

1.2379

X153CRM_oV12 / NC11LV

COLD WORK TOOL STEEL

APPLICATION

High-duty cutting tools (dies and punches), blanking and punching tools, woodworking tools, shear blades for cutting lightgauge material, thread rolling tools, tools for drawing, deep drawing and cold extrusion, pressing tools for the ceramics and pharmaceutical industries, cold rolls (working rolls) for multiple-roll stands, measuring instruments and gauges, small moulds for the plastics industry where excellent wear resistant required

CHEMICAL COMPOSITION

Chemical composition (in weight %)

Element	C	Si	Mn	P	S	Cr	Mo	V
min	1.45	0.10	0.20	max	max	11.00	0.70	0.70
max	1.60	0.60	0.60	0.03	0.03	13.00	1.00	1.00

TREATMENT

Hardening	1020°C ± 10°C/Air
Tempering	180°C ± 10°C (see tempering diagramm)
Hardness [HRC]	min. 61

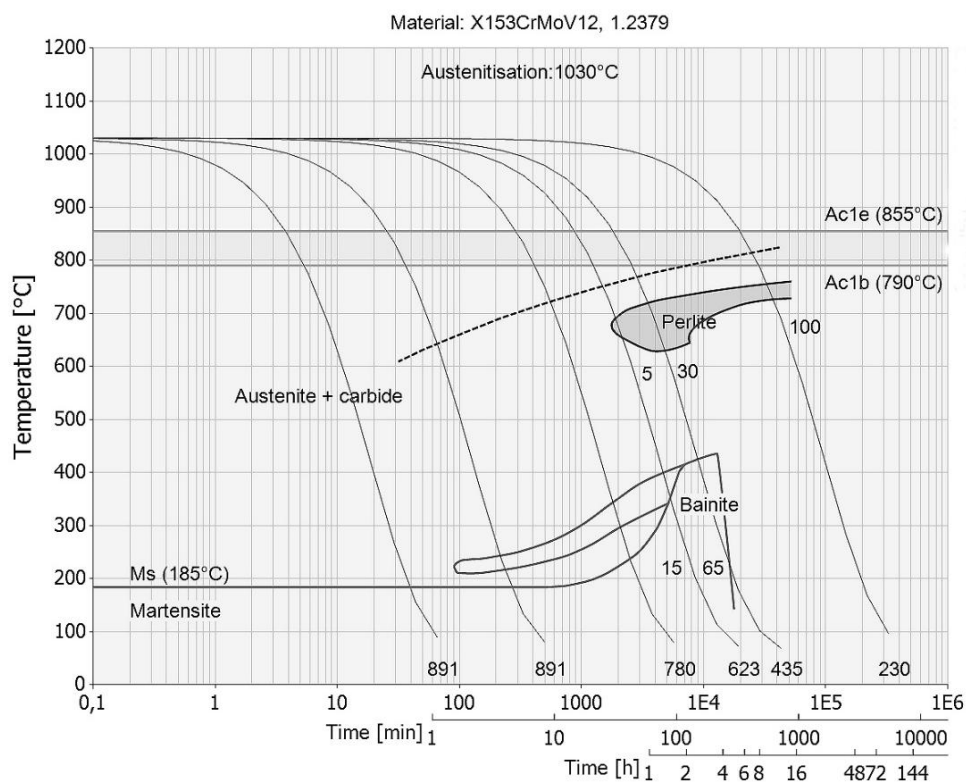
ADDITIONAL HEAT TREATMENT

Soft annealing	830 - 860°C
Stress relieving	650 - 680°C (only for soft delivery conditions)
Additional quenching media	Oil, hot bath 500°C, fluidised bed, gas overpressure

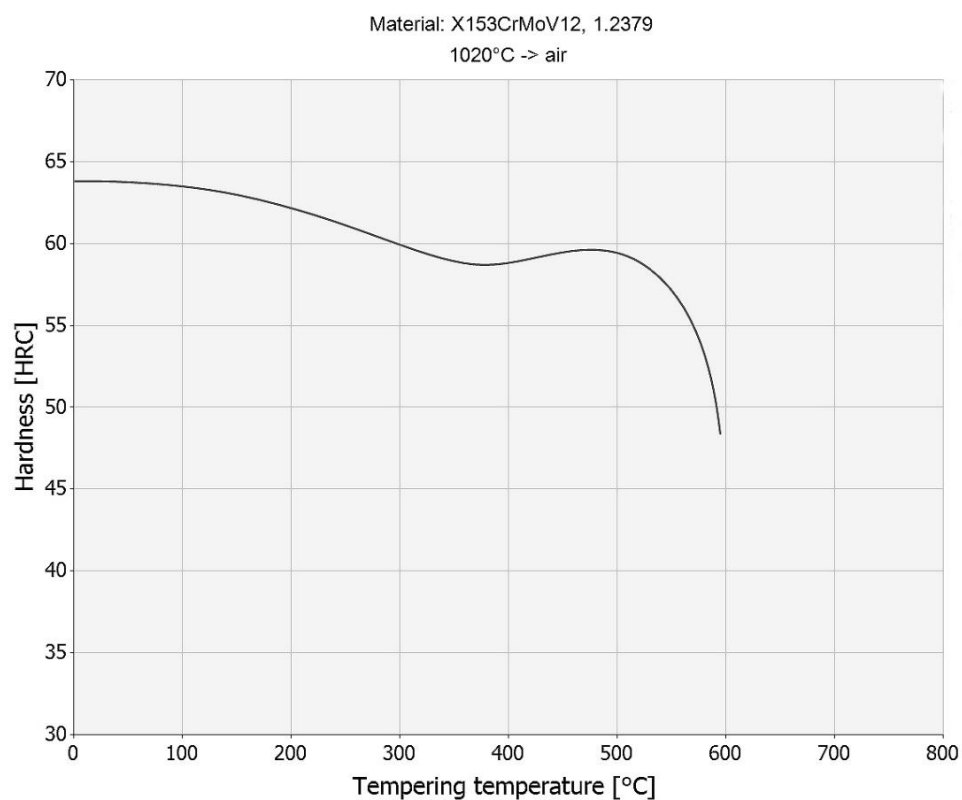
MECHANICAL PROPERTIES

Condition	Soft annealed (+A)
Hardness [HB]	max. 255

CONTINUOUS COOLING TRANSFORMATION (CCT) DIAGRAM



TEMPERING DIAGRAM



NOTE: All technical information is for reference only