



Martensitic Stainless Steels

410SS, 420SS

These are so-called because of their martensitic crystal structure. These steels are well suited for applications which call for high strength, hardness and resistance to abrasion and corrosion. It can be cold-formed and hot worked, but also heat-treated to “austenitise” the structure and quenched for maximum hardness (martensite) and then tempered to improve ductility.

Characteristics

- No significant nickel content
- Hardenable by heat treatment
- Magnetic

Typical end uses

- 410 Clips, springs and cutlery
- 420/440 Valves

Nominal Chemical Composition				
Stainless Steel	Cr	Mn	Ni	C
410SS	12.6	1 max.	0.75 max.	0.15
420SS	13	1 max.	0.75 max.	0.35

Applicable Specifications			
Stainless Steel	ASTM	AMS Spec No.	DIN
410 SS	A167	5504	1.4001
420 SS	A167	5506	1.4024

Mechanical Properties				
Stainless Steel	Temper	Tensile Strength	Yield Strength	Elongation (% in 50.8mm)
410 SS	Annealed	448-655N/mm ²	175N/mm ² min.	20% min.
420 SS	Annealed	690N/mm ² max.	207N/mm ² min.	20% min.
	SPL Spring		1207N/mm ² max.	

Physical Properties			Thermal Properties	
Stainless Steel	Density	Modulus of Elasticity	Thermal Conductivity	Coefficient of Expansion 0-100°C x 10⁶K⁻¹
410 SS	7.70 gcm ³	200 GPa	24.9 Wm ⁻¹ K ⁻¹	9.9
420 SS	7.64 gcm ³	200 GPa	24.9 Wm ⁻¹ K ⁻¹	10.3

Electrical Properties	
Stainless Steel	Electrical Resistivity uOhm cm
410 SS	57
420 SS	55

If you have any questions or to discuss your requirements, please contact us, the details are on our website:

www.datumalloys.com

