



**1.4441**  
**Implant**  
**austenitic**  
**Stainless Steel**

Material No.	DIN Abbreviation	AFNOR	AISI/SAE/ASTM	ISO	Euro Standard EN	Others
1.4441	X2CrNiMo18-15-3	Z 2 CN 18.14.3	AISI ~ 316LVM ASTM F138	5832-1	X2CrNiMo18-15-3	UNS S31673

Distinctive feature & main attribute: a rust- and acid-proof chromium-nickel-molybdenum-steel alloy, precedingly refined by an electroslag remelting process (ESR), designed for components with increased chemical stability due to the qualities ISO 5832-1 and ASTM F-138, nevertheless, it has a limited machinability and high wear of tools.

Use & application range: this quality particularly meets the requirement of implants and surgical instruments.

REFERENCE ANALYSIS %	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	Fe
	max. <b>0.03</b>	max. <b>0.75</b>	max. <b>2.00</b>	max. <b>0.025</b>	max. <b>0.01</b>	max. <b>17.00</b> <b>19.00</b>	<b>2.25</b> <b>3.00</b>	<b>13.00</b> <b>15.00</b>	max. <b>0.50</b>	max. <b>0.10</b>	balance

EXECUTION DELIVERY FORM STANDARD SIZES AVAILABILITY
<ul style="list-style-type: none"> <li>• Execution in 3 m (2 m) round bars as well as in coils for Escomatic (not for medical use)</li> <li>• Standard size in stock: see <a href="#">Product range</a></li> <li>• Other sizes on request</li> </ul>

TOLERANCES
<ul style="list-style-type: none"> <li>• High precision cold drawn, ground, polished; ISO <b>h8 (h7)</b>; surface finish Ra 0.4 (N5)</li> <li>• Ø 1.00 – 6.00 mm, extra hard</li> <li>• Ø 3.00 – 22.00 mm, hard K860</li> <li>• Tighter tolerances on request</li> </ul>

MECHANICAL PROPERTIES
At delivery status: <ul style="list-style-type: none"> <li>• Tensile strength (<math>R_m</math>)               <ul style="list-style-type: none"> <li>a) hard K860 (for screws): <b>900 – 1150 MPa</b></li> <li>b) extra hard: <b>min. 1400 MPa/mm<sup>2</sup></b></li> </ul> </li> </ul>

HEAT TREATMENT
<ul style="list-style-type: none"> <li>• Soft annealing: 1050 °C, cooling in water</li> <li>• Hardening and tempering by heat treatment is impossible</li> </ul>

CUTTING RATES
<ul style="list-style-type: none"> <li>• <math>v_c \sim 20 - 30 \text{ m/min}</math>, long-chipping, value depending on the lubrication oil, cutting tools and shape of parts.</li> <li>• Cutting oil: e.g. INOX or ORTHO NFX of Motorex</li> </ul>