

Selecting a Fit

Mechanical Engineering

Going from what the joint must do to a written tolerance on the drawing.

Function first, then class, then grade, then the worst cases.

1

Say what the joint must do

Rotate, slide, locate accurately, or transmit torque by grip.

2

Pick the fit class

Clearance to move, transition to locate, interference to grip.

3

Work on hole basis

Make the hole with a standard reamer, then adjust the shaft.

4

Choose the IT grades

H7/g6 is the workhorse. Each tighter grade multiplies cost.

5

Check both extremes

Worst-case clearance and worst-case interference, not just nominal.

6

Check the assembly method

Interference fits need press force, or heating and cooling.

Temperature, surface finish and roundness all shift a real fit.
Educational reference; standards govern.