ES ULW 65

Name:
C 45 U

Material No.:
1.1730

Typical analysis in %:

C	Si	Mn
0.45	0.3	0.7

As-supplied condition:
Annealed to a hardness of about 190 HB (approx. 650 N/mm²)

Characteristics:
Unalloyed tool steel, good machinability, shallow depth case hardening steel

General fields of application:
Mould frames, components for plastic moulds, blow and foaming moulds with low polishability requirements, unhardened components in moulds, tools, jigs and fixtures

Special note:
Shallow depth case hardening steel

Through-hardening diameter:
15 mm (water)

Hardening depth for ☐ 30 mm:
3.5 mm

Heat treatment data:

	Temperature	*Duration*	*Cooling*
Soft annealing	680 - 710 °C	2 - 5 h	furnace
Stress-relief annealing	600 - 650 °C	min. 4 h	furnace
Hardening	800 - 830 °C	Group I	water, oil
Tempering	160 - 300 °C	min. 2 h	still air
	see tempering curve	depending on cross section	

Physical characteristics:

Coefficient of thermal expansion: between 20 °C and:

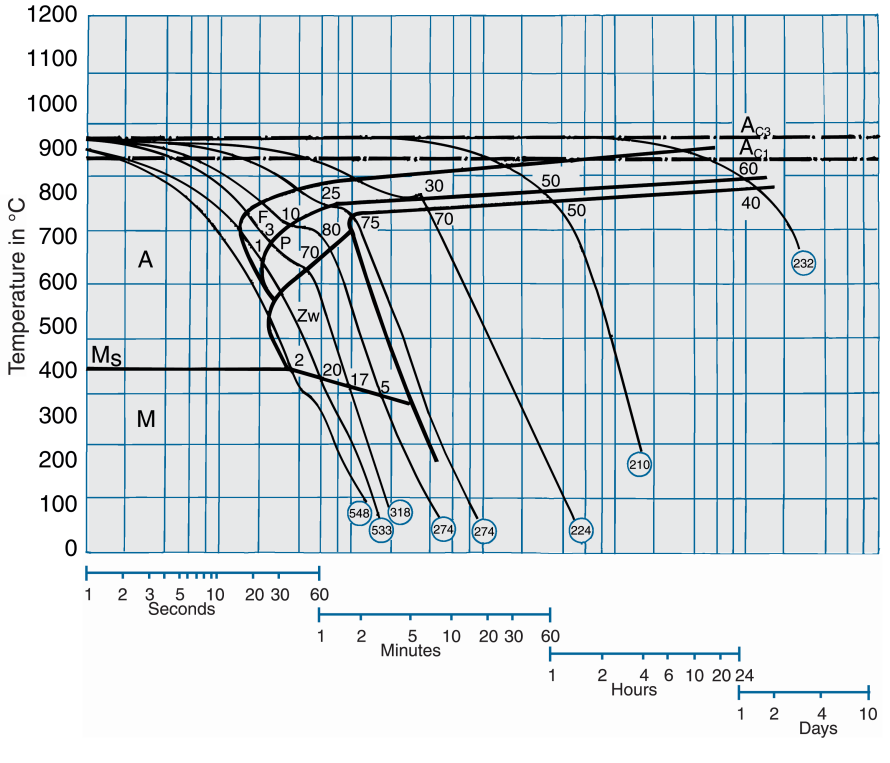
10^{-6} x m / m x K	100	200	300	400	500	600 °C
	11.0	12.0	13.0	13.5	14.0	14.2

Thermal conductivity:

W / m x K	20 °C
	50

Normal working hardness: 650 N/mm², generally used in the as-supplied condition

Continuous time-temperature-transformation diagram



Tempering curve