



<b>Quality</b>	<b>X6Cr17</b>	<b>Ferritic</b>	<i>Technical card 2018</i>
Number	<b>1.4016</b>	<b>Stainless Steel</b>	<i>Lucefin Group</i>

## Chemical composition

C%	Si%	Mn%	P%	S% <sup>a)</sup>	Cr%	
max	max	max	max	max		
0,08	1,00	1,00	0,040	0,030	16,0-18,0	EN 10088-3: 2014
± 0.01	+ 0.05	+ 0.03	+ 0.005	± 0.005	± 0.2	

Product deviations are allowed

<sup>a)</sup> for improving polishability, it is suggested a controlled sulphur content of max 0,015 %

## Temperature °C

Melting range	Hot-forming	Recrystallization +RA	Soft annealing +A	MMA welding - AWS electrodes pre-heating annealing after w.
1510-1425	1120-850	810-700 cooling to 300, then air	850-750 air	200 800-750
Isothermal annealing +I	Quenching +Q	Tempering +T	joint with steel	
not suitable	not suitable	not suitable	carbon	CrMo alloyed stainless
			E60 xx	E8018-B 2 E309 – E308
			cosmetic welding	E430

**Chemical treatment** - Pickling (15 - 25% HNO<sub>3</sub>) + (1 - 8% HF) hot or cold

## Mechanical properties

**Heat-treated material** EN 10088-3: 2014 in conditions 1C, 1E, 1D, 1X, 1G, 2D

size		Testing at room temperature					
mm		R	Rp 0.2	A%	Kv <sub>2</sub> +20 °C	HBW <sup>a)</sup>	<sup>a)</sup> for information only
from	to	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	J min	max	
	100	400-630	240	20	-	200	+A annealed material

**Bright bars of heat-treated material** EN 10088-3: 2014 in conditions 2H, 2B, 2G, 2P

size		Testing at room temperature					
mm		R	HBW	R	Rp 0.2	A%	Kv <sub>2</sub> +20 °C
from	to	N/mm <sup>2</sup> max	max	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	J min
	10 <sup>b)</sup>	-	-	500-750	320	8	-
10	16	-	-	480-750	300	8	-
16	40	-	-	400-700	240	15	-
40	63	-	-	400-700	240	15	-
63	100	-	-	400-630	240	20	-

+A annealed material

<sup>b)</sup> in the range of 1 mm ≤ d < 5 mm, values are valid only for rounds – the mechanical properties of non round bars of < 5 mm of thickness have to be agreed at the time of request and order

**Forged** UNI EN 10250-4: 2001

size		Testing at room temperature					
mm		R	Rp 0.2	A%	Kv +20 °C	HB	
from	to	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	J min	max	
	100	400-630	240	-	-	200	+A annealed material

Effect of **cold-working** (hot-rolled +RA+C). Approximate values

R	N/mm <sup>2</sup>	550	620	680	700	720	770	790	820	860
Rp 0.2	N/mm <sup>2</sup>	320	500	590	620	650	680	700	750	800
A	%	22	11	10	9	9	9	9	9	9
Reduction	%	0	10	20	30	40	50	60	70	75

**Minimum values at high temperatures** EN 10088-3: 2014

Rp 0.2	N/mm <sup>2</sup>	220	215	210	205	200	195	190	+A annealed
Test at	°C	100	150	200	250	300	350	400	

<b>Thermal expansion</b>	$10^{-6} \cdot K^{-1}$	►	10.0	10.5	10.5	10.5	11.0	12.0
<b>Modulus of elasticity</b>	longitudinal GPa		220	215	210	205	195	
<b>Poisson number</b>	$\nu$		0.144	0.138				
<b>Electrical resistivity</b>	$\Omega \cdot mm^2/m$		0.60		0.77		0.93	1.05
<b>Electrical conductivity</b>	Siemens $\cdot m/mm^2$		1.67					1.25
<b>Specific heat</b>	J/(Kg $\cdot$ K)		460		495		570	660
<b>Density</b>	Kg/dm <sup>3</sup>		7.70					760
<b>Thermal conductivity</b>	W/(m $\cdot$ K)		25					
<b>Relative magnetic permeability</b>	$\mu_r$		600-1000 ~					
<b>°C</b>			<b>20</b>	<b>100</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>600</b>

The symbol ► indicates between 20 °C and 100 °C, 20 °C and 200 °C .....

<b>Corrosion resistance</b>	Atmospheric		Chemical			x phenol, food, detergents, weak organic acids	
Fresh water	<i>industrial</i>	<i>marine</i>	<i>medium</i>	<i>oxidizing</i>	<i>reducing</i>		
<b>x</b>	<b>x</b>		<b>x</b>	<b>x</b>			
<b>Magnetic</b>	yes						
<b>Machinability</b>	good						
<b>Hardening</b>	cold-drawing and other cold plastic deformations						
<b>Service temperature in air</b>	up to 800 °C continuous service and up to 875 °C intermittent service						
<b>Europe</b>	<b>USA</b>	<b>USA</b>	<b>China</b>	<b>Russia</b>	<b>Japan</b>	<b>India</b>	<b>Republic of Korea</b>
EN	UNS	ASTM	GB	GOST	JIS	IS	KS
X6Cr17	S43000	<b>430</b>	1Cr17	12Ch17	SUS 430	X07Cr17	STS 430

#### Architectural element

