

Spectrum The Filament Vivid Red PLA Hight Temp Red

Material Engineering Report
MaterialID MAT0224

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

\$33.52 USD/kg

Material identity

MaterialID	MAT0224
Material	Spectrum The Filament Vivid Red PLA Hight Temp Red
Manufacturer	Spectrum
Product line	The Filament
Base material	PLA
Category	Standard
Variant / finish	Hight Temp
Reinforcement	—
Color	Red

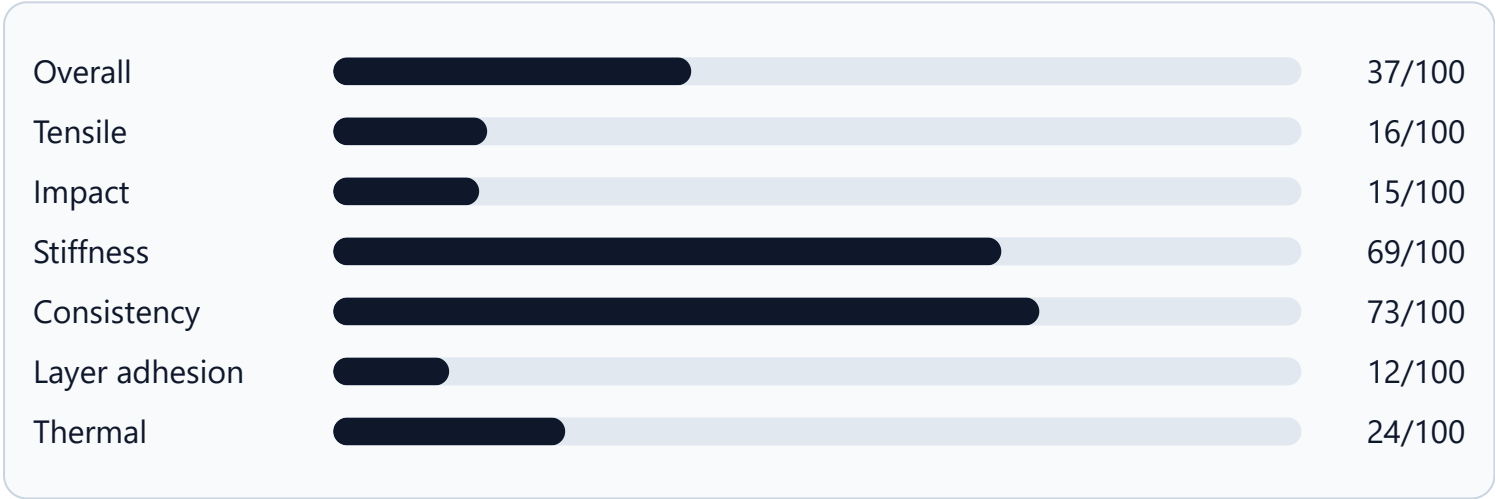
Governed engineering profile

Overall

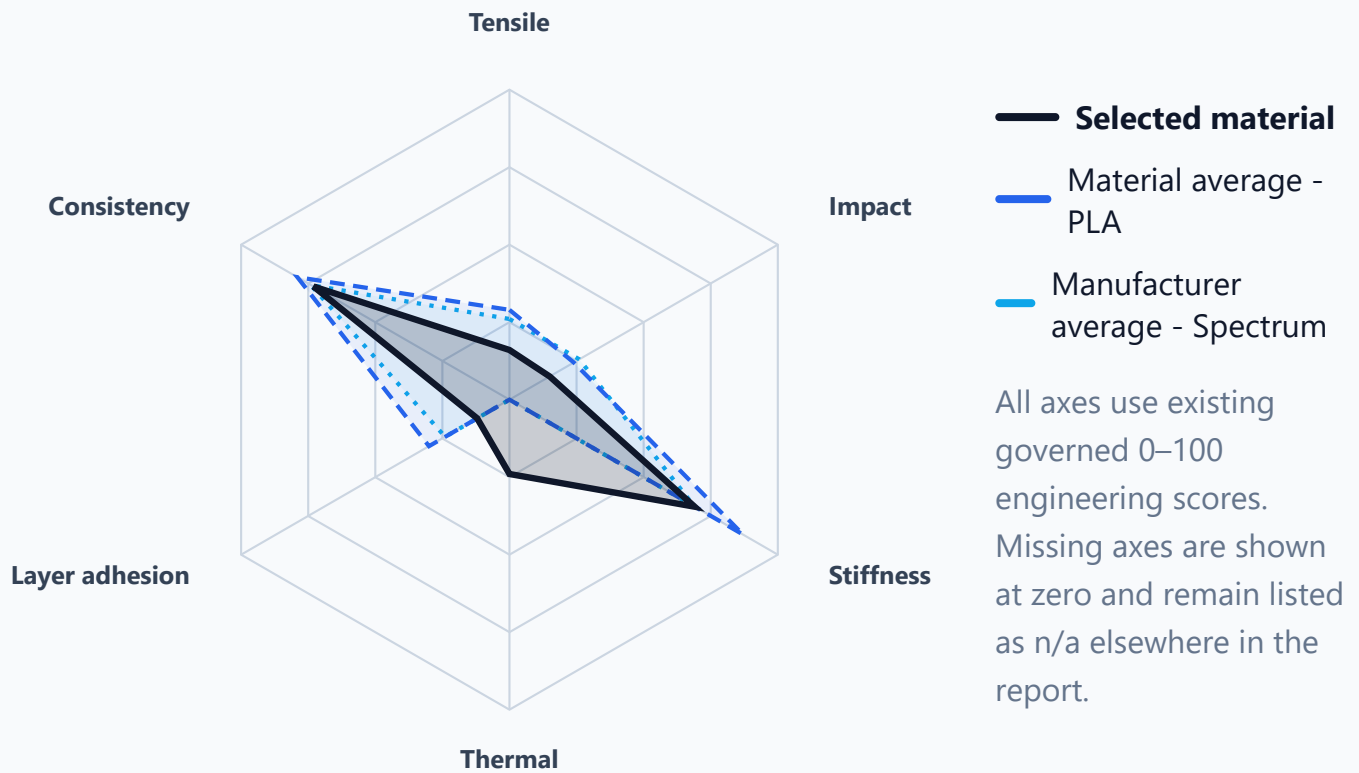
37/100

Tensile	16/100
Impact	15/100
Stiffness	69/100
Consistency	73/100
Layer adhesion	12/100
Thermal	24/100
Best available axis	consistency

Engineering score profile



Engineering radar



Fixture thermal result

48 °C · score 24/100 · 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	37/100	50/100	44/100
Tensile	16/100	29/100	26/100
Impact	15/100	24/100	26/100
Stiffness	69/100	87/100	69/100
Consistency	73/100	79/100	74/100
Layer adhesion	12/100	30/100	24/100
Thermal	24/100	—	—

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	2.563 MPa	0.48 MPa	18.7%	9	9/10
Tensile flat	22.241 MPa	7.154 MPa	32.2%	10	10/10
Impact upright	75.412 kJ/m ²	22.42 kJ/m ²	29.7%	10	10/10
Impact flat	229.982 kJ/m ²	56.439 kJ/m ²	24.5%	10	10/10
Stiffness modulus	2084.884 MPa	—	—	—	—
Stiffness deflection	2.603 mm	—	—	—	—

Measurement provenance

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

Module	Measured date
Tensile	2026-08-13
Impact	2026-08-13
Stiffness	2026-08-11
Thermal	2026-08-14

Engineering interpretation

Summary: Spectrum The Filament Vivid Red PLA Hight Temp Red has a specialized or limited engineering profile. It is below its material-family average by 13,1 points and below its manufacturer average by 6,5 points. Its strongest measured axis is Consistency, while the weakest axis is Layer Adhesion.

Data-driven review: Spectrum The Filament Vivid Red PLA Hight Temp Red 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 7% overall, is below the material-family average by 13,1 points, and is below the manufacturer average by 6,5 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 7%
219 / 234

Strengths

- Consistency: 73/100. Repeatability is one of the stronger signals in this material profile.

Limitations

- Tensile: 16/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 15/100. Avoid high impact or shock-loaded components without additional validation.
- Stiffness: 69/100. Expect less shape stability than the stronger materials in the same family.
- Layer adhesion: 12/100. 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	37/100	219 / 234	Better than 7%
Tensile	16/100	208 / 226	Better than 8%
Impact	15/100	178 / 226	Better than 22%
Stiffness	69/100	147 / 223	Better than 35%
Consistency	73/100	174 / 231	Better than 25%
Layer adhesion	12/100	189 / 226	Better than 17%
Thermal	24/100	201 / 209	Better than 4%

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
MAT0069	ProtoPasta HTPLA Blood of My Enemies PLA Red	ProtoPasta	100/100	—	—
MAT0079	Polymaker PolyLight PLA Pro Black	Polymaker	65/100	35/100	52/100
MAT0109	Polymaker PolyMax PLA Black	Polymaker	64/100	32/100	62/100

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
MAT0069	ProtoPasta HTPLA Blood of My Enemies PLA Red	ProtoPasta	100/100	—	—

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0079	Polymaker PolyLight PLA Pro Black	Polymaker	65/100	35/100	52/100
MAT0109	Polymaker PolyMax PLA Black	Polymaker	64/100	32/100	62/100
MAT0080	Polymaker PolySonic PLA Pro Blue	Polymaker	64/100	30/100	58/100
MAT0076	BambuLab Tough+ PLA Tough+ Black	BambuLab	63/100	26/100	59/100
MAT0108	Polymaker PolyLight PLA Black	Polymaker	61/100	33/100	14/100
MAT0074	Winkle Matte PLA Matte Red	Winkle	60/100	34/100	—
MAT0122	Add:North Enhanced PLA Clear	Add:North	59/100	40/100	10/100

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](#)