

Coex 3D Prime Banany Yellow PCTG Yellow

Material Engineering Report
MaterialID MAT0267

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

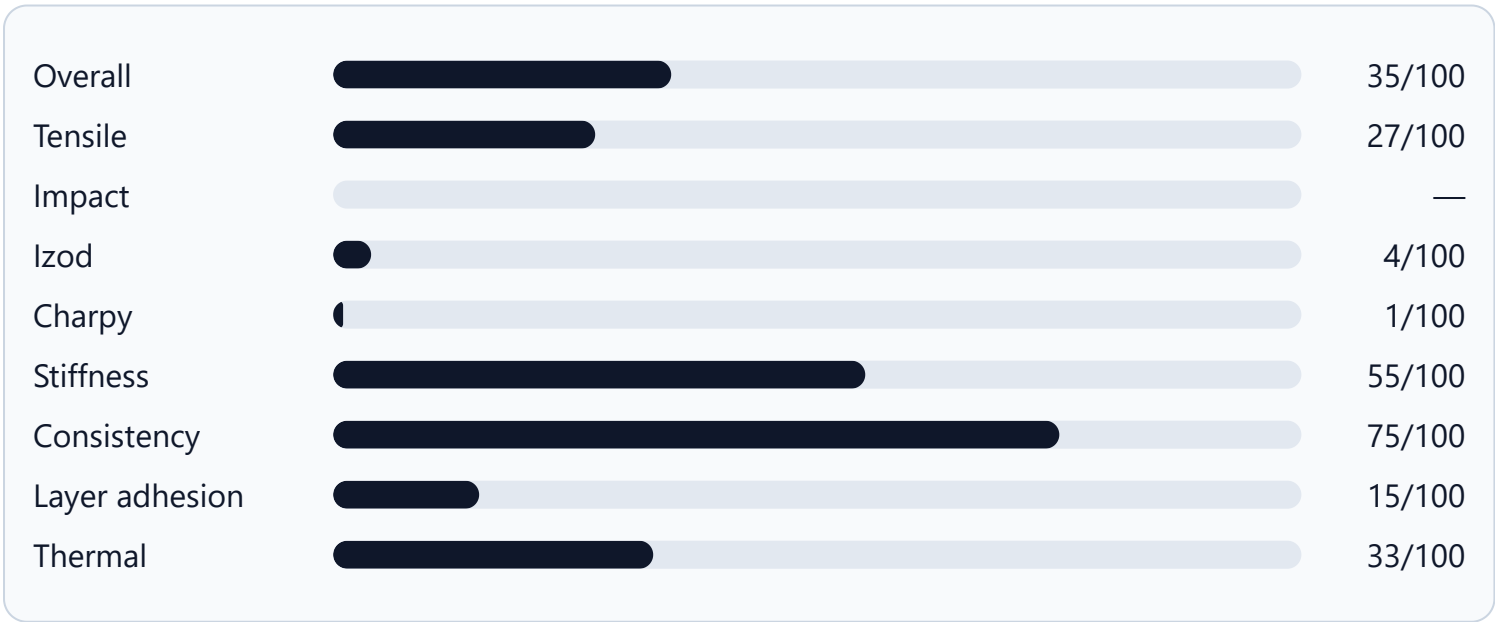
MaterialID	MAT0267
Material	Coex 3D Prime Banany Yellow PCTG Yellow
Manufacturer	Coex 3D
Product line	Prime
Base material	PCTG
Category	Standard
Variant / finish	—

Reinforcement	—
Color	Yellow

Governed engineering profile

Overall	35/100
Tensile	27/100
Impact	—
Izod	4/100
Charpy	1/100
Stiffness	55/100
Consistency	75/100
Layer adhesion	15/100
Thermal	33/100
Best available axis	consistency

Engineering score profile



Engineering radar

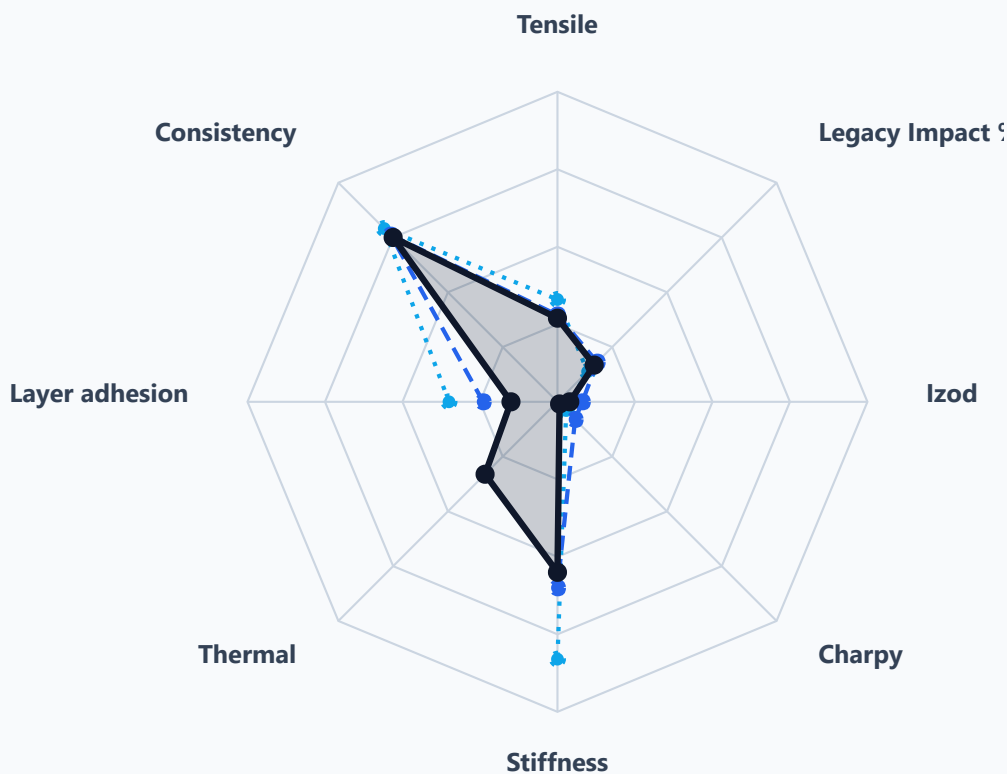
— **Selected material**

— Material average - PCTG

— Manufacturer average - Coex 3D

Legacy Impact radar: 16.729 % 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

65 °C · score 33/100 · 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	35/100	—	47/100
Tensile	27/100	28/100	33/100
Impact	—	—	—
Izod	4/100	8/100	4/100
Charpy	1/100	8/100	4/100
Stiffness	55/100	60/100	83/100
Consistency	75/100	76/100	79/100
Layer adhesion	15/100	24/100	35/100
Thermal	33/100	—	—

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	5.776 MPa	2.665 MPa	46.1%	9	9/10
Tensile flat	38.052 MPa	7.022 MPa	18.5%	10	10/10
Impact upright	6.248 kJ/m ²	1.214 kJ/m ²	19.4%	10	10/10
Impact flat	12.813 kJ/m ²	1.989 kJ/m ²	15.5%	10	10/10
Izod	2.826 kJ/m ²	0.773 kJ/m ²	27.4%	9	9/10
Charpy	1.1 kJ/m ²	0.043 kJ/m ²	3.9%	10	10/10
Stiffness modulus	1654.818 MPa	—	—	—	—
Stiffness deflection	3.279 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 Prime Banany Yellow PCTG Yellow has a specialized or limited engineering profile. It is without enough material-family average context and below its manufacturer average by 11,7 points. Its strongest measured axis is Consistency, while the weakest axis is Charpy.

Data-driven review: Coex 3D Prime Banany Yellow PCTG 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 8% overall, is missing enough context for the material-family average, and is below the manufacturer average by 11,7 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 8%
75 / 80

Strengths

- Consistency: 75/100. Repeatability is one of the stronger signals in this material profile.

Limitations

- Tensile: 27/100. 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: 15/100. 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	35/100	75 / 80	Better than 8%
Tensile	27/100	135 / 243	Better than 45%
Impact	—	—	—
Izod	4/100	76 / 83	Better than 10%
Charpy	1/100	81 / 82	Better than 2%
Stiffness	55/100	211 / 240	Better than 13%
Consistency	75/100	132 / 243	Better than 46%
Layer adhesion	15/100	180 / 243	Better than 26%

Metric	Score	Rank	Percentile
Thermal	33/100	80 / 226	Better than 65%

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
MAT0039	3D Fuel PCTG PCTG Pro CF Black	3D Fuel	45/100	27/100	—		
MAT0040	3D Fuel PCTG Toolbox Red PCTG Pro GF Red	3D Fuel	39/100	25/100	—		

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
MAT0039	3D Fuel PCTG PCTG Pro CF Black	3D Fuel	45/100	27/100	—	n/a	n/a
MAT0040	3D Fuel PCTG Toolbox Red PCTG Pro GF Red	3D Fuel	39/100	25/100	—	n/a	n/a
MAT0041	3D Fuel PCTG Cobalt Blue PCTG Pro Blue	3D Fuel	—	34/100	—	n/a	n/a
MAT0227	Spectrum Smart Sky Blue PCTG Blue	Spectrum	—	34/100	—	n/a	n/a
MAT0238	Yasin Standard Green PCTG Green	Yasin	—	22/100	—	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

Charpy Impact Strength · 2026-09-28

Instrument readings in kJ/m^2

Mean 1.1 kJ/m^2 ; Std. Dev 0.043 kJ/m^2 ; CV 3.916%; Samples 10; Confidence 10

No break 0; invalid 0; excluded 0.

Comparative measurements; standard conformity unverified.

Izod Impact Strength · 2026-09-29

Instrument readings in kJ/m^2

Mean 2.826 kJ/m^2 ; Std. Dev 0.773 kJ/m^2 ; CV 27.357%; Samples 9; Confidence 9

No break 0; invalid 0; excluded 0.

Comparative measurements; standard conformity unverified.