

Spectrum Smart Sky Blue PCTG Blue

Material Engineering Report
MaterialID MAT0227

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

\$39.92 USD/kg

Material identity

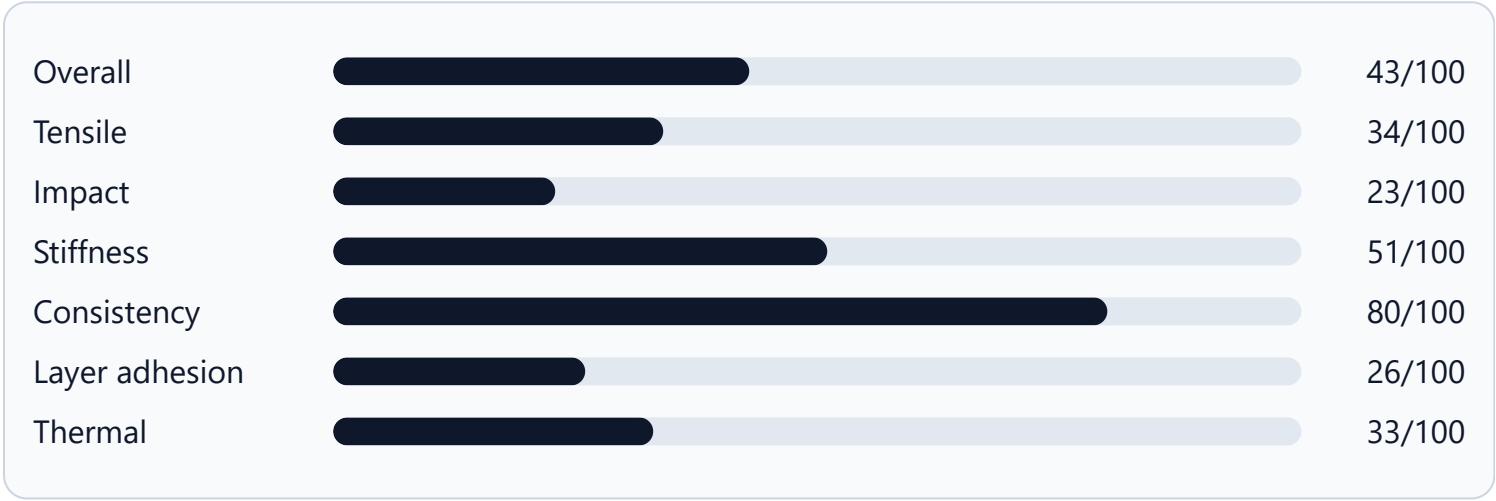
MaterialID	MAT0227
Material	Spectrum Smart Sky Blue PCTG Blue
Manufacturer	Spectrum
Product line	Smart
Base material	PCTG
Category	Standard
Variant / finish	—
Reinforcement	—
Color	Blue

Governed engineering profile

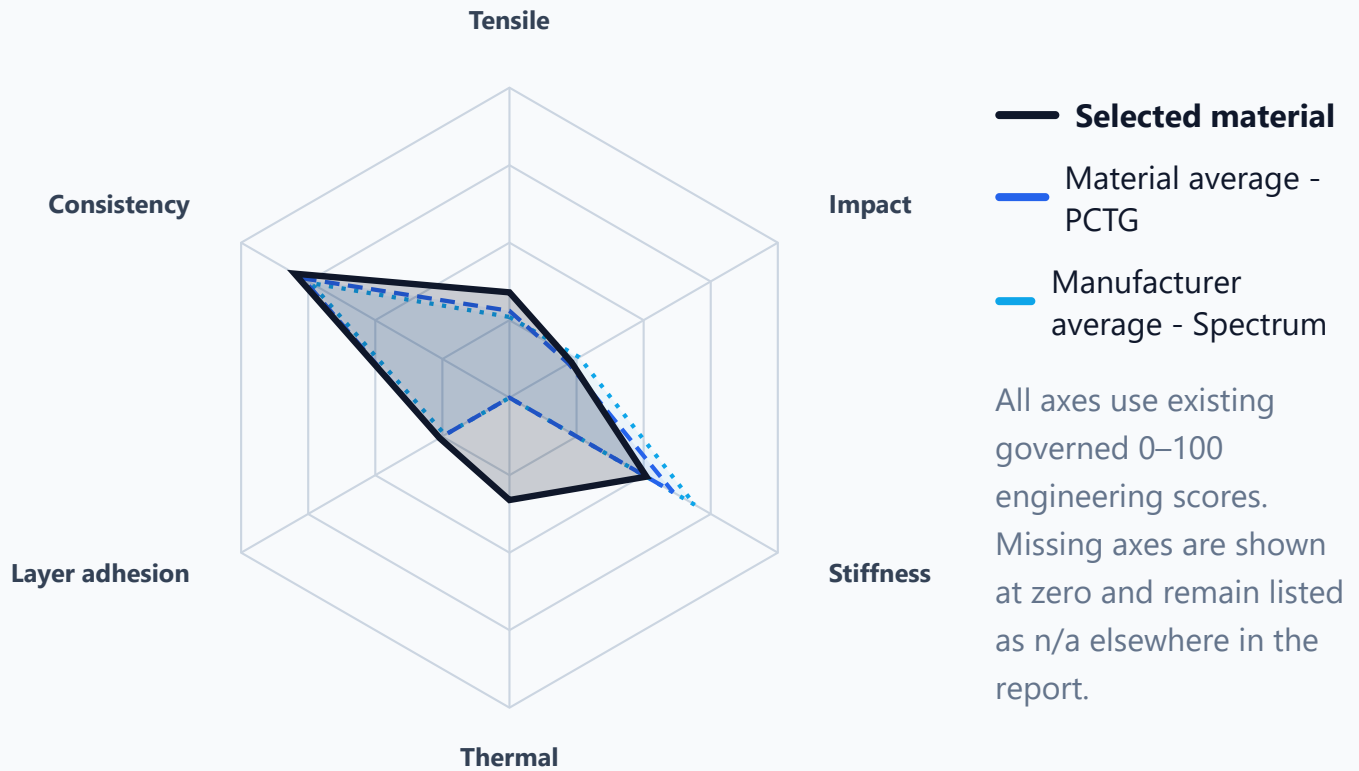
Overall	43/100
Tensile	34/100

Impact	23/100
Stiffness	51/100
Consistency	80/100
Layer adhesion	26/100
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	43/100	43/100	44/100
Tensile	34/100	28/100	26/100
Impact	23/100	22/100	26/100
Stiffness	51/100	61/100	69/100
Consistency	80/100	77/100	74/100
Layer adhesion	26/100	26/100	24/100
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	11.105 MPa	3.265 MPa	29.4%	10	10/10
Tensile flat	42.851 MPa	3.61 MPa	8.4%	10	10/10
Impact upright	143.424 kJ/m ²	32.105 kJ/m ²	22.4%	10	10/10
Impact flat	319.197 kJ/m ²	60.75 kJ/m ²	19%	10	10/10
Stiffness modulus	1537.602 MPa	—	—	—	—
Stiffness deflection	3.529 mm	—	—	—	—

Measurement provenance

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

Module	Measured date
Tensile	2026-08-16
Impact	2026-08-16
Stiffness	2026-08-16
Thermal	2026-08-15

Engineering interpretation

Summary: Spectrum Smart Sky Blue PCTG Blue has a specialized or limited engineering profile. It is above its material-family average by 0,1 points and below its manufacturer average by 0,7 points. Its strongest measured axis is Consistency, while the weakest axis is Impact.

Data-driven review: Spectrum Smart Sky Blue PCTG 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 27% 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 27%
171 / 234

Strengths

- Consistency: 80/100. 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: 23/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 26/100. 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
- Avoid high impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	43/100	171 / 234	Better than 27%

Metric	Score	Rank	Percentile
Tensile	34/100	61 / 226	Better than 73%
Impact	23/100	106 / 226	Better than 54%
Stiffness	51/100	202 / 223	Better than 10%
Consistency	80/100	78 / 231	Better than 67%
Layer adhesion	26/100	100 / 226	Better than 56%
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
MAT0041	3D Fuel PCTG Cobalt Blue PCTG Pro Blue	3D Fuel	44/100	34/100	17/100
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](#) [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](#)