FAGERSTA Stainless

R560.21

EN: **1.4568**
Type: **631**
17-7 PH

R560.21 (17-7PH) is a semi-austenitic precipitation-hardening steel used for applications requiring high strength, excellent relaxation- and fatigue properties and a moderate level of corrosion resistance. This grade is easily formed in annealed condition and then after cold working, hardened to high-strength level by a heat treatment at 480°C (900°F). Typical applications are products for aerospace components and wire for springs, bent and formed parts.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N	Al	
0.080	0.40	0.70	16.5	7.6	<0.50	<0.030	1.00	

PRE: 18 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments:

THERMAL TREATMENT

Annealing temperature	1030-1070	°C
	1890-1960	°F
Age hardening temperature	480	°C
	900	°F

PHYSICAL PROPERTIES

Condition: Annealed

Density	7.8	g / cm^3
Moduls of elasticity, E	200 000	GPa
Specific heat 0-100°C	500	J / kg°C

MAX. OPERATING TEMPERATURE

Operating temp. in air	350	°C
	660	°F
Scaling temp. in air	850	°C
	1560	°F

TYPICAL MECHANICAL PROPERTIES

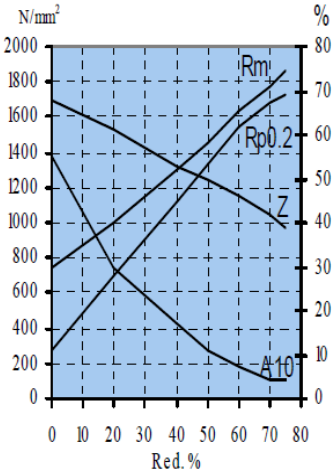
Condition: D-cooled

Proof strength	**Rp0.2**	min. 220	N / mm^2
Tensile strength	**Rm**	700-800	N / mm^2
Elongation	**A10**	min. 35	%

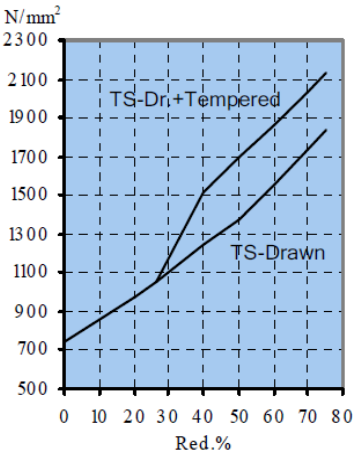
THERMAL CONDUCTIVITY

20 °C	15.0	W / mK
100 °C	15.5	W / mK
200 °C	17.5	W / mK
300 °C	19.5	W / mK
600 °C	22.5	W / mK
800 °C	25.5	W / mK

DEFORMATION GRAPH



Tempering effect (480°C/1h) vs area reduction



THERMAL EXPANSION

Thermal expansion per °C x 10-6 from 20°C to:

100 °C	13.0
200 °C	13.5
300 °C	14.0

RESISTIVITY

20 °C	900	µΩmm
100 °C	950	µΩmm
200 °C	1000	µΩmm
400 °C	1050	µΩmm