



Siraya Tech Fiberheart Black TPU GF Black

Material Engineering Report
MaterialID MAT0200

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

Partial

ENGINEERING AXES

5/6

PUBLIC MSRP

\$35.19 USD/kg

Material identity

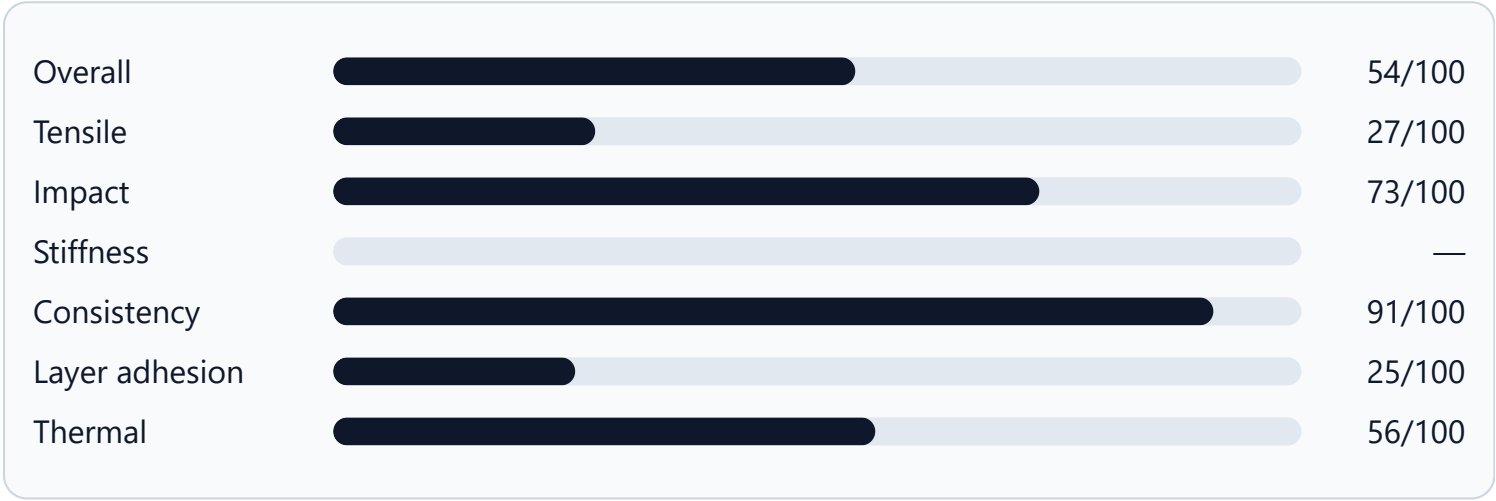
MaterialID	MAT0200
Material	Siraya Tech Fiberheart Black TPU GF Black
Manufacturer	Siraya Tech
Product line	Fiberheart
Base material	TPU
Category	Flexible
Variant / finish	—
Reinforcement	GF
Color	Black

Governed engineering profile

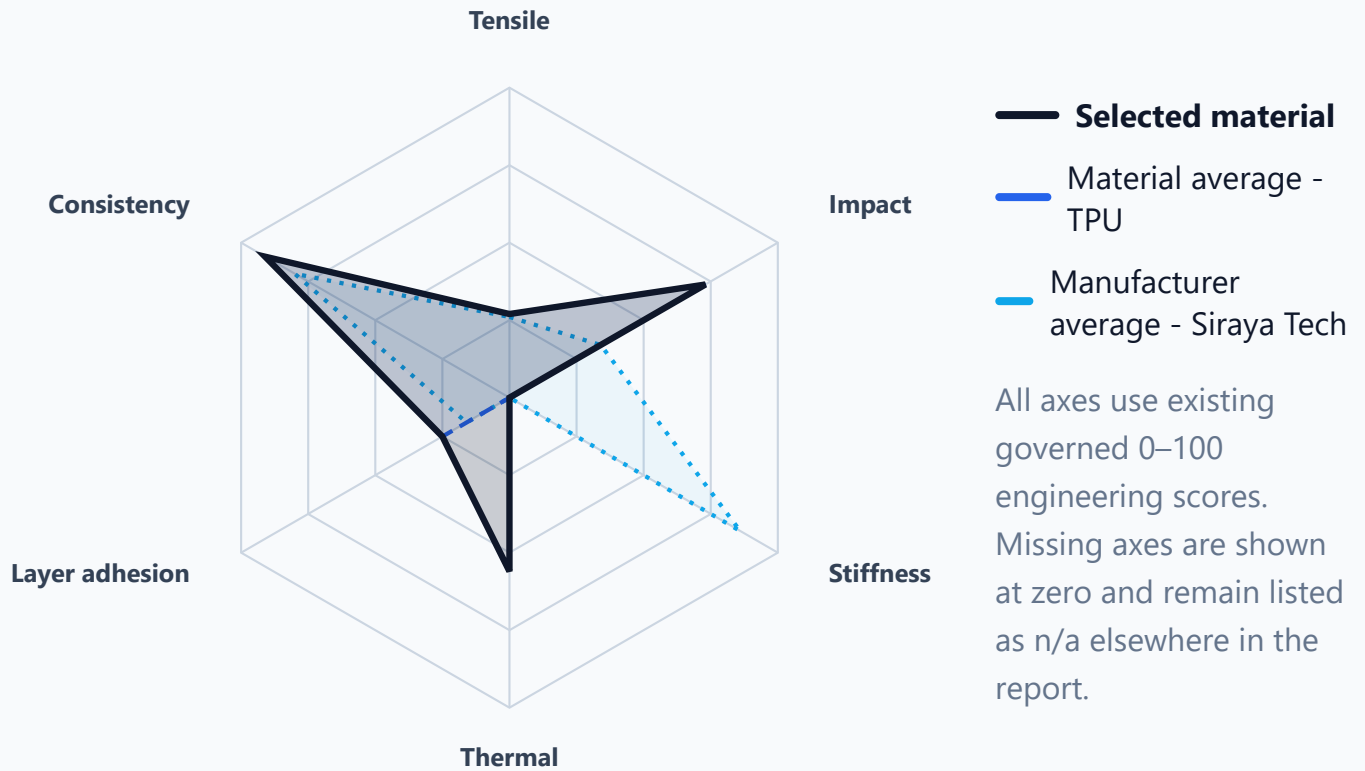
Overall	54/100
Tensile	27/100

Impact	73/100
Stiffness	—
Consistency	91/100
Layer adhesion	25/100
Thermal	56/100
Best available axis	consistency

Engineering score profile



Engineering radar



Fixture thermal result

111 °C · score 56/100 · 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	54/100	54/100	48/100
Tensile	27/100	27/100	26/100
Impact	73/100	73/100	34/100
Stiffness	—	—	86/100
Consistency	91/100	91/100	80/100
Layer adhesion	25/100	25/100	16/100
Thermal	56/100	—	—

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	8.736 MPa	1.672 MPa	19.1%	10	10/10
Tensile flat	34.73 MPa	1.932 MPa	5.6%	10	10/10
Impact upright	301.293 kJ/m ²	20.719 kJ/m ²	6.9%	10	10/10
Impact flat	1158.647 kJ/m ²	31.908 kJ/m ²	2.8%	10	10/10
Stiffness modulus	—	—	—	—	—
Stiffness deflection	—	—	—	—	—

Measurement provenance

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

Module	Measured date
Tensile	0202-01-01
Impact	Not recorded
Stiffness	Not recorded
Thermal	Not recorded

Engineering interpretation

Summary: Siraya Tech Fiberheart Black TPU GF Black has a specialized or limited engineering profile. It is above its material-family average by 0 points and above its manufacturer average by 6,7 points. Its strongest measured axis is Consistency, while the weakest axis is Layer Adhesion.

Data-driven review: Siraya Tech Fiberheart Black TPU GF 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 83% overall, is roughly aligned with the material-family average, and is above the manufacturer average by 6,7 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 83%
40 / 234

Strengths

- Consistency: 91/100. Repeatability is one of the stronger signals in this material profile.
- Impact: 73/100. Impact behavior is competitive against the material-family context.

Limitations

- Tensile: 27/100. Avoid using this as the primary choice for tensile-loaded parts.
- Layer adhesion: 25/100. Z-axis performance should be treated with caution.

Engineering trade-offs

- Good repeatability does not compensate for low tensile capability in load-bearing designs.

Recommended applications

- Impact-aware parts where toughness matters
- 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	54/100	40 / 234	Better than 83%
Tensile	27/100	126 / 226	Better than 45%

Metric	Score	Rank	Percentile
Impact	73/100	1 / 226	Better than 100%
Stiffness	—	—	—
Consistency	91/100	2 / 231	Better than 100%
Layer adhesion	25/100	103 / 226	Better than 55%
Thermal	56/100	12 / 209	Better than 95%

Decision guidance

- Use this material for moderate requirements after checking the weakest axis.
- Do not choose it as a tensile-strength benchmark material.

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
No stronger same-base-material alternatives were identified in the current governed dataset.					

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
No same-material peers with governed score context are available.					

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](#)