

Siraya Tech Fiberheart Black ABS CF Black

Material Engineering Report
MaterialID MAT0199

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

\$32.39 USD/kg

Material identity

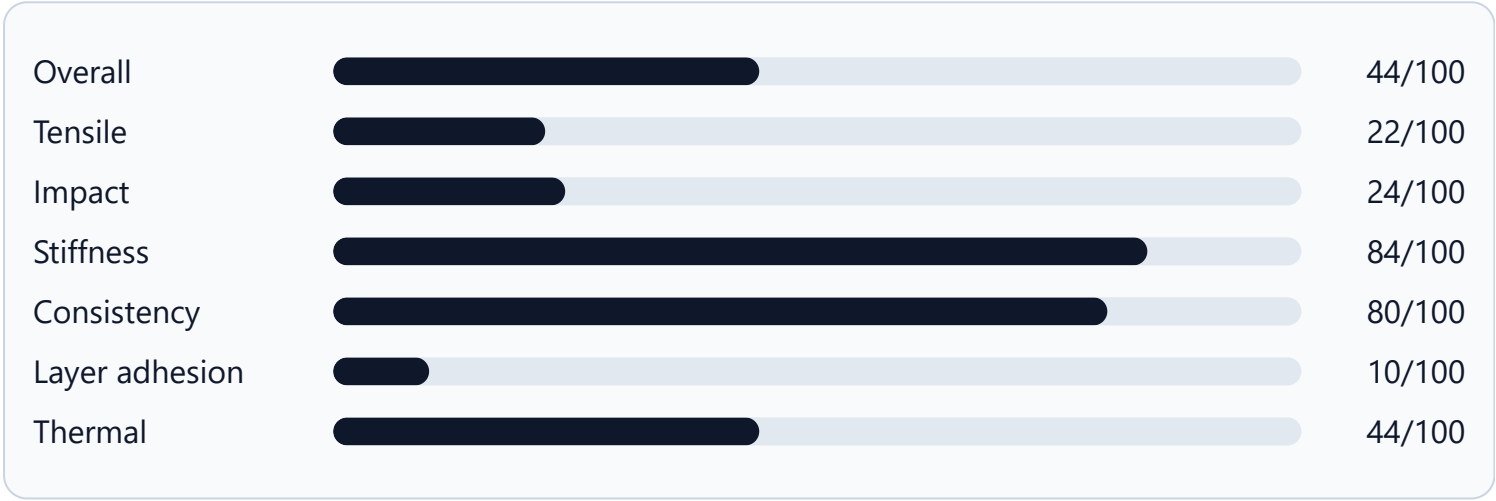
MaterialID	MAT0199
Material	Siraya Tech Fiberheart Black ABS CF Black
Manufacturer	Siraya Tech
Product line	Fiberheart
Base material	ABS
Category	Engineering
Variant / finish	—
Reinforcement	CF
Color	Black

Governed engineering profile

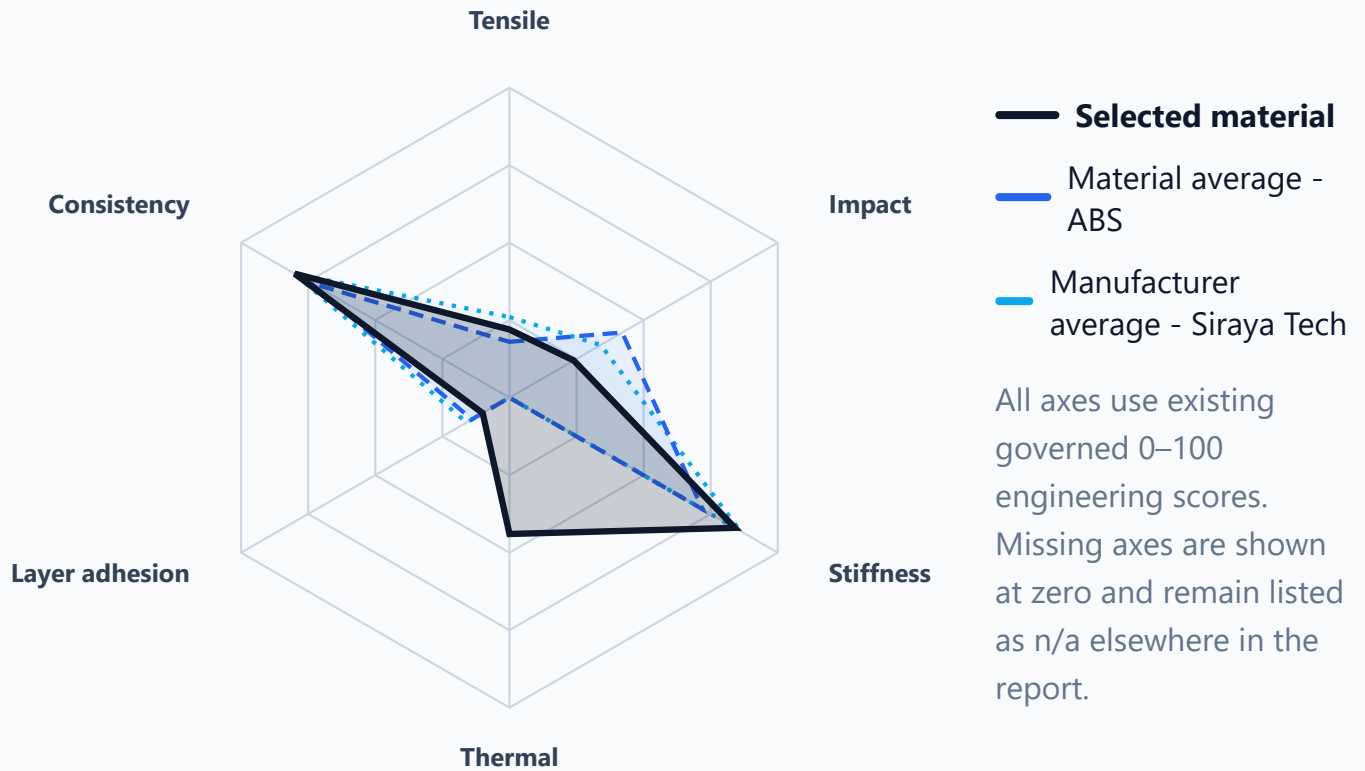
Overall	44/100
Tensile	22/100

Impact	24/100
Stiffness	84/100
Consistency	80/100
Layer adhesion	10/100
Thermal	44/100
Best available axis	stiffness

Engineering score profile



Engineering radar



Fixture thermal result

88 °C · score 44/100 · 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	45/100	48/100
Tensile	22/100	18/100	26/100
Impact	24/100	42/100	34/100
Stiffness	84/100	72/100	86/100
Consistency	80/100	74/100	80/100
Layer adhesion	10/100	14/100	16/100
Thermal	44/100	—	—

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	3.264 MPa	1.77 MPa	54.2%	9	9/10
Tensile flat	31.561 MPa	3.414 MPa	10.8%	10	10/10
Impact upright	159.617 kJ/m ²	14.787 kJ/m ²	9.3%	10	10/10
Impact flat	316.733 kJ/m ²	18.429 kJ/m ²	5.8%	10	10/10
Stiffness modulus	2527.565 MPa	—	—	—	—
Stiffness deflection	2.147 mm	—	—	—	—

Measurement provenance

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

Module	Measured date
Tensile	2024-01-01
Impact	Not recorded
Stiffness	Not recorded
Thermal	Not recorded

Engineering interpretation

Summary: Siraya Tech Fiberheart Black ABS CF Black has a specialized or limited engineering profile. It is below its material-family average by 0,7 points and below its manufacturer average by 3,6 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

Data-driven review: Siraya Tech Fiberheart Black ABS 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 32% overall, is roughly aligned with the material-family average, and is below the manufacturer average by 3,6 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 32%
160 / 234

Strengths

- Consistency: 80/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 84/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 22/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 24/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 10/100. 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.
- The report should be read as a suitability warning rather than a general-purpose recommendation.

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 tensile load applications
- Avoid high impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	44/100	160 / 234	Better than 32%
Tensile	22/100	170 / 226	Better than 25%
Impact	24/100	97 / 226	Better than 58%
Stiffness	84/100	100 / 223	Better than 56%
Consistency	80/100	90 / 231	Better than 61%
Layer adhesion	10/100	201 / 226	Better than 12%
Thermal	44/100	30 / 209	Better than 86%

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
MAT0006	Prima Creator PrimaValue Dark Gray ABS Gray	Prima Creator	52/100	24/100	54/100
MAT0202	Siraya Tech Fiberheart White ABS High Temp White	Siraya Tech	49/100	21/100	54/100
MAT0207	Siraya Tech Fiberheart Black ABS Core CF Black	Siraya Tech	49/100	24/100	27/100

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
MAT0006	Prima Creator PrimaValue Dark Gray ABS Gray	Prima Creator	52/100	24/100	54/100
MAT0202	Siraya Tech Fiberheart White ABS High Temp White	Siraya Tech	49/100	21/100	54/100
MAT0207	Siraya Tech Fiberheart Black ABS Core CF Black	Siraya Tech	49/100	24/100	27/100
MAT0003	Prusa3D Buddy3D ABS Black	Prusa3D	48/100	19/100	53/100
MAT0007	FilaFarm Standard ABS Orange	FilaFarm	47/100	—	41/100
MAT0152	Thorwell Standard ABS ABS Yellow	Thorwell	47/100	20/100	53/100
MAT0181	BambuLab Standard Blue ABS Blue	BambuLab	46/100	19/100	53/100
MAT0005	Extrudr DuraPro ABS Blue	Extrudr	44/100	16/100	47/100

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](#)