



E STEEL SDN BHD (891338-A)

NO 3, Lorong Sungai Puloh 7/KU 6,
Kawasan Perindustrian Sungai Puloh, 42100 Selangor D.E
Tel : 03-3292 8686 / 32928666 / 32928777
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D2 Tool Steel (X153CrMoV12), 1.2379, XW41, SKD11, D2, XW42

Chrome steel 12%, very high resistance against abrasive and adhesive wear due to a high volume of hard carbides in the steel matrix, good toughness, very good dimensional stability, high compressive strength, very good base material for PVD/CVD coating as well as nitriding due to its secondary hardening properties. Similar to SKD11 / 2379

Applications: Cutting, punching, stamping tools, shear blades, thread rolling dies, cold extrusion dies, drawing and bending tools, flanging and straightening rolls, fine cutting tools, deep drawing tools, plastic moulds for abrasive polymers.

Chemical Composition	%
Carbon	1.55
Chromium	12.00
Molybdenum	0.80
Vanadium	0.90

Relevant D2 Steel Specifications

Country	USA	German	Japan
Standard	ASTM A681	<u>DIN EN ISO 4957</u>	<u>JIS G4404</u>
Grades	D2	1.2379/X153CrMo12	SKD11

2379 Steel Mechanical Properties

Mechanical Properties	Metric	Imperial
Hardness, Knoop (converted from Rockwell C hardness)	769	769
Hardness, Rockwell C	62	62
Hardness, Vickers	748	748
Izod impact unnotched	77.0 J	56.8 ft-lb
Poisson's ratio	0.27-0.30	0.27-0.30
Elastic modulus	190-210 GPa	27557-30457 ksi



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Heat Treatment

Soft Annealing

Temperature	Cooling	Hardness
820 - 850°C	furnace	max 255 HB

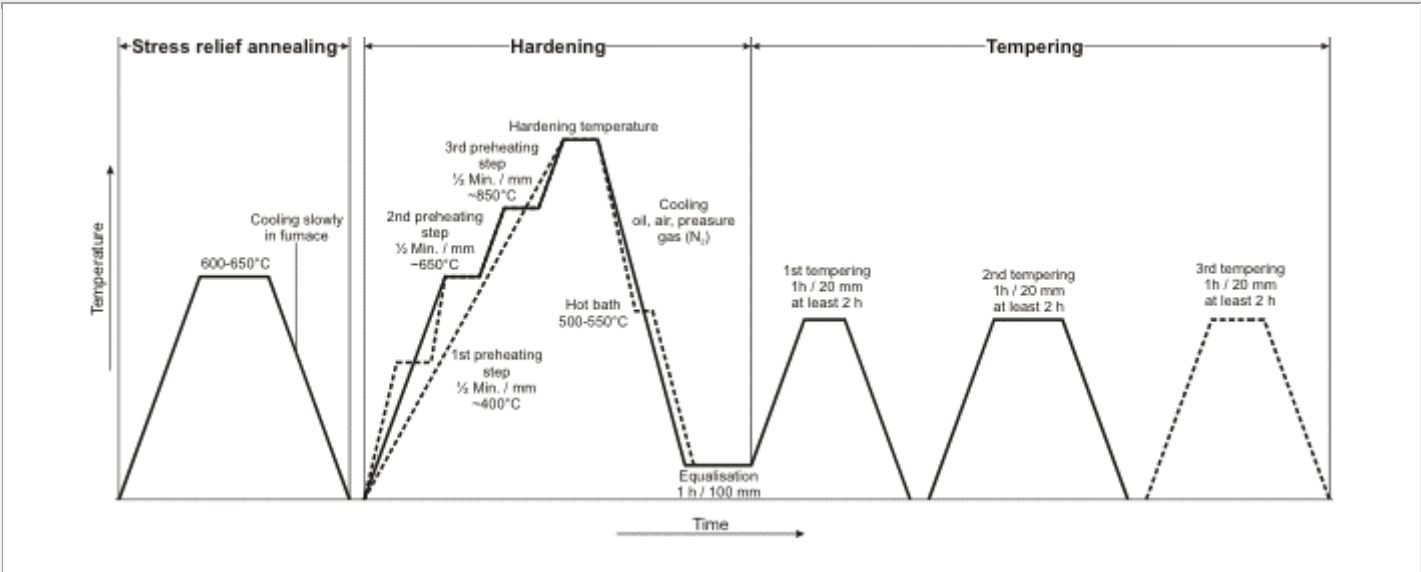
Stress Relief Annealing

Temperature	Cooling
600 - 650°C	furnace

Hardening

Temperature	Cooling	Tempering
1020 - 1030°C	oil, pressure (N ₂) air or hot bath 500 - 550°C	see tempering diagram usually < 300°C
1040 - 1080°C	oil, pressure (N ₂) air or hot bath 500 - 550°C	see tempering diagram usually 500°C

Thermal Cycle Diagram

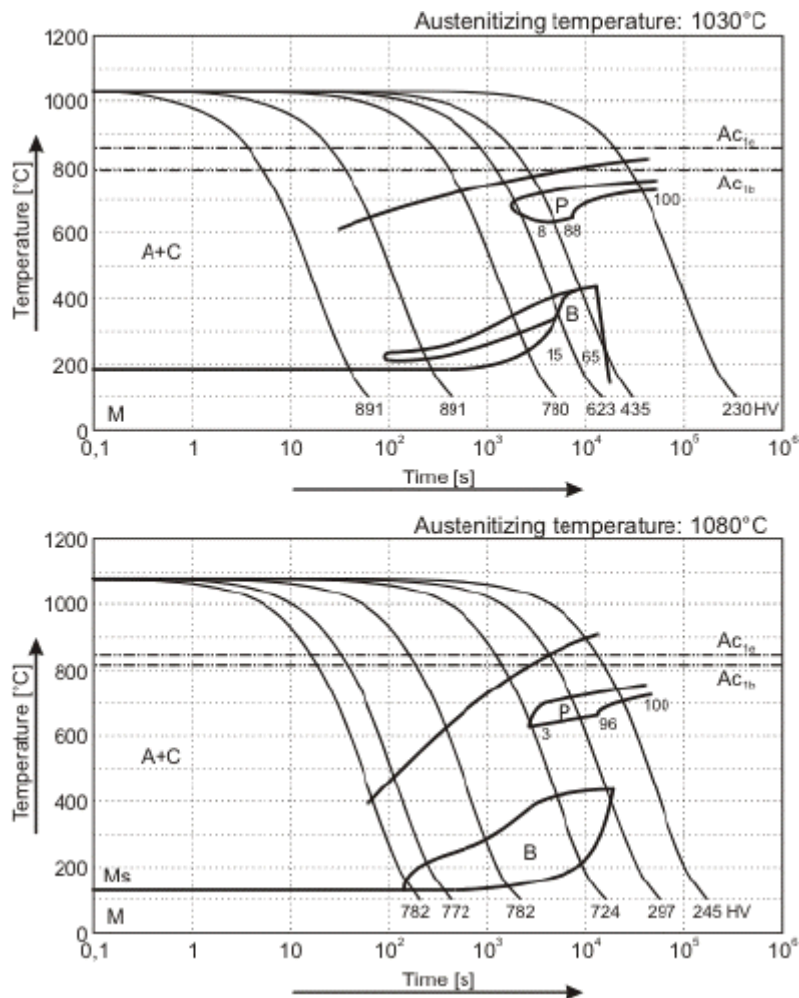


Continuous Cooling Transformation Diagram (CCT)



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Tempering Diagram

