

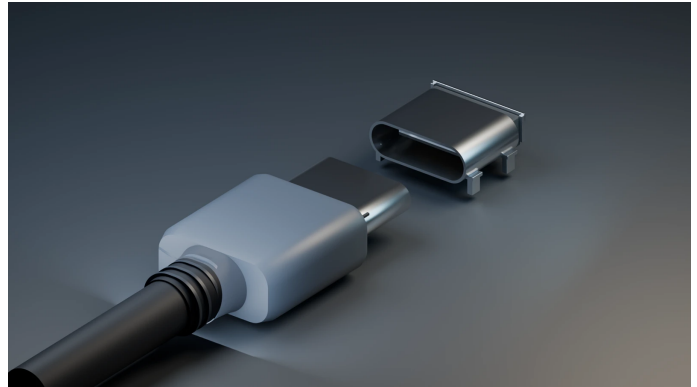
ENGINEERING BRIEF / ILLUSTRATIVE FIT STUDY

USB-C connector fit study

From an alignment question to a measurable clearance target.

Size is only part of the fit.

A plug and receptacle can meet their size limits and still clash when misaligned. Holding the selected size limits constant, this study compares a prescribed lateral offset of 30 μm with 5 μm . The limiting flank changes from local overlap to positive clearance.

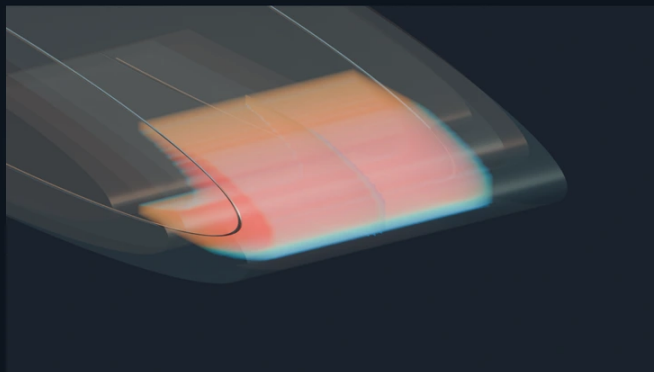
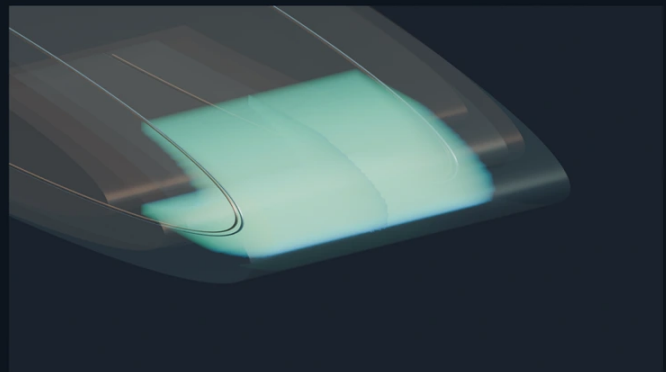


STACKUP3D / USB-C FIT STUDY

07 / COMPARE

Keep the size limits. Recover the margin.

Compare the two calculated states on the same display scale.

BASELINE · 30 μm OFFSET**-10 μm** REFINED · 5 μm OFFSET**+15 μm**

25 μm recovered: a measurable target for guidance, datum control and inspection.

ILLUSTRATIVE RIGID-SHELL STUDY · PRESCRIBED ALIGNMENT · ACTUAL UNITS SHOWN

X DISPLACEMENT $\times 8$

25 μm of local clearance recovered

Same size limits. Offset: 30 to 5 μm . Local gap: -10 to +15 μm .

Authored rigid shell envelopes and prescribed alignment assumptions. Illustrative local fit study, not a customer benchmark. The comparison magnifies X displacement 8x; numerical values retain physical units.