Avesta FCW-2D 309L

GMAW flux cored wire, high alloyed, special application

Classification		
ø 1.2 mm / ø 1.6 mm		
EN ISO 17633-A	**EN ISO 17633-B**	**AWS A5.22**
T 23 12 L R M21 3	TS 309L-F M21 0	E309LT0-4
T 23 12 L R C1 3	TS 309L-F C1 0	E309LT0-1
ø 0.9 mm		
EN ISO 17633-A	**EN ISO 17633-B**	**AWS A5.22**
T 23 12 L P M21 1	TS 309L-F M21 1	E309LT1-4
T 23 12 L P C1 1	TS 309L-F C1 1	E309LT1-1

Characteristics and typical fields of application

Avesta FCW-2D 309L is a high-alloyed flux cored wire, primarily intended for surfacing low-alloy steels and for dissimilar welds between mild steel and stainless steels.

Avesta FCW-2D 309L provides excellent weldability in flat as well as horizontal-vertical position.

Corrosion resistance:

When used for overlay welding on mild steel a corrosions resistance equivalent to that of 1.4301/304 is obtained already in the first layer.

Base Materials

dissimilar joint welds: of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni- steels, manganese steels

surfacing: for the first layer of corrosion resistant weld surfacing on ferritic- perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N, as well as of high temperature steels like 22NiMoCr4-7, 20MnMoNi5-5 and G18NiMoCr3-7

Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Ni
wt-%	0.03	0.7	1.4	23.0	12.5

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation ($L_0=5d_0$)	Impact work ISO-V KV J		Hardness
	MPa	MPa	%	+20°C	-60°C	HB
u	**400**	**540**	**33**	**60**	**45**	**210**

u untreated, as-welded – shielding gas Argon + 18% CO_2

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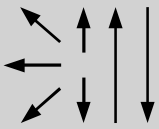
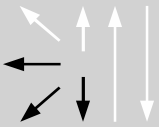
Operating data

		Polarity	Shielding gases:	Amps A	Voltage V	ø (mm)
 ø 0,9 m	 ø 1,2 mm ø 1,6 mm	DC (+)	Ar + 15 – 25% CO_2 100% CO_2 **Redrying:** if necessary 150°C / 24 h	100 – 160 125 – 280 200 – 350	21 – 30 20 – 34 25 – 35	0.9 1.2 1.6

Welding with standard GMAW power source possible, slightly trailing torch position (angle appr. 80°), when using 100% CO_2 as shielding gas it is necessary to increase the voltage by 2 V; the gas flow should be 15-18 l/min. Stick out 15-20mm;Preheat and interpass temperatures as required by the base metal.

Approvals

TÜV(10747.), DB (43.014.41), CWB, DNV, GL, LR, RINA