


 FSAB grade **R 327.10**
253MA

 Corresponding standards
 UNS: S30815 EN: 1.4835
 W.nr: 1.4893 SS: 2368

R327.10 (253MA) is a fully austenitic stainless steel containing small additions of rare earth metal cerium (Ce) which together with a relatively high Cr- and high Si-content very rapidly will form a very adherent oxide which make the steel resistant to scaling when exposed to large, rapid temp. fluctuations. This steel has a very high scaling temp, 1150°C (2110°F), and combines high oxidation resistance with high creep strength. Structural changes when used in the 600 - 850°C (1110-1560°F) range can lead to reduced impact toughness at room temp. This grade shall not be used in reducing sulphurous atmosphere. Typical applications are parts for treatment furnaces like conveyor belts, fasteners and grids for sintering plants.

Chemical composition (nominal)%

C	Si	Mn	Cr	Ni	Mo	N	Ce
0.075	1.60	0.50	21.0	10.2	<0.3	0.165	0.06

 PRE : 26
 (PRE=Cr+3.1xMo+25xN)

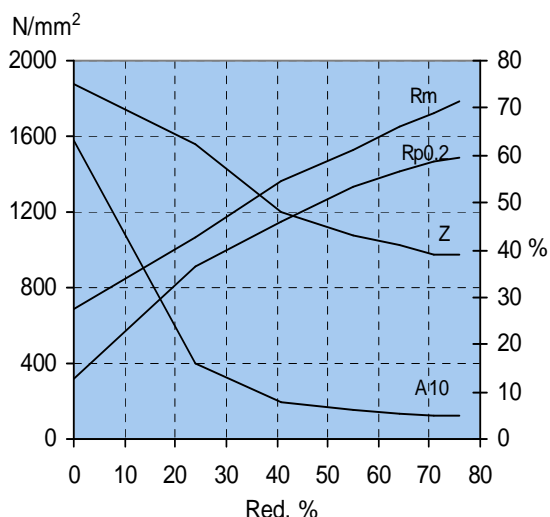
Typical mechanical properties

Condition: annealed

Proof strength Rp0.2 (N/mm ²)	min. 250
Tensile strength Rm (N/mm ²)	600-700
Elongation A10 (%)	min. 45

Thermal treatment

Annealing temp. 1020-1120°C/1870-2050°F

Deformation graph

Physical properties in annealed cond.

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

Resistivity (microhm - mm)

20°C	840	200°C	1030	600°C	1370
100°C	930	400°C	1220	800°C	1430

Thermal conductivity (W/mK)

100°C	15.0	500°C	21.0	800°C	25.5
300°C	18.0	600°C	23.0	1000°C	29.0

Thermal expansion per °C, x 10⁻⁶ from 20°C to

100°C	16.5	600°C	18.5
300°C	17.0	800°C	19.0
500°C	18.0	1000°C	19.5

Max. operating temp. in different atmospheres

Scaling temp. in air	1150°C/2100°F
Oxidizing atm.	1100°C/2010°F
Oxidizing sulphurous atm.	900-1050°C*)
Reducing sulphurous atm.	600-900°C*)

*) Max. temp. depending on fluegas impurities (S,Na,V)

Delivery forms

Standard sizes (mm) 5.6, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0, 9.5, 10.0, 10.5, 11.0, 11.5, 12.0, 12.5, 13.0, 13.5

 Tolerances (mm) 5.6 -10.0 mm ± 0.15
 10.5 -13.5 mm ± 0.20

Ovality max. 60% of the tot. tol. range

 Surface condition 5.6 -10 mm seam depth ≤ 0.10 mm
 >10 mm max. 1% of the diameter