

# Prusa3D Prusament PC Blend PC CF Black

Material Engineering Report  
MaterialID MAT0029

3DPiceland Engineering Platform

3DPiceland Labs

Generated with 3DPiceland Engineering Platform v60.0.6

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

**\$77.50 USD/kg**

## Material identity

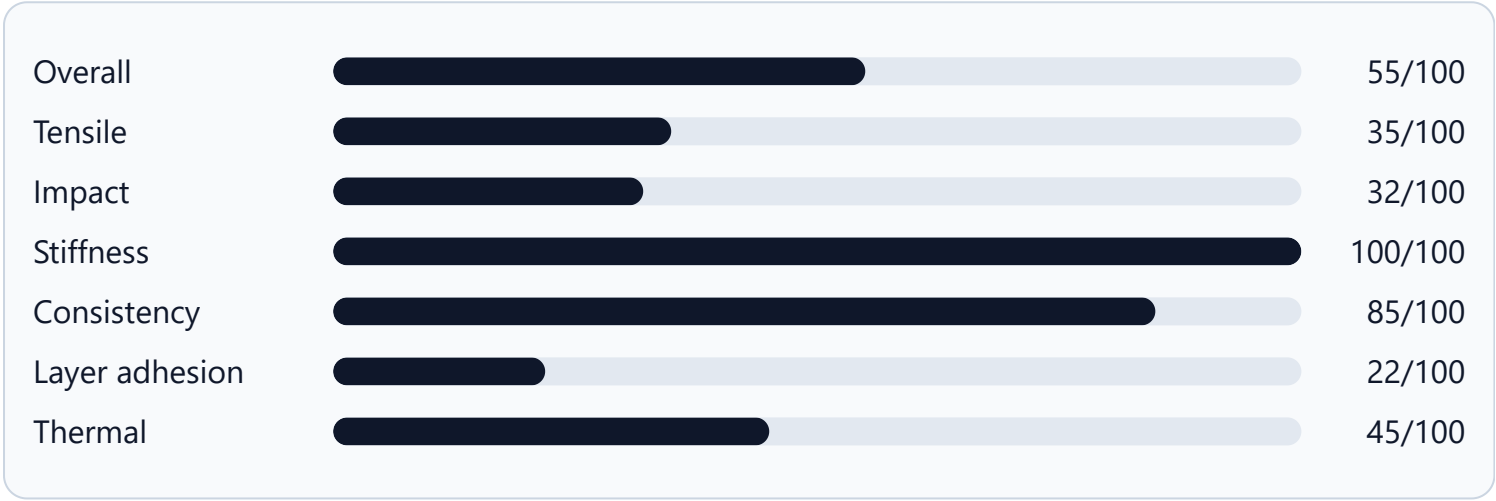
|                  |                                        |
|------------------|----------------------------------------|
| MaterialID       | MAT0029                                |
| Material         | Prusa3D Prusament PC Blend PC CF Black |
| Manufacturer     | Prusa3D                                |
| Product line     | Prusament                              |
| Base material    | PC                                     |
| Category         | Engineering                            |
| Variant / finish | —                                      |
| Reinforcement    | CF                                     |
| Color            | Black                                  |

## Governed engineering profile

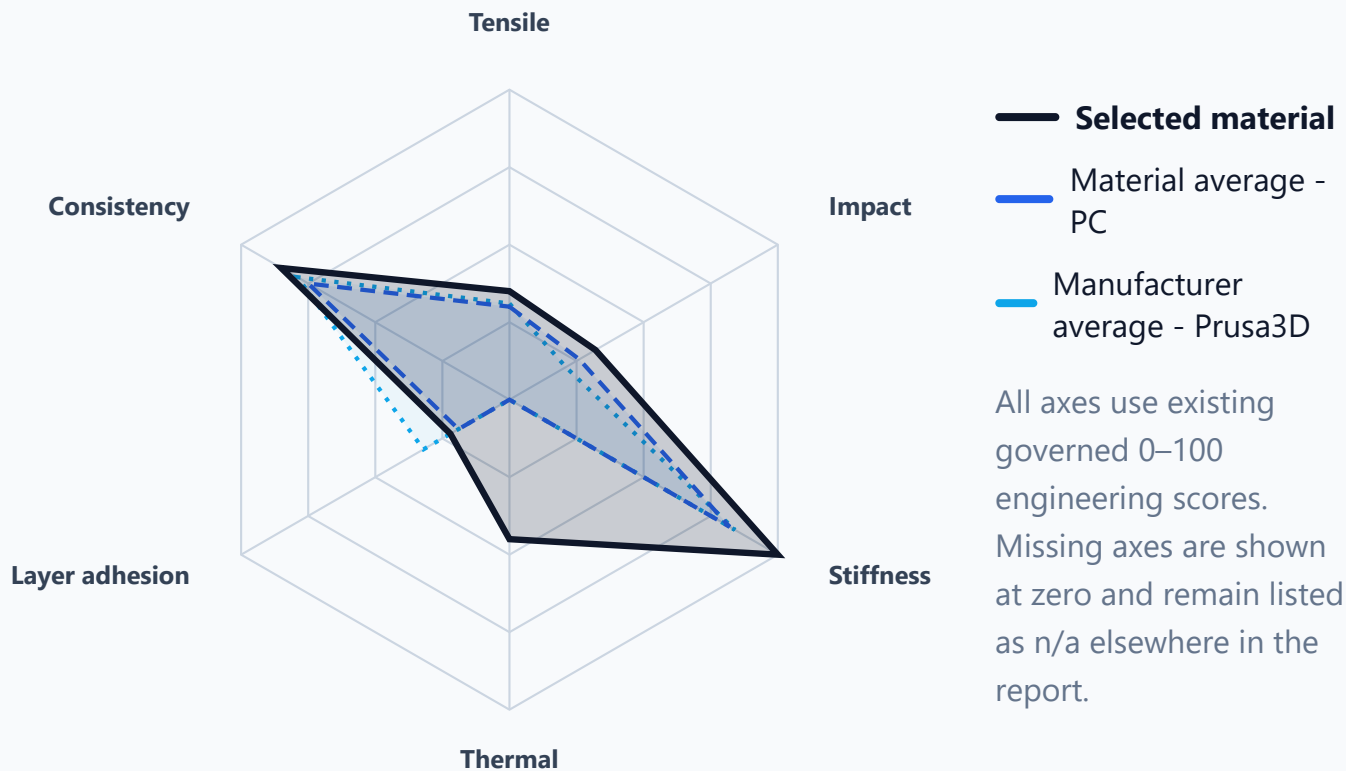
|         |        |
|---------|--------|
| Overall | 55/100 |
| Tensile | 35/100 |

|                     |           |
|---------------------|-----------|
| Impact              | 32/100    |
| Stiffness           | 100/100   |
| Consistency         | 85/100    |
| Layer adhesion      | 22/100    |
| Thermal             | 45/100    |
| Best available axis | stiffness |

## Engineering score profile



## Engineering radar



## Fixture thermal result

**89 °C** · score 45/100 · 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        | 55/100            | 46/100           | 49/100               |
| Tensile        | 35/100            | 30/100           | 31/100               |
| Impact         | 32/100            | 26/100           | 21/100               |
| Stiffness      | 100/100           | 82/100           | 84/100               |
| Consistency    | 85/100            | 75/100           | 79/100               |
| Layer adhesion | 22/100            | 19/100           | 32/100               |
| Thermal        | 45/100            | —                | —                    |

# 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      | 10.136 MPa                | 3.675 MPa                | 36.3% | 10      | 10/10      |
| Tensile flat         | 45.989 MPa                | 1.412 MPa                | 3.1%  | 10      | 10/10      |
| Impact upright       | 97.015 kJ/m <sup>2</sup>  | 14.77 kJ/m <sup>2</sup>  | 15.2% | 9       | 9/10       |
| Impact flat          | 548.571 kJ/m <sup>2</sup> | 24.498 kJ/m <sup>2</sup> | 4.5%  | 10      | 10/10      |
| Stiffness modulus    | 3481.363 MPa              | —                        | —     | —       | —          |
| Stiffness deflection | 1.559 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:** Prusa3D Prusament PC Blend PC CF Black has a specialized or limited engineering profile. It is above its material-family average by 8,4 points and above its manufacturer average by 5,5 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

**Data-driven review:** Prusa3D Prusament PC Blend PC 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 86% overall, is above the material-family average by 8,4 points, and is above the manufacturer average by 5,5 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 86%**  
34 / 234

Strengths

- Consistency: 85/100. Repeatability is one of the stronger signals in this material profile.
- Impact: 32/100. Impact behavior is competitive against the material-family context.
- Tensile: 35/100. Tensile behavior is competitive against the material-family context.
- 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: 32/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 22/100. 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        | 55/100  | 34 / 234  | Better than 86%  |
| Tensile        | 35/100  | 45 / 226  | Better than 81%  |
| Impact         | 32/100  | 55 / 226  | Better than 76%  |
| Stiffness      | 100/100 | 1 / 223   | Better than 100% |
| Consistency    | 85/100  | 24 / 231  | Better than 90%  |
| Layer adhesion | 22/100  | 127 / 226 | Better than 44%  |
| Thermal        | 45/100  | 25 / 209  | Better than 89%  |

## 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 |
|------------|---------------------------------------|---------------|---------|---------|--------|
| MAT0033    | Prusa3D Prusament PC Blend PC Black   | Prusa3D       | 56/100  | 39/100  | 46/100 |
| MAT0032    | Prima Creator PrimaSelect PC Black    | Prima Creator | 46/100  | 26/100  | 21/100 |
| MAT0028    | Prima Creator PrimaSelect PC CF Black | Prima Creator | 45/100  | 38/100  | 21/100 |
| MAT0168    | BambuLab Basic PC White               | BambuLab      | 42/100  | 30/100  | 13/100 |
| MAT0034    | Yasin Standard Black PC Plus Black    | Yasin         | 35/100  | 12/100  | 21/100 |

## Public links

[Manufacturer website](#) [Video review](#) [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](#)