

Additive Manufacturing Design Guidelines

The below guidelines are general rules of thumb, and can vary widely based on material type, part orientation, and overall part size. In many cases, we can combine Additive Manufacturing and traditional CNC milling to achieve tighter tolerances and geometries that neither process could achieve on its own.

Overall Dimensional Tolerance: +/- .004 in.

Minimum Feature Size: .006 in.

Wall Height: For walls under .040 in. thick, a height-to-thickness ratio of 40:1 should be maintained to insure no warpage or buckling occurs.

Unsupported Angle: Features less than 45° from horizontal require support structure. Features over 45° from horizontal are typically self-supporting.

Unsupported Overhang: Overhangs greater than .020 in. from previous layer require support structure. Overhangs less than .020 in. are typically self-supporting.

Unsupported Bridge: Bridging distance between two features greater than .080 in. requires support structure. Bridging distance less than .080 in. can typically be self-supporting.