Technical data sheet 011121MBA	Stainless steel filler metal – Solid wire # WA TSS/MSS 410NiMo	Welding Alloys

CLASSIFICATION

ASME IIC SFA 5.9 / AWS A 5.9:	(ER410NiMo)
EN ISO 14343-A:	W 13 4 / G 13 4
Equivalent material number:	1.4351

DESCRIPTION

- GTAW rod / GMAW stainless steel solid wire
- Designed for welding martensitic and martensitic-ferritic rolled forged or cast stainless steels with 12 - 14% Cr
- Outstanding ant-friction characteristics
- Resistant to water, steam and sea water atmosphere

APPLICATIONS

WA TSS/MSS 410NiMo are used for the fabrication and rebuilding of turbines in the hydropower industry. The deposit is martensitic. It combines good toughness with excellent resistance to cavitation and to stress corrosion cracking.

Examples of materials to be welded (non exhaustive list):

- EN Symbol: X4 CrNi 13 4, X3 CrNiMo 13 4, X3 CrNi 13-4, GX4 CrNiMo 13-4, GX5 CrNi 13 4, GX5 CrNiMo 13-4
- Material number: 1.4313, 1.4407, 1.4413, 1.4414
- UNS: S41500, J91540, J91550
- Wrought: F6NM, Cast CA6NM, ASTM A352, A487, A743, A757

A post-weld heat treatment at 580°C - 620°C is recommended to obtain a tempered martensite that combines strength and ductility with corrosion and cavitation resistance.

TYPICAL WIRE ANALYSIS (weight %)

C	Mn	Si	Cr	Ni	Mo
0.02	0.7	0.7	13	4.7	0.5

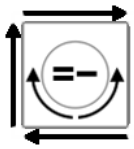
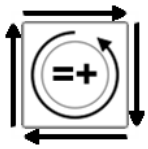
MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

PWHT	Rm [MPa]	Rp0.2% [MPa]	A_5 [%]	CVN [J]
8 hours at 580°C	750	640	15	+20°C: 90

TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES (GMAW)

PWHT	Rm [MPa]	Rp0.2% [MPa]	A_5 [%]	CVN [J]
8 hours at 580°C	840	750	20	+20°C: 110

SHIELDING GAS – OPERATING CONDITIONS – WELDING POSITIONS

GTAW		GMAW	
Shielding gas according to EN ISO 14175	Welding positions Current type	Shielding gas according to EN ISO 14175	Welding positions Current type
I1 (100 % argon)		M12 mixed gas (Ar + 0.5-2.5% CO_2) M13 mixed gas (Ar + 0.5-3% O_2)	

PACKAGING

Spools	Ø mm	0.8	1.0	1.2	1.6
Rods	Ø x1000 mm	1.6	2.0	2.4	3.2

Other diameters are available on request