



## Scana TM - Toughness mold steel

### Comparable grades:

Toolox 40	SP400.	CENA1
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### General information

Scana TM manufactured by Scana Steel Björneborg AB is a premium quality NI-Cr-Mo steel which is supplied in the hardened and tempered condition. Scana offers a wide dimensional range and even the largest dimensions show high purity, good homogeneity and a very uniform hardness profile all through the cross section. Scana TM is the obvious choice when it comes to saving time, money and risks.

### Chemical Composition (%):

C	Si	Mn	Cr	Ni	Mo	others
0,26	0,25	1,50	1,40	2,00	0,70	+

### Non metallic inclusion (cleanliness)

Specification according to ASTM E45-97, A

Grade	Class A		Class B		Class C		Class D	
	thin	thick	thin	thick	thin	thick	thin	thick
ASTM	Max		Max		Max		Max	
	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0

**Delivery condition:** EAF, VAD, 3D-forged, hardened + double tempered

**Hardness / Strength:** 40 - 44 HRC / 385 – 415 HB / TS = 1290 – 1420 N/mm<sup>2</sup>

**Ultrasonic test standard:** acc. to EN 10228-3 class 4

**Sizes:** Width max 1300 mm; Thickness max 600 mm

**Characteristics:** High tough superclean plastic mould steel with 40 HRC hardness, low segregation rate, high cleanliness, good through-hardenable and high toughness, fine martensitic structure overall the cross section, excellent surface properties, high polishability and grainability.

**Application:** Crack sensitive cavities for plastic injection moulds with special requirements on wear resistance, grainability and polishability. Mould steel for graining and high polishing, for decorative car parts, chromium plated plastic parts, car lights, electronics, TV frames, white ware, compression moulding, processing of strengthen plastics, moulds for weldless injection moulding etc.

**Physical properties:**

Temp °C	20	100	200	300
<b>Modulus of Elasticity</b>				
GPa	212	207	199	192
<b>Coefficient of linear Expansion</b>				
10 <sup>-6</sup> m/mK	11,1	11,3	12,9	13,4
<b>Thermal Conductivity</b>				
W/(mK)	35	36	37	36

**Mechanical properties:**

<b>Yield Strength, Rp</b>	➤ 1150 N/mm <sup>2</sup>
<b>Tensile Strength, RM</b>	➤ 1250 N/mm <sup>2</sup>
<b>Elongation, A</b>	➤ 15 %
<b>Charpy-V Impact test, RT, transvers, Av</b>	➤ 11 J

**Hot forming Ska denna vara med?**

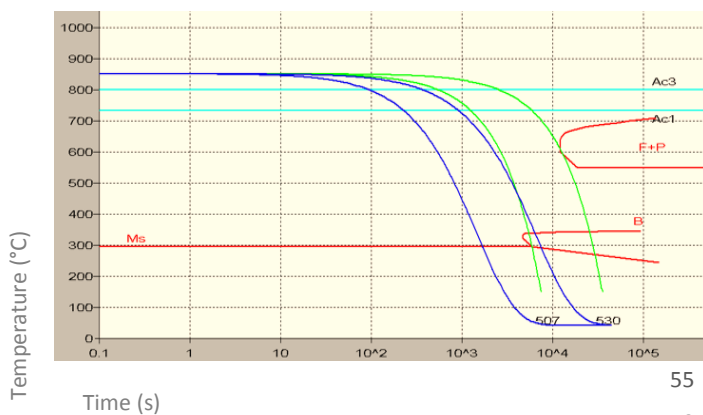
Forging; 1200°C to 900°C / Air cooling

**Heat treatment**

Note: Scana TM is finish heat-treated in the delivery condition. Additional Heat-treatment may be necessary for stress relieving after deep milling operation and for volume welding operation.

	Temp. (°C)	Cooling media
Annealing	680 - 700	air
Hardening	830 - 880	Oil or water (down to 130°C)
Tempering	550 - 580	cooling down on air to 450°C
Stress relieving	500 - 530	cooling down on air to 450°C
Pre-heating for Welding	320 - 350	air

**TTT - diagram**



**Tempering - diagram**

