

Topic: Calculation of tolerances at the routing process

Example: Router-Ø 2.0 - 2.40 mm with 9.0 mm flute length ⇒ 4 panels per stack

	worst case	optimized
Tolerance of router Ø: (GCT produces router with reduced Ø tolerance on demand)	30 µm	< 20 µm
Wear at router Ø: (Depends on router type, tool life, parameter, material)	50 µm	< 10 µm
Bending / deviation of router: (Depends on router Ø, flute length, material, parameter and stack height)	70 µm	50 µm
Routing machine tolerance: (Depends on spindle speed, clamping system, run-out and maintenance of collet, vacuum at the pressure foot)	30 µm	20 µm
Total tolerance:	180 µm	< 100 µm

Recommendations:

- Diamond coated router and/or
- Router with reduced Ø tolerance
- Router with chip breaker geometry
- Router with optimized flute length
- Reduce router tool life and feed rate
- Routing machine with one or max 2 spindles
- Vacuum at the pressure foot of min 75 mbar

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