

Coex 3D Standard Banana Yellow PETG Yellow

Material Engineering Report
MaterialID MAT0266

3DPiceland Engineering Platform
3DPiceland Labs
Generated with 3DPiceland Engineering Platform v70.0.4
DIRECT-IMPACT-METHODOLOGY - Izod and Charpy
Methodology
Generated 2026-10-04 18:07:33

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.

RIGID TEST COVERAGE

Complete; 5/5 score families; Izod/Charpy 2/2 measured, 2/2 scored; Overall eligible; policy engineering-score-v70-1

ENGINEERING AXES

7/8

PUBLIC MSRP

\$0.19 USD/kg

Material identity

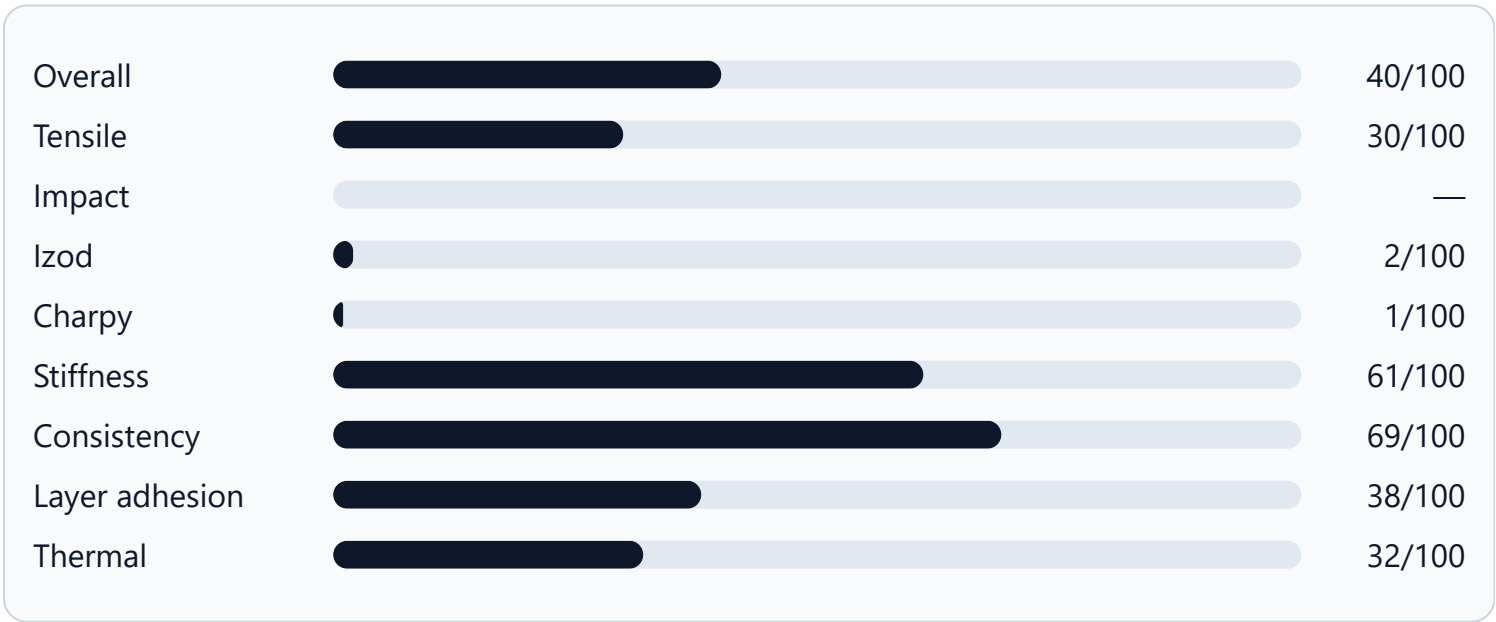
MaterialID	MAT0266
Material	Coex 3D Standard Banana Yellow PETG Yellow
Manufacturer	Coex 3D
Product line	Standard
Base material	PETG
Category	Standard
Variant / finish	—

Reinforcement	—
Color	Yellow

Governed engineering profile

Overall	40/100
Tensile	30/100
Impact	—
Izod	2/100
Charpy	1/100
Stiffness	61/100
Consistency	69/100
Layer adhesion	38/100
Thermal	32/100
Best available axis	consistency

Engineering score profile



Engineering radar

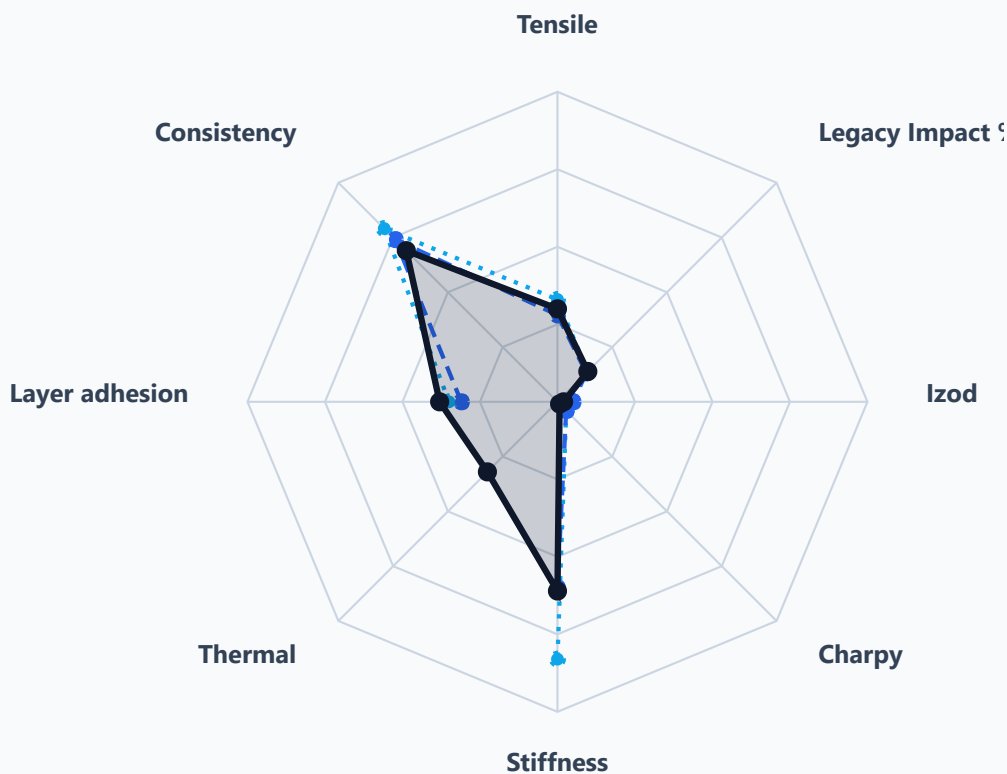
— Selected material

— Material average - PETG

— Manufacturer average - Coex 3D

Legacy Impact radar: 13.872 % of legacy rig capacity. This historical visual reference is the mean corrected Flat/Upright result divided by the matching rig capacity; it is not a modern engineering score.

Izod and Charpy use versioned method references and together form one equally weighted impact family. Overall requires all five families and both calibrated methods; incomplete profiles are not ranked. Legacy Impact and thermal are outside Overall. Missing axes have gaps with no marker or filled polygon; measured zero retains a centre marker.



Fixture thermal result

64 °C · score 32/100 · method 3dp-thermal-deflection-fixture-v1

Nearby BlueDOT probe-indicated fixture temperature from a non-standard comparative 3DP Iceland 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	40/100	—	47/100
Tensile	30/100	28/100	33/100
Impact	—	—	—
Izod	2/100	5/100	4/100
Charpy	1/100	4/100	4/100
Stiffness	61/100	60/100	83/100
Consistency	69/100	74/100	79/100
Layer adhesion	38/100	31/100	35/100
Thermal	32/100	—	—

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	13.412 MPa	6.291 MPa	46.9%	10	10/10
Tensile flat	35.145 MPa	4.517 MPa	12.9%	10	10/10
Impact upright	4.895 kJ/m ²	0.806 kJ/m ²	16.5%	10	10/10
Impact flat	10.911 kJ/m ²	2.637 kJ/m ²	24.2%	10	10/10
Izod	1.946 kJ/m ²	0.245 kJ/m ²	12.6%	9	9/10
Charpy	1.109 kJ/m ²	0.542 kJ/m ²	48.9%	10	10/10
Stiffness modulus	1826.854 MPa	—	—	—	—
Stiffness deflection	2.97 mm	—	—	—	—

Measurement provenance

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

Module	Measured date
Tensile	2026-09-26
Impact	2026-09-26
Izod	2026-09-29
Charpy	2026-09-28
Stiffness	2026-09-26
Thermal	2026-09-26

Engineering interpretation

Summary: Coex 3D Standard Banana Yellow PETG Yellow has a specialized or limited engineering profile. It is without enough material-family average context and below its manufacturer average by 6,6 points. Its strongest measured axis is Consistency, while the weakest axis is Charpy.

Data-driven review: Coex 3D Standard Banana Yellow PETG Yellow 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 26% overall, is missing enough context for the material-family average, and is below the manufacturer average by 6,6 points. Its strongest engineering signal is Consistency, while Charpy is the main limitation to consider before using it for demanding applications.

BEST FEATURE

Consistency

MAIN LIMITATION

Charpy

DATASET POSITION

Better than 26%
60 / 80

Strengths

- Layer adhesion: 38/100. Z-axis bonding is better than the material-family context.

Limitations

- Tensile: 30/100. Avoid using this as the primary choice for tensile-loaded parts.
- Izod/Charpy impact family: 2/100. Validate impact or shock-loaded components against their application requirements.
- Layer adhesion: 38/100. 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

- 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	40/100	60 / 80	Better than 26%
Tensile	30/100	105 / 243	Better than 57%
Impact	—	—	—
Izod	2/100	81 / 83	Better than 4%
Charpy	1/100	80 / 82	Better than 4%
Stiffness	61/100	197 / 240	Better than 18%
Consistency	69/100	182 / 243	Better than 26%
Layer adhesion	38/100	56 / 243	Better than 77%

Metric	Score	Rank	Percentile
Thermal	32/100	87 / 226	Better than 62%

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.
- Validate impact-focused or shock-loaded designs against the measured Izod/Charpy results.

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact	Izod	Charpy
MAT0236	Yasin Standard Black PETG CF Black	Yasin	47/100	30/100	—		
MAT0198	Siraya Tech Fiberheart Black PETG Pro CF Black	Siraya Tech	46/100	33/100	—		
MAT0235	Yasin Standard Black PETG GF Black	Yasin	44/100	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	Izod	Charpy
MAT0236	Yasin Standard Black PETG CF Black	Yasin	47/100	30/100	—	n/a	n/a
MAT0198	Siraya Tech Fiberheart Black PETG Pro CF Black	Siraya Tech	46/100	33/100	—	n/a	n/a
MAT0235	Yasin Standard Black PETG GF Black	Yasin	44/100	27/100	—	n/a	n/a
MAT0048	Prusa3D Prusament Jet Black PETG V0 Black	Prusa3D	44/100	26/100	—	n/a	n/a

MaterialID	Material	Manufacturer	Overall	Tensile	Impact	Izod	Charpy
MAT0042	Prusa3D Prusament PETG CF Black	Prusa3D	42/100	25/100	—	n/a	n/a
MAT0043	Prima Creator PrimaSelect PETG GF White	Prima Creator	40/100	31/100	—	n/a	n/a
MAT0061	Prusa3D Prusament Signal White PETG White	Prusa3D	39/100	33/100	—	n/a	n/a
MAT0059	Prusa3D Prusament Prusa Orange PETG Orange	Prusa3D	38/100	31/100	—	n/a	n/a

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](#)

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Izod and Charpy Impact Strength

Izod Impact Strength · 2026-09-29
 Instrument readings in kJ/m²
 Mean 1.946 kJ/m²; Std. Dev 0.245 kJ/m²; CV 12.608%; Samples 9; Confidence 9
 No break 0; invalid 0; excluded 0.
 Comparative measurements; standard conformity unverified.

Charpy Impact Strength · 2026-09-28
 Instrument readings in kJ/m²
 Mean 1.109 kJ/m²; Std. Dev 0.542 kJ/m²; CV 48.87%; Samples 10; Confidence 10
 No break 0; invalid 0; excluded 0.
 Comparative measurements; standard conformity unverified.