



3D-BG

Customer's Guide to Infill Percentages

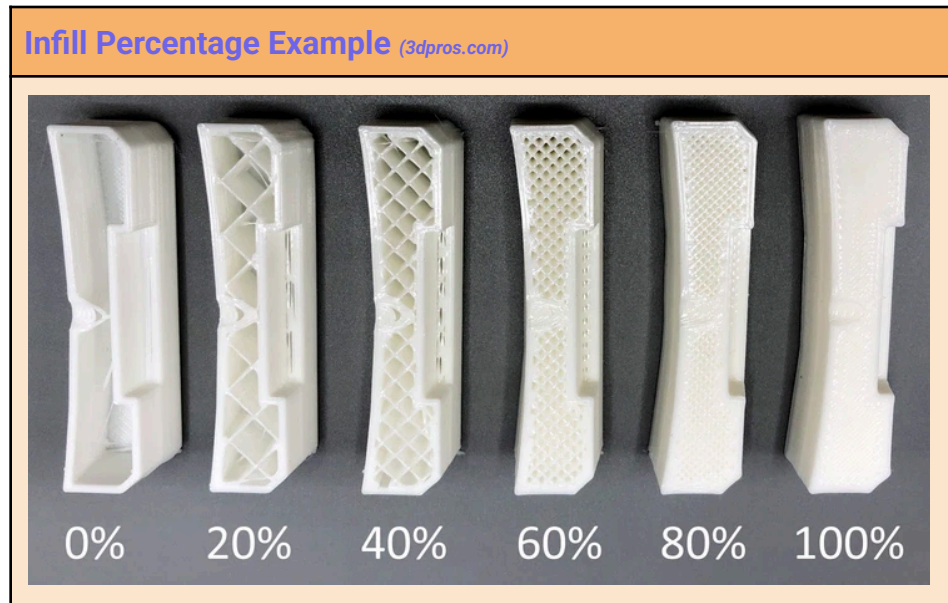
Overview

At 3D-BG.com, we strive to create quality products that function well and look great. **Infill patterns** are one thing to consider for your project.



What is infill percentage?

Infill refers to the internal structure of your print, and the percentage determines how solid the part is inside. Understanding the infill percentage is key to balancing strength, weight, print time, and material use in 3D printing. This guide breaks down recommendations into three categories (Light, Medium, and Heavy) duty based on durability needs.



1. Light-Duty Prints (10–20% Infill)

★ Best for display items, prototypes, decorative models, and basic enclosures.

Material	Tips for printing
PLA	Excellent for decorative and visual models. 15% grid or lines infill is usually sufficient.
ASA	Use 15–20% if you need slight UV resistance but not mechanical strength.
PETG	A 15% gyroid or grid infill works well for transparent/light-duty parts.
ABS	20% concentric or grid infill is acceptable for basic enclosures and form models.

2. Medium-Duty Prints (25–50% Infill)

- ★ Best for functional prints, moving parts, containers, and tools with moderate stress.

Material	Tips for printing
PLA	30–40% infill gives a good balance of strength and time. Use cubic or gyroid patterns.
ASA	35–50% infill ensures outdoor durability without excessive weight.
PETG	30–50% for flexible strength, ideal for snap-fit parts and brackets.
ABS	35–50% for parts that must endure friction or moderate thermal stress.

3. Heavy-Duty Prints (60–100% Infill)

- ★ Best for load-bearing parts, mechanical supports, structural tools, and production components.

Material	Tips for printing
PLA	Use 60–80% only when absolutely necessary—PLA becomes brittle under high stress.
ASA	70–100% is ideal for high-performance outdoor parts with long-term UV exposure.
PETG	70–90% yields excellent mechanical strength while retaining slight flexibility.
ABS	75–100% is best for high-heat, impact-prone environments (e.g., brackets, gears).