

For welding steels such as:

Outokumpu	EN	ASTM	SS*	BS*	NF*
LDX 2101®	1.4162	S32101	–	–	–

\* Obsolete national standards, replaced by EN 10088.

### Characteristics

AVESTA FCW-2D LDX 2101 is designed for welding the ferritic-austenitic (duplex) stainless steels Outokumpu LDX 2101. LDX 2101 is a “lean duplex” steel with excellent strength and medium corrosion resistance. The steel is mainly intended for applications such as civil engineering, storage tanks, containers etc.

AVESTA FCW-2D LDX 2101 provides a ferritic-austenitic weldment that combines many of the good properties of both ferritic and austenitic stainless steels. The duplex microstructure gives high tensile strength and hereby also good resistance to stress corrosion cracking.

AVESTA FCW-2D LDX 2101 is over-alloyed with respect to nickel to ensure the right ferrite balance in the weld metal.

### Welding directions

AVESTA FCW-2D LDX 2101 provides excellent weldability in horizontal as well as horizontal-vertical (PC) position.

Welding should be performed using direct current positive polarity (DC+). Compared to the MIG method, the range of welding current and voltage is considerably wider.

### Welding data

Diam. inch	Horizontal		Horizontal-vertical	
	A	V	A	V
0.045	150–280	24–32	140–200	23–28

For further recommendations, please contact Avesta Welding.

### Shielding gas recommendations

Welding is preferably done using an Ar-based shielding gas with addition of 15–25 % CO<sub>2</sub>, which will give the best result with respect to arc stability, melt pool control and with a minimum of spatter. However, 100 % CO<sub>2</sub> can also be used. If 100 % CO<sub>2</sub> is used, the welding voltage should be increased by 2–3 V to ensure the right arc length.

Gas flow rate is typically 20–25 l/min.

### Standard designations

EN 12073	–
AWS A5.22	–

### Chemical composition - Typical values, %

C	0.03	Cr	24.0
Si	0.7	Ni	9.0
Mn	0.8	Mo	0.2
N	0.14		
Ferrite	30 FN WRC-92		

### Mechanical properties – Typical values, IIW

	Typ. values		
Yield strength, R <sub>p0.2</sub>	550 N/mm <sup>2</sup>	80	ksi
Tensile strength, R <sub>m</sub>	750 N/mm <sup>2</sup>	109	ksi
Elongation, A <sub>5</sub>	30 %	30	%
Impact strength, KV	+20°C	63 J	46 ft·lb
	–40°C	45 J	33 ft·lb
Hardness	240 Brinell		

**Interpass temperature:** Max. 300°F (150°C)

**Heat input:** 12.7–50.8 kJ/in (0.5–2.0 kJ/mm)

**Heat treatment:** Generally none. In special cases quench annealing at 1868–1976°F (1020–1080°C).

**Structure:** Austenite with 30–70 % ferrite.

**Scaling temperature:** Approx. 1562°F (850°C) (air).

**Corrosion resistance:** Good resistance to general corrosion. Corrosion resistance is on a level with or better than AISI 304.

**Approvals:** –