

Siraya Tech Fiberheart Black PET CF Black

Material Engineering Report
MaterialID MAT0195

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

\$30.36 USD/kg

Material identity

MaterialID	MAT0195
Material	Siraya Tech Fiberheart Black PET CF Black
Manufacturer	Siraya Tech
Product line	Fiberheart
Base material	PET
Category	Engineering
Variant / finish	—
Reinforcement	CF
Color	Black

Governed engineering profile

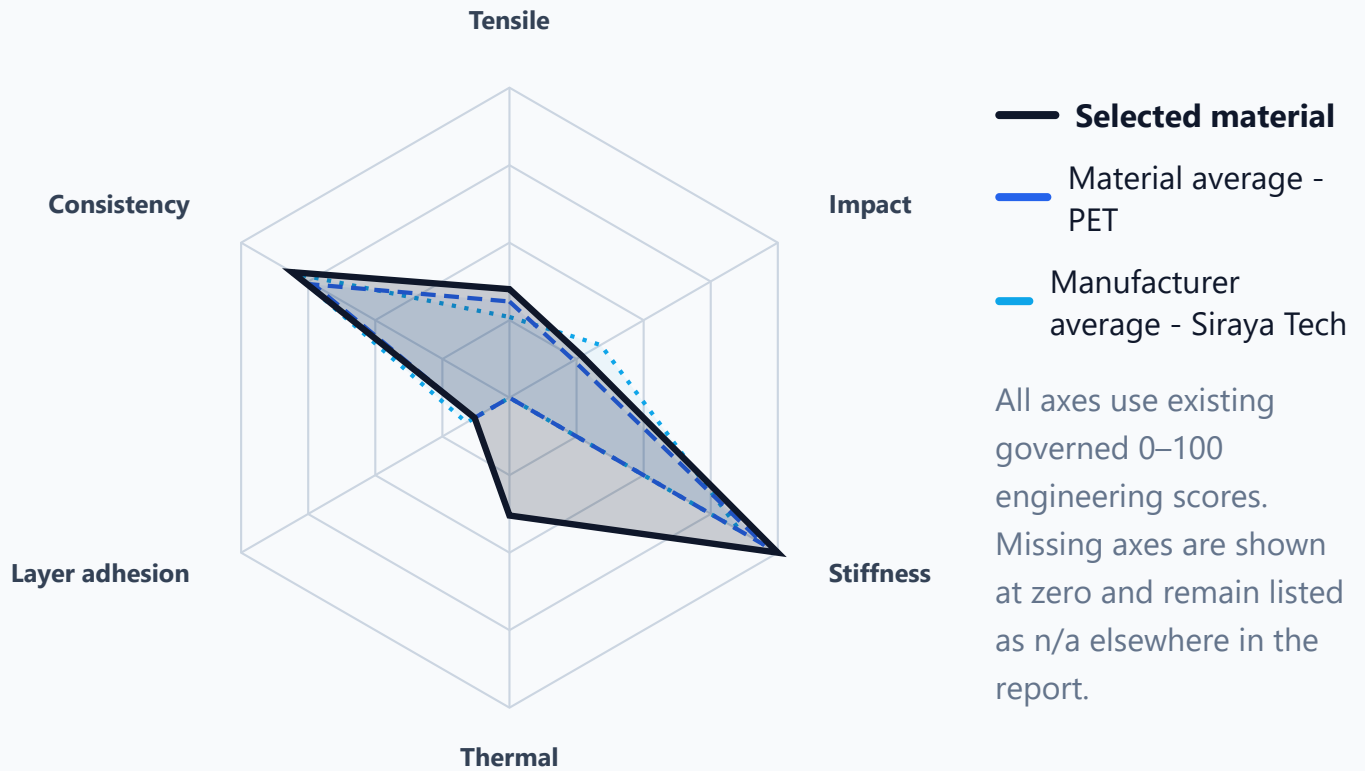
Overall	51/100
Tensile	35/100

Impact	27/100
Stiffness	100/100
Consistency	81/100
Layer adhesion	13/100
Thermal	38/100
Best available axis	stiffness

Engineering score profile



Engineering radar



Fixture thermal result

75 °C · score 38/100 · 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	51/100	47/100	48/100
Tensile	35/100	31/100	26/100
Impact	27/100	24/100	34/100
Stiffness	100/100	95/100	86/100
Consistency	81/100	73/100	80/100
Layer adhesion	13/100	13/100	16/100
Thermal	38/100	—	—

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	6.614 MPa	2.211 MPa	33.4%	10	10/10
Tensile flat	50.08 MPa	8.371 MPa	16.7%	10	10/10
Impact upright	171.601 kJ/m ²	12.153 kJ/m ²	7.1%	10	10/10
Impact flat	362.721 kJ/m ²	63.291 kJ/m ²	17.4%	10	10/10
Stiffness modulus	3237.057 MPa	—	—	—	—
Stiffness deflection	1.676 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: Siraya Tech Fiberheart Black PET CF Black has a specialized or limited engineering profile. It is above its material-family average by 4,1 points and above its manufacturer average by 3,8 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

Data-driven review: Siraya Tech Fiberheart Black PET 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 71% overall, is above the material-family average by 4,1 points, and is above the manufacturer average by 3,8 points. 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 71%
69 / 234

Strengths

- Consistency: 81/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 100/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 35/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 27/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 13/100. 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.

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 impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	51/100	69 / 234	Better than 71%

Metric	Score	Rank	Percentile
Tensile	35/100	41 / 226	Better than 82%
Impact	27/100	83 / 226	Better than 64%
Stiffness	100/100	1 / 223	Better than 100%
Consistency	81/100	64 / 231	Better than 73%
Layer adhesion	13/100	178 / 226	Better than 22%
Thermal	38/100	60 / 209	Better than 72%

Decision guidance

- Use this material for moderate requirements after checking the weakest axis.
- Avoid selecting it for impact-focused testing or shock-loaded designs.

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
MAT0166	BambuLab Basic PET CF Black	BambuLab	46/100	25/100	21/100
MAT0206	Siraya Tech Fiberheart Brown PET GF Brown	Siraya Tech	45/100	32/100	24/100

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](#)