



SWT 60 Pb

Free Cutting High Carbon Steel

Distinctive feature & main attribute

A temperable, unalloyed free cutting high carbon steel with lead.

Use & application range

This quality is adapted for turned parts and test shafts.

Material No. and norms

Material No. ~ 1.0758
 DIN Abbreviation ~ 60SPb22
 AFNOR
 AISI/SAE/ASTM
 ISO
 Euro Standard EN ~ 60SPb22
 Others

Reference analysis %

C	Si	Mn	P	S	Cr	PB	Fe
0.60	0.10	0.70	0.02	0.18	0.15	0.15	balance
0.69	0.30	1.35	0.06	0.25	0.25	0.35	

Execution, delivery form, standard sizes and availability

- Execution in 3 m (2 m) round bars as well as in coils for Escomatic
- Standard size in stock: [see Product range](#)
- Other sizes on request

Tolerances

- $\varnothing < 10.00$ mm, cold drawn; ISO h8
- $\varnothing > 13.00$ mm, cold drawn, ground, polished; ISO h8; surface finish Ra 0.4 (N5)
- $\varnothing \geq 5.00$ mm, eddy current checked for fissures
- Coil; ISO fg8
- Tighter tolerances (up to +/- 0.002 mm) on request

Mechanical properties

At delivery status:

- Tensile strength (Rm): 650 – 900 MPa, size depending
- Alternative surface hardness: 55 – 61 HRC, after removing the soft skin (surface decarburization)
- Core hardening: 50 – 54 HRC, ($\varnothing < 10$ mm)

Heat treatment

- Tempering in oil: 800 – 840 °C
- Soft annealing: 650 – 720 °C
- Annealing as required see chart

Cutting rates

vc ~ 40 – 60 m/min, value depending on the lubrication oil, cutting tools and shape of parts.

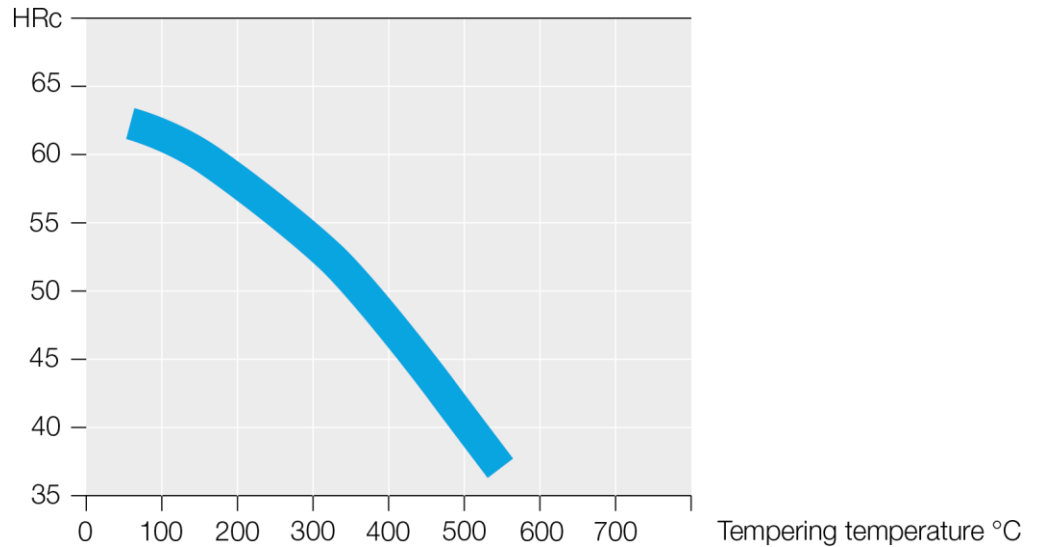


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ANNEALING CURVE 25 minutes

- Annealing as required see chart
- Measured at the size of \varnothing 5.50 mm
- Tempering at 830°C/25 min/oil



If you harden in oil, we recommend to not pass over the annealing temperature of 820°C to avoid cracks. The water should be pre-heated at about 50°C. The above curve indicates the results of determinate section of a curtain size of 5.50 mm. The result after heat treatment can be slightly different than shown on this curve, depending on the