MOULD STEEL · CORROSION-RESISTANT MOULD STEEL

1.2085 X33CrS16

Pre-hardened 16 % Cr mould steel with sulphur for PVC and aggressive plastics

8000 t + 1800 t	280-325 HB	16 % Cr	EN 10204 3.1
Press and GFM forge	As delivered	Corrosion resistance	Every lot

GRADE DESIGNATION

System	Designation
DIN (W.-Nr.)	1.2085
EN	X33CrS16
Alt.	1.2099 / 420FM
Family	1.2316 with sulphur addition
Standard	DIN 1.2085

SUPPLY RANGE

Form	Size range
Forged block	100-600 x 300-2000 mm
Forged round bar	Ø150-1200 mm
Rolled plate	6-100 x 60-1600 mm
Mould sets	matched plates from one heat

MECHANICAL AND PHYSICAL PROPERTIES

Property	Value
Delivery hardness	280-325 HB (HRC 29-33)
Tensile strength	950-1100 N/mm2
Thermal conductivity	18 W/m K at 100 °C
Corrosion resistance	16 % Cr against HCl from PVC

HEAT TREATMENT

Step	Condition
Delivery condition	quenched and tempered, 280-325 HB
Normally	no heat treatment required
If hardened	1000-1030 °C oil quench, ~48 HRC

CHEMICAL COMPOSITION (% BY MASS)

C	Si	Mn	P	S	Cr	Ni
0.28-0.36	0.20-0.40	0.50-0.80	0.025 max	0.05-0.10	15.0-17.0	0.20-0.50

NOTES FOR THE TOOL DESIGNER

- Not a mirror-polish grade - sulphide stringers open up under polishing. Use 1.2316 or 1.2083 for optical surfaces.
- Best fit: PVC / CPVC moulds, mould bases, humid storage conditions.

TYPICAL APPLICATIONS

- PVC, CPVC and other halogenated plastic moulds
- Mould bases and die sets for corrosive compounds
- Food-industry machine parts and cutting frames
- Tooling stored or operated in humid climates

QUALITY AND INSPECTION

Check	Scope
Mill certificate	EN 10204 3.1, chemistry and mechanical results
Ultrasonic test	SEP 1921 / ASTM A388 on request
Hardness survey	map across the block section on request
Dimensional report	thickness, width, length, squareness

ORDERING INFORMATION

- Grade and standard
- Form and size - thickness x width x length, or diameter and cut length
- Quantity in pieces or kilograms
- Delivery condition and hardness window
- Certificate and inspection requirements

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EN 10204 3.1 mill certificate with every shipment
Chemistry · mechanical properties · test results · heat number

Hardness map and ultrasonic inspection on request.
Values are typical for the grade; the certificate of the actual heat governs.