

# Prusa3D Buddy3D PLA Silk Copper

Material Engineering Report  
MaterialID MAT0085

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

**\$23.20 USD/kg**

## Material identity

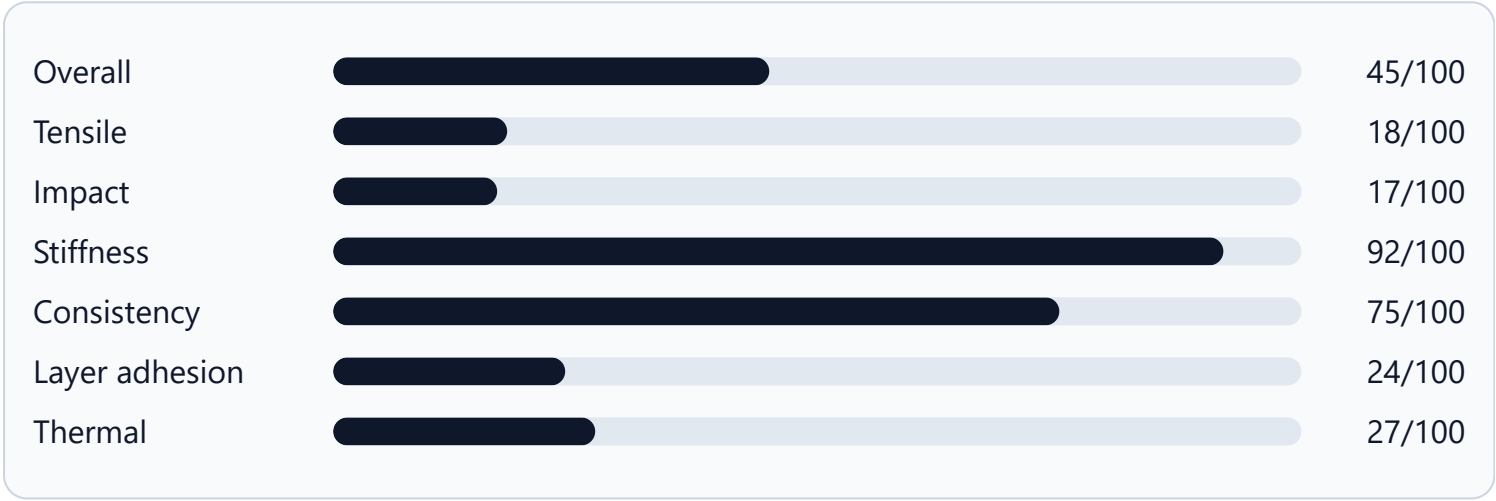
|                  |                                 |
|------------------|---------------------------------|
| MaterialID       | MAT0085                         |
| Material         | Prusa3D Buddy3D PLA Silk Copper |
| Manufacturer     | Prusa3D                         |
| Product line     | Buddy3D                         |
| Base material    | PLA                             |
| Category         | Standard                        |
| Variant / finish | Silk                            |
| Reinforcement    | —                               |
| Color            | Copper                          |

## Governed engineering profile

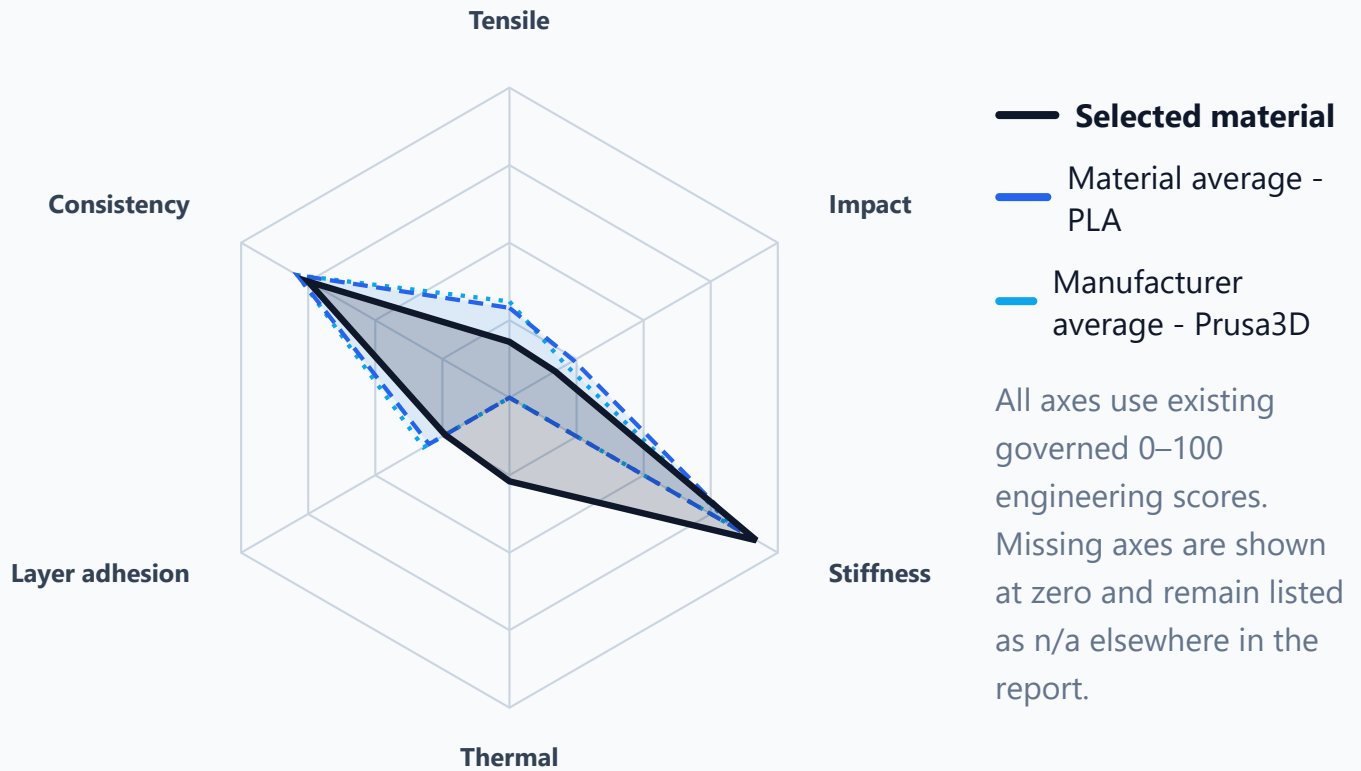
|         |        |
|---------|--------|
| Overall | 45/100 |
| Tensile | 18/100 |

|                     |           |
|---------------------|-----------|
| Impact              | 17/100    |
| Stiffness           | 92/100    |
| Consistency         | 75/100    |
| Layer adhesion      | 24/100    |
| Thermal             | 27/100    |
| Best available axis | stiffness |

## Engineering score profile



## Engineering radar



## Fixture thermal result

**53 °C** · score 27/100 · 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        | 45/100            | 50/100           | 49/100               |
| Tensile        | 18/100            | 29/100           | 31/100               |
| Impact         | 17/100            | 24/100           | 21/100               |
| Stiffness      | 92/100            | 87/100           | 84/100               |
| Consistency    | 75/100            | 79/100           | 79/100               |
| Layer adhesion | 24/100            | 30/100           | 32/100               |
| Thermal        | 27/100            | —                | —                    |

# 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      | 5.506 MPa                 | 2.267 MPa                | 41.2% | 10      | 10/10      |
| Tensile flat         | 22.548 MPa                | 6.171 MPa                | 27.4% | 10      | 10/10      |
| Impact upright       | 100.808 kJ/m <sup>2</sup> | 22.486 kJ/m <sup>2</sup> | 22.3% | 9       | 9/10       |
| Impact flat          | 243.729 kJ/m <sup>2</sup> | 19.873 kJ/m <sup>2</sup> | 8.2%  | 10      | 10/10      |
| Stiffness modulus    | 2753.914 MPa              | —                        | —     | —       | —          |
| Stiffness deflection | 1.97 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 Buddy3D PLA Silk Copper has a specialized or limited engineering profile. It is below its material-family average by 4,9 points and below its manufacturer average by 4,2 points. Its strongest measured axis is Stiffness, while the weakest axis is Impact.

**Data-driven review:** Prusa3D Buddy3D PLA Silk Copper 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 41% overall, is below the material-family average by 4,9 points, and is below the manufacturer average by 4,2 points. Its strongest engineering signal is Stiffness, while Impact is the main limitation to consider before using it for demanding applications.

BEST FEATURE

**Stiffness**

MAIN LIMITATION

**Impact**

DATASET POSITION

**Better than 41%**  
139 / 234

**Strengths**

- Consistency: 75/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 92/100. Stiffness is a relative advantage in this comparison group.

**Limitations**

- Tensile: 18/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 17/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 24/100. 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
- Repeatabable 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        | 45/100 | 139 / 234 | Better than 41% |
| Tensile        | 18/100 | 200 / 226 | Better than 12% |
| Impact         | 17/100 | 166 / 226 | Better than 27% |
| Stiffness      | 92/100 | 65 / 223  | Better than 71% |
| Consistency    | 75/100 | 162 / 231 | Better than 30% |
| Layer adhesion | 24/100 | 109 / 226 | Better than 52% |
| Thermal        | 27/100 | 131 / 209 | Better than 38% |

## 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](#) [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](#)