



## 739A VIP® – Stainless mold steel

### Standards:

AISI	Werkstoff	
AISI 420	1.2083	S136

### General information

739A VIP®, manufactured by Scana Steel Björneborg A,B is a premium quality stainless steel which is supplied in annealed (EFS) or pre hardened 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. 739A VIP is the obvious choice when it comes to saving time, money and risks.

### Chemical Composition (%):

C	Si	Mn	Cr	Ni	Mo	others
0,35	0,80	0,70	13,3	0,40	0,20	+

### 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
739A VIP®	Max		Max		Max		Max	
	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0

**Delivery condition:** EAF, VAD, 3D-forged, EFS treated (extra fine micro structure)

**Hardness / Strength:** Annealed max 220 HB or pre-hardened 30 – 34 HRC

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

**Sizes:** Width max 1500 mm; Thickness max 600 mm

**Characteristics:** Corrosion resistant plastic mould steel with high cleanliness, extra fine annealed structure overall the cross section, good machinability and good surface properties, high polishability (A-1), hardenable under vacuum to 52 - 54 HRC

**Application:** Plastic injection mould for corrosive conditions (not for PVC), moulds for plastic injection when processing of corrosive plastics, rust resistant moulds, transparent plastics, high electronics, steam cooled moulds, etc.

**Physical properties:**

Temp °C	20	100	200	300
<b>Modulus of Elasticity</b>				
GPa	222	216	209	201
<b>Coefficient of linear Expansion</b>				
10 <sup>-6</sup> m/mK	10,2	10,5	10,9	11,3
<b>Thermal Conductivity</b>				
W/(mK)	23,2	24,5	24,8	25,0

**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>	➤ 20 J

**Hot forming**

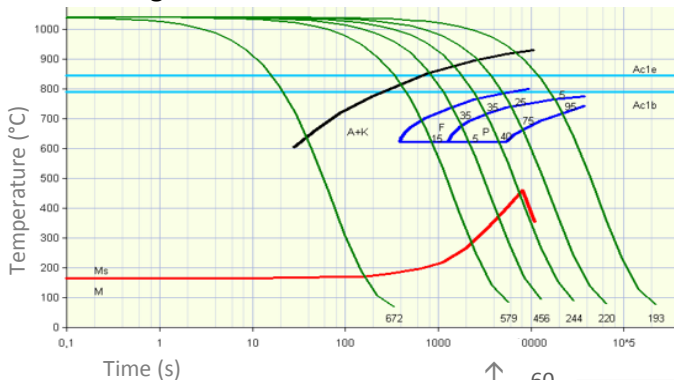
Forging; 1270°C to 900°C / Air cooling

**Heat treatment**

Note: 739A VIP 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 - 870	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

**CCT - diagram**



**Tempering - diagram**

