

ES 70 S

Name:

X 153 CrMoV 12

Material No.:

1.2379

Typical analysis in %:

	C	Cr	Mo	V
	1.53	12.0	0.7	1.0

As-supplied condition:

Soft-annealed to max. 255 HB
(860 N/mm²)

Characteristics:

Ledeburitic 12% chromium steel, high wear resistance, good toughness, high compressive strength, low distortion, nitridable.

General fields of application:

Deep drawing tools, sections susceptible to fracture, shearing knives, trimming dies, thread rolling tools, woodworking tools, hobbing tools, extrusion dies; compression and injection moulds for filled plastics, sprue bushings

Heat treatment data:

	Temperature	Duration	Cooling
Soft annealing	820 - 850 °C	2 - 5 h	furnace
Stress-relief annealing	600 - 650 °C	min. 4 h	furnace
Hardening	1000 - 1050 °C	Group III	oil, air, WB 500 °C
Tempering	480 - 580 °C 3 x, see tempering curve	min. 2 h depending on cross section	still air

Physical characteristics:

Coefficient of thermal expansion: between 20 °C and:

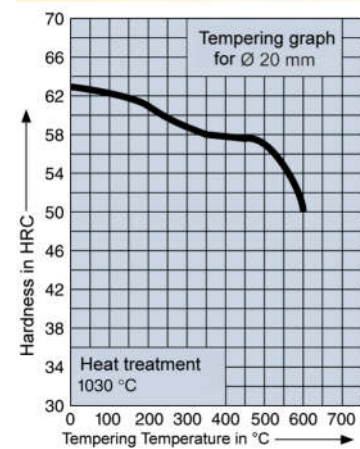
10 ⁻⁶ x m	100	200	300	400 °C
m x K	10.5	11.5	12.0	12.2

Thermal conductivity:

W	20	350	700 °C
m x K	16.7	20.5	24.2

Normal working hardness: 58 - 62 HRC

Tempering curve



Special heat treatment:

If the steel is electrical discharge machined or nitrided the tempering temperature must be above the secondary maximum. Triple tempering is recommended.

Continuous time-temperature-transformation diagram

