



TRIDENT 3D

ADDITIVE MANUFACTURING · CO. WEXFORD

FDM DESIGN GUIDE

Design it right the first time.

The tolerances, design rules, materials and process behind a clean FDM part — so your quote comes back faster, with fewer surprises.

GET A QUOTE

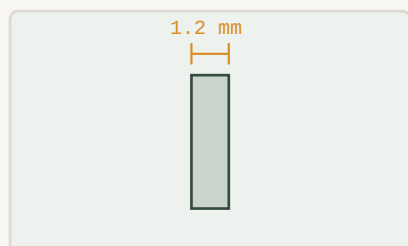
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DESIGN RULES

The six numbers that matter

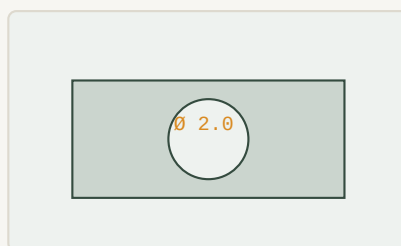


MINIMUM WALL

1.2 mm

best 0.8

Thinner walls get fragile in most engineering polymers.

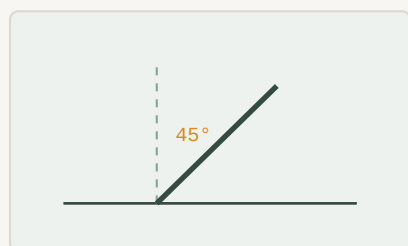


MINIMUM HOLE

Ø 2.0 mm

best 1.0

Holes print undersize — model small, we ream to size.

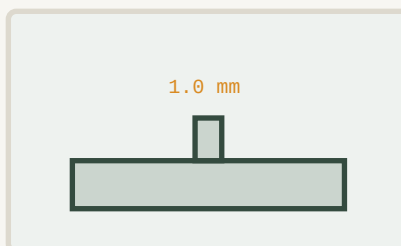


MAX OVERHANG

45°

60° best

Steeper needs support — soluble support on the H2D.

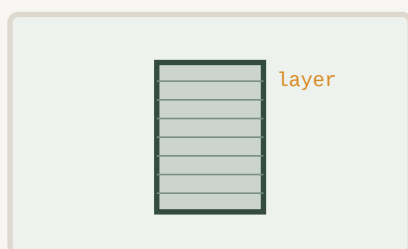


MINIMUM FEATURE

1.0 mm

best 0.6

Embossed/engraved detail; text legible from ~2 mm.

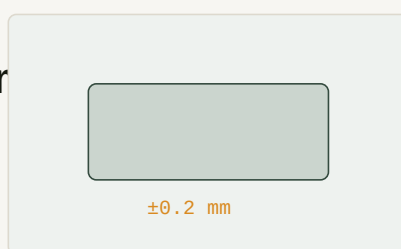


LAYER HEIGHT

0.08–0.28 mm

0.20 typical

Finer layers = better finish and Z accuracy, at more cost.



GENERAL TOLERANCE

±0.5% / ±0.2 mm

whichever greater

Tighter on well-constrained features in the XY plane.

FULL REFERENCE

Tolerances & process

PARAMETER	STANDARD	BEST
General tolerance	$\pm 0.5\%$ / ± 0.5 mm	± 0.2 mm
Layer height	0.20 mm	0.08 mm
Minimum wall	1.2 mm	0.8 mm
Minimum feature	1.0 mm	0.6 mm
Minimum hole	$\varnothing 2.0$ mm	$\varnothing 1.0$ mm
Unsupported overhang	45°	60°
Part size (one piece)	350 × 320 × 325 mm	No limit, bonded

MATERIALS IN STOCK

PLA · PLA Tough · PLA Medical · PETG · PETG-AHT · HIPS · PP · ABS · ASA · PC · PA6 · PA12 · PA12-HT · PLA-CF · PETG-CF · ABS-GF · ASA-CF · PA6-CF · PA6-GF · PA12-CF · PA12-GF · PPA-CF · PPS-CF · TPU · TPE · TPC

HOW A JOB RUNS

- 01 Send files** STEP, STL, 3MF or a sketch, with quantity and material.
- 02 DFM review** We check walls, overhangs and orientation before printing.
- 03 Fixed quote** A firm price and lead time, normally within 24 hours.
- 04 Print & finish** Printed, supports removed, finished, critical features checked.
- 05 Delivered** Shipped nationwide or collect in Co. Wexford.

Ready to quote your part?

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