outokumpu
high performance stainless steel

Dura 17-7PH

EN 1.4568, ASTM TYPE 631

General characteristics

Precipitation hardening grade with high strength and hardness, good corrosion resistance and satisfactory formability (depending on heat treatment/"Condition"). For e.g. retaining rings, springs, valves and gears, aircraft parts.

Typical applications

- Retaining rings
- Springs
- Valves and gears
- Aircraft parts

Products & dimensions

Cold rolled products, available dimensions (mm)

Surface finish		Coil / Strip		Plate / Sheet	
		Thickness	Width	Thickness	Width
2BB	Bright-pickled	1.50-2.00	30-1000	1.50-2.00	600-1000
2C	Cold rolled, heat treated	1.50-2.00	30-1000		
2D	Cold rolled, heat treated, pickled	1.50-2.00	30-1000	1.50-2.00	600-1000
2E	Cold rolled, heat treated, mech. desc. pickled	1.50-2.00	30-1000	1.50-2.00	600-1000
2G	Ground	1.50-2.00	30-1000	1.50-2.00	600-1000
2H	Work hardened	0.05-1.50	3-630		
2J	Brushed or dull polished	1.50-2.00	30-1000	1.50-2.00	600-1000
2R	Cold rolled, bright annealed	0.05-2.00	3-1250	0.80-2.00	350-1250

Continous hot rolled products, available dimensions (mm)

Surface finish		Coil / Strip		Plate / Sheet	
		Thickness	Width	Thickness	Width
1C	Hot rolled, heat treated, not descaled	3.50-4.00	1000-1030		
1U	Black hot rolled	3.50-4.00	1000-1030		

Chemical composition

The typical chemical composition for this grade is given in the table below, together with composition limits given for the product according to different standards. The required standard will be fully met as specified on the order.

The chemical composition is given as % by mass.

	C	Mn	Cr	Ni	Mo	N	Other
Typical	**0.08**		**17.0**	**7.0**			**Al:1.0**
EN 10088-2	≤0.09	≤1.0	16.0-18.0	6.5-7.8			Al:0.7-1.5
EN 10088-3	≤0.09	≤1.0	16.0-18.0	6.5-7.8			Al:0.7-1.5
EN 10088-4	≤0.09	≤1.0	16.0-18.0	6.5-7.8			Al:0.7-1.5

Corrosion resistance

Pitting corrosion resistance		Crevice corrosion resistance
PRE	CPT	CCT
17	<10	<0

Pitting Resistance Equivalent (PRE) is calculated using the following formula: PRE = %Cr + 3.3 x %Mo + 16 x %N
Corrosion Pitting Temperature (CPT) as measured in the Avesta Cell (ASTM G 150), in a 1M NaCl solution (35,000 ppm or mg/l chloride ions).
Critical Crevice Corrosion Temperature (CCT) 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)								
EN 10088-2			≤ 1030	≥ 19				

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)	**330**	**360**	**850**	**37**			**94**	

Hot rolled quarto plate	$R_{p0.2}$ MPa	$R_{p1.0}$ MPa	R_m MPa	Elongation[1)] %	Impact strength J	Rockwell	HB	HV
Typical (thickness 15 mm)	**210**	**240**	**700**	**50**				

Wire rod	$R_{p0.2}$ MPa	$R_{p1.0}$ MPa	R_m MPa	Elongation[1)] %	Impact strength J	Rockwell	HB	HV
Typical	**210**	**240**	**700**	**50**				

[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/dm^3	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
7.8	200	13	16	500	0.80	Yes

Fabrication

More detailed information concerning welding procedures can be obtained from the Outokumpu Welding Handbook, available from our sales offices.

Standards & approvals

Standard	Designation
EN 10088-2	1.4568
EN 10088-3	1.4568
EN 10088-4	1.4568

17-7-PH is a registered trademark of AK Steel Corporation.

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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