

AUSTENITIC STEELS

Application Segments

Engineering

Available Product Variants

Long Products

Product Description

BÖHLER A220 is a low carbon, chromium nickel and molybdenum steel. Structure homogeneous, stable austenite. Weldable with analogous filler metal giving fully austenitic deposit. Resistant to intergranular corrosion in the temperature range up to 750°F (400°C). Resistance to acids having a reducing effect, like diluted sulphuric acid and hydrochloric acid is good. The steel is not susceptible to pitting, crevice and stress corrosion cracking in media containing chloride ions and possesses excellent resistance to the attack of urea and biocompatibility. Cold forming properties are good. The steel is capable of taking a mirror finish. The steel is produced as a remelt grade and thus meets the usual requirements for steel purity as specified for implant material.

Process Melting

Airmelted + ESR

Applications

> Medical

> Medical Instruments & Implants

> Medical Industry

Technical data

Material designation		Standards	
1.4435	SEL	DIN ISO 5832-1	DIN
1.4441		E114	ASTM
X2CrNiMo18-14-3	EN	F138	
X2CrNiMo18-15-3		7252/1	
S31603	UNS		
316LUG	AISI		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N
max. 0.030	max. 0.75	max. 2.00	max. 0.025	max. 0.010	17.00 to 19.00	2.25 to 3.00	13.00 to 15.00	max. 0.50	max. 0.10	max. 0.10

Related to ASTM F138. Composition index = % Cr + 3.3 * % Mo = min 26.0

Delivery condition

Solution Annealed + Quenched	
Tensile Strength (MPa ksi)	min. 490 72
Yield Strength (MPa ksi)	min. 190 28
Hot worked	
Hardness (HB)	max. 250
Solution annealed + cold worked	
Tensile Strength (MPa ksi)	min. 860 125
Yield Strength (MPa ksi)	min. 690 101 Diameter or thickness 1.60 - 38.1 mm.
Solution annealed + cold worked	
Tensile Strength (MPa ksi)	min. 1,350 196 Condition extra - hard - diameter or thickness 1.60 - 6.35 mm.

Round Bars and Wire Rod (if any)

		Diameter*				
mm				inch		
ROLLED						
5.00	-	15.50		0.197	-	0.610

* Diameter 5.00 - 15.5 mm available as Wire Rod.
 More information regarding MOQ, length and tolerance upon request.

For additional specifications and other sizes please contact BÖHLER Edelstahl - Special Materials Engineering

The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.