG Pro GF Red	3D Fuel	42/100	25/100	31/100
MAT0238	Yasin Standard Green PCTG Green	Yasin	37/100	22/100	12/100

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](#)