outokumpu
high performance stainless steel

Dura 4116

EN 1.4116

General characteristics

Similar to 1.4110, but with elevated wear resistance. Applied especially for cutting instruments which undergo partial hardening for excellent wear resistance of functional surfaces.

Typical applications

- Cutting instruments

Products & dimensions

Cold rolled products, available dimensions (mm)

Surface finish		Coil / Strip		Plate / Sheet	
		Thickness	Width	Thickness	Width
2B	Cold rolled, heat treated, pickled, skin passed	0.50-3.50	30-1250	0.50-3.50	350-1250
2BB	Bright-pickled	0.50-3.50	30-1350	0.50-3.50	600-1350
2C	Cold rolled, heat treated	0.60-4.00	30-1350		
2D	Cold rolled, heat treated, pickled	0.50-4.00	30-1350	0.50-4.00	600-1300
2E	Cold rolled, heat treated, mech. desc. pickled	0.50-4.00	30-1350	0.50-4.00	600-1300
2G	Ground	0.50-3.00	30-1350	0.50-3.00	600-1300
2H	Work hardened	0.50-3.00	30-1350	0.50-3.00	600-1350
2J	Brushed or dull polished	0.50-3.00	30-1350	0.50-3.00	600-1300
2R	Cold rolled, bright annealed	0.05-1.50	3-649		

Continous hot rolled products, available dimensions (mm)

Surface finish		Coil / Strip		Plate / Sheet	
		Thickness	Width	Thickness	Width
1C	Hot rolled, heat treated, not descaled	5.00-8.00	50-1350		
1D	Hot rolled, heat treated, pickled	5.00-5.50	30-1250	5.00-5.50	350-1250
1U	Black hot rolled	5.00-8.00	50-1350		

Chemical composition

The chemical composition is given as % by weight.

	C	Mn	Cr	Ni	Mo	N	Other
Typical	**0.50**		**14.4**		**0.6**		**V:0.11**
EN 10088-2	0.45-0.55	≤1.0	14.0-15.0		0.50-0.80		V:0.10-0.20

Corrosion resistance

Pitting corrosion resistance		Crevice corrosion resistance
PRE	CPT	CCT
16	<10	<0

PRE Pitting Resistant Equivalent calculated using the formula: PRE = %Cr + 3.3 x %Mo + 16 x %N
CPT Corrosion Pitting Temperature as measured in the Avesta Cell (ASTM G 150), in a 1M NaCl solution (35,000 ppm or mg/l chloride ions).
CCT Critical Crevice Corrosion Temperature is the critical crevice corrosion temperature which is obtained by laboratory tests according to ASTM G 48 Method F

Mechanical properties

Cold rolled coil and sheet	$R_{p0.2}$ MPa	$R_{p1.0}$ MPa	R_m MPa	Elongation[1)] %	Impact strength J	Rockwell	HB	HV
Typical (thickness 1 mm)	**390**	**430**	**640**					
EN 10088-2			≤ 850	≥ 12				

Hot rolled coil and sheet	$R_{p0.2}$ MPa	$R_{p1.0}$ MPa	R_m MPa	Elongation[1)] %	Impact strength J	Rockwell	HB	HV
Typical (thickness 4 mm)	**410**	**490**	**670**	**22**			**90**	
EN 10088-2			≤ 850	≥ 12				

[1)]Elongation according to EN standard:
A_{80} for thickness below 3 mm.
A for thickness = 3 mm.
Elongation according to ASTM standard $A_{2"}$ or A_{50}.

Physical properties

Density kg/dm³	Modulus of elasticity GPa	Thermal exp. at 100 °C 10^{-6}/°C	Thermal conductivity W/m°C	Thermal capacity J/kg°C	Electrical resistance µΩm	Magnetizable
7.7	215	10,5	30	460	0.65	Yes

Fabrication

Standards & approvals

Standard	Designation

EN 10088-2	1.4116

Contacts & Enquiries

Contact your nearest sales office

www.outokumpu.com/contacts

Working towards forever.

We work with our customers and partners to create long lasting solutions for the tools of modern life and the world's most critical problems: Clean energy, clean water and efficient infrastructure. Because we believe in a world that lasts forever.

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