

GMAW flux cored wire, high alloyed, special application

Classification

EN ISO 12153-A	EN ISO 12153-B	AWS A5.34
T Ni 6625 (NiCr22Mo9Nb) P M 2	-	ENiCrMo3T1-4

Characteristics and typical fields of application

Avesta FCW P12-PW is a nickel base wire primarily intended for welding the nickel base alloys type 625 and 825 and 6 Mo steels such as Outokumpu 254 SMO. It can also be used for welding 9 Ni steels for use in cryogenic applications.

Avesta FCW P12-PW is designed for all-round welding and can be used in all positions without changing the parameter settings. Weldability is excellent in the vertical-up and overhead welding positions. To minimise the risk of hot cracking when welding fully austenitic steels and nickel base alloys, heat input and interpass temperature must be low and there must be as little dilution as possible from the parent metal. Avesta FCW P12-PW should be welded using direct current positive polarity (DC+) with a recommended wire stick-out of 15 - 20 mm.

Corrosion resistance:

Excellent resistance to general corrosion in various types of acids and to pitting, crevice corrosion and stress corrosion cracking in chloride containing environments. Meets the corrosion test requirements per ASTM G48 Methods A, B and E (50°C).

Base Materials

Outokumpu	EN	ASTM	BS	NF	SS
254 SMO [®]	1.4547	S31254	-	-	2378

Also for welding nickel base alloys to stainless or unalloyed steels and for surfacing.

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

	С	Si	Mn	Cr	Ni	Мо	Nb	Fe
wt-%	0.02	0.4	0.1	20.5	bal.	8.7	3.3	<1.0

Mechanical properties of all-weld metal

Heat- treat- ment	Yield strength R _e N/mm ²	Tensile strength R _m N/mm ²	Elongation (L ₀ =5d ₀)	Impact work ISO-V KV J			Hardness
	MPa	MPa	%	+20 °C	-40 °C	-196°C	HB
u	460	750	40	75	60	45	220

u untreated, as-welded – shielding gas Argon + 18 % CO₂

Operating data

	Polarity	shielding gases:	re-drying if	amps A	voltage V	ø (mm)
N + + 1	DC (+)	Ar + 15 – 25% CO ₂	necessary:	150 – 240	24 – 32	1.2
< <u>→</u>		100 % CO ₂	150°C / 24 hrs	130 – 160	23 – 28	
✓ + +				150 – 200	24 – 29	
				120 – 180	22 – 27	

Ar + 15 - 25% CO₂ offers the best weld ability, but 100% CO₂ can be also used (voltage should be increased by 2V). Gas flow rate 20 - 25 l/min.

Approvals

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All information provided is based upon careful investigation and intensive research.

However, we do not assume any liability for correctness and information is subject to change without notice.