

**Classifications**

<b>EN ISO 3581-A</b>	<b>AWS A5.4 / SFA-5.4</b>	<b>EN ISO 3581-B</b>
E 19 12 3 Nb B 2 2	E318-15	ES318-15

**Characteristics and typical fields of application**

Basic coated, core wire alloyed and stabilized electrode of E 19 12 3 Nb B / E318-15 type. Mainly for welding Ti and Nb-stabilized 1.4571 / 316Ti and 1.4580 / 316Cb austenitic stainless steel grades. Designed to produce first class weld deposits with reliable CVN impact toughness values down to -90°C. Good gap bridging ability, very good root pass and excellent X-ray safety. Good welding characteristics in all positions except verticaldown with easy weld pool and slag control as well as easy slag removal. Clean bead surfaces and minimum post-weld cleaning. An excellent electrode for welding on site and for heavy and rigid components. Max. service temperature 400°C.

**Base materials**

1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4409 GX2CrNiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-13-3, 1.4437 GX6CrNiMo18-12, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12  
UNS S31600, S31603, S31635, S31640, S31653  
AISI 316, 316L, 316Ti, 316Cb

**Typical analysis**


	C	Si	Mn	Cr	Ni	Mo	Nb
wt.-%	0.03	0.4	1.3	18.8	11.8	2.7	0.41

**Mechanical properties of all-weld metal - typical values (min. values)**

Condition	Yield strength $R_{p0.2}$	Tensile strength $R_m$	Elongation A ( $L_0=5d_0$ )	Impact energy ISO-V KV J	
	MPa	MPa	%	20°C	-90°C
u	480 (≥ 350)	640 (≥ 550)	35 (≥ 25)	97	52 (≥ 32)

u untreated, as-welded

**Operating data**

	<b>Polarity</b>	DC+	<b>Dimension mm</b>	<b>Current A</b>
	<b>Electrode identification</b>	FOX SAS 4 318-15 E 19 12 3 Nb B	2.5 × 300	50 – 80
			3.2 × 350	80 – 110
			4.0 × 350	110 – 140

Suggested heat input max. 1.5 kJ/mm and interpass temperature max. 150°C.

Preheating and post-weld heat-treatment not necessary. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

**Approvals**

TÜV (00774), DB (30.014.05), ABS, DNV, CE