

**Classifications**

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22 / SFA-5.22
T 23 7 N L R M21 (C1) 3	TS 2307-F M21 (C1) 0	E2307T0-4(1)

**Characteristics and typical fields of application**

Rutile flux-cored wire of T 23 7 N L R / E2307T0 type for welding the lean duplex stainless steels LDX 2101® (1.4162 / UNS S32101), 2304 (1.4362 / UNS S32304) and similar alloys. The combination of excellent strength and better resistance to pitting corrosion, crevice corrosion and stress corrosion cracking than 1.4301 / 304 and 1.4307 / 304L makes this alloy suitable for construction of for instance storage tanks, containers, heat exchangers and pressure vessels. Thanks to the low molybdenum content, the resistance to pitting corrosion and stress corrosion cracking in nitric acid containing environments is very good. Typical applications are within civil engineering, transportation, desalination, water treatment, pulp & paper, etc. FOXcore 2307-T0 provides excellent weldability in flat as well as horizontal-vertical position. Welding in vertical-up and overhead positions is preferably done with FOXcore 2307-T1. The wire is over-alloyed with nickel to promote weld metal austenite formation. Ferrite measured with FeritScope MP30  $\geq$  30 FN. Suitable for service temperatures from  $-50^{\circ}\text{C}$  to  $250^{\circ}\text{C}$ .

**Base materials**

1.4162 X2CrMnNiN21-5-1, 1.4362 X2CrNiN23-4, 1.4482 X2CrMnNiMoN21-5-3  
 UNS S32101, S32001, S32304  
 LDX 2101®, SAF 2304, 2001  
 ASME SA 240, ASME SA 790, ASME Code Case 2418 and similar alloys

**Typical analysis**

	C	Si	Mn	Cr	Ni	Mo	N	FN
wt.-%	0.026	0.7	1.2	24.2	8.8	0.4	0.14	30 - 45

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

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		Hardness
	$R_{p0.2}$	$R_m$	$(L_0=5d_0)$	20°C	$-40^{\circ}\text{C}$	
	MPa	MPa	%			HB
u	570 ( $\geq$ 450)	760 ( $\geq$ 690)	28 ( $\geq$ 20)	65	45	240

u untreated, as-welded – shielding gas M21 (Ar + 18% CO<sub>2</sub>)

**Operating data**

	<b>Polarity</b>	DC +	<b>Dimension mm</b>
	<b>Shielding gas (EN ISO 14175)</b>	M21, (C1)	1.2

Welding with standard GMAW power source with DC+ polarity. No pulsing needed. Backhand (drag) technique preferred with a work angle of approximately 80°. Ar + 15 – 25% CO<sub>2</sub> offers the best weldability. 100% CO<sub>2</sub> can be also used, but the voltage should be increased by 2 V and the weld metal austenite content increases somewhat. Suitable gas flow rate is 16 – 20 l/min. Suggested heat input is 0.5 – 2.0 kJ/mm, interpass temperature max. 150°C and wire stick-out 15 – 20 mm. Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1020 – 1080°C followed by water quenching.

**Approvals**

TÜV (11411), ABS (C1), CE