

Splined Shaft Connection DIN 5480

Sample document - numeric values are only included in the purchased Pro export.

Project: _____ Part/Position: _____ Prepared by: _____

Overall assessment: pass (flank pressure verification satisfied)

Inputs

Reference diameter d_B	???	mm
Module m	???	mm
Load-carrying length l_{tr}	???	mm
Operating torque T	???	Nm
Application factor K_A	???	
Hub yield strength R_e	???	N/mm ²
Hub heat treatment	???	
Load-sharing factor ϕ	???	
Safety factor S_F	???	

Geometry per DIN 5480

Number of teeth z	???	
Mean load-carrying diameter d_m	???	mm
Load-carrying tooth height h_{tr}	???	mm

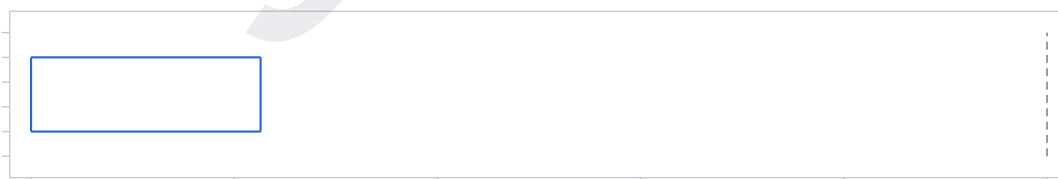
Results

Equivalent torque $K_A \cdot T$	???	Nm
Flank pressure p	???	N/mm ²
Allowable flank pressure p_{allow}	???	N/mm ²
Transmittable torque T_{allow}	???	Nm

Flank pressure verification

Criterion	Value	Limit	Status
Flank pressure $p \leq p_{allow}$	?? ? N/mm ²	?? ? N/mm ²	● PASS

Pressure utilization



Utilization p/p_{allow} in % (dashed: 100 %)

Notes

Root load capacity and the notch effect of the spline on the shaft are not covered here - use the DIN 743 shaft calculator for that. DIN 5480 describes the involute spline; the older straight-sided spline per DIN ISO 14 is a separate connection type with a higher notch effect.

Calculation basis

Simplified flank pressure verification of the splined shaft connection per DIN 5480 (involute spline), not an exact calculation per DIN 5480-1 (no tolerance class, no friction or wear analysis). The number of teeth follows from $z = d_B/m - 1$, the mean load-carrying diameter from $d_m = d_B - m$ and the load-carrying tooth height as a guideline value $h_{tr} = ??? \cdot m$. The flank pressure $p = 2 \cdot K_A \cdot T / (d_m \cdot h_{tr} \cdot l_{tr} \cdot z \cdot \phi)$ is checked against $p_{allow} = R_e \cdot f_H / S_F$ of the hub (hardness factor f_H : ???)

quenched and tempered, ? ? ? case-hardened). The load-sharing factor ϕ accounts for the uneven load distribution across the teeth caused by manufacturing tolerances.

Note: The results are design and orientation aids. They do not replace independent verification, calculation and approval by a qualified person. The terms of use at maschinenbaurechner.de apply.

SAMPLE