

Technical data sheet

011121MBA

Cored welding wire

CHROMECORE M 13 4-G**CLASSIFICATION**

EN ISO 17633-A : T 13 4 M M12 1
 ASME IIC SFA 5.22 & 5.9: EC410NiMo (nearest)
 EN 14700: T Fe7
 Equivalent material number: 1.4351

DESCRIPTION

- Metal cored gas shielded wire for joining, rebuilding and cladding stainless martensitic and martensitic-ferritic rolled, forged and cast steels
- 13% Cr – 4% Ni soft martensitic, slag free deposit
- Very good impact toughness characteristics in its category
- H_{DM} guaranteed ≤ 4 ml/ 100g deposited metal over the whole parameter range, typical values ~ 1 ml/100g

APPLICATIONS

CHROMECORE M 13 4-G is 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.

Together with enhanced productivity, CHROMECORE M 13 4-G offers many other advantages compared to solid wires: improved weldability, almost no spatter, better arc stability, enhanced wetting properties, reduced crack sensitivity, better bead appearance and shape.

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

Examples of materials to be welded:

DIN	Material number	UNS
X4 CrNi 13 4 - X3 CrNi 13-4	1.4313	J91540 Turbines
GX5 CrNi 13 4	1.4313	J91540 Turbines
GX5 CrNiMo 13-4	1.4407	J91550
X6 Cr 13	1.4000	S40300
X6 CrAl 13	1.4002	S40500
X3 CrNiMo 13 4	1.4413	
GX4 CrNiMo 13 4	1.4414	

TYPICAL ALL-WELD METAL ANALYSIS [%]

C	Mn	Si	Cr	Ni	Mo
0.02	1.0	0.6	12.5	4.5	0.5

MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES (with 98 Ar - 2 CO₂ shielding)

	Rm [MPa]	Rp0.2% [MPa]	A ₅ [%]	CVN [J]
PWHT 8 hours at 580°C	760	500	15	0°C: 32

TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES (with 98 Ar - 2 CO₂ shielding)

	Rm [MPa]	Rp0.2% [MPa]	A ₅ [%]	CVN [J]
PWHT 8 hours at 580°C	820	710	18	+20°C: 50 0°C: 45

SHIELDING GAS

EN ISO 14175 : M12 (Ar + 0.5 % < CO₂ ≤ 2.5 %)

Other shielding gases are possible: M12 with helium for increased impact toughness or M21 (Ar + 15 - 25% CO₂) / M20 (Ar + 5 - ≤ 15% CO₂) for maximum penetration

OPERATING CONDITIONS

Current type	Gas flow rate [l/min]	Stick-out [mm]	Current [A]	Voltage [V]	Recovery
DC+ or pulsed	15 - 20	10 - 20	120 - 360	16 - 36	98 %

WELDING POSITIONS

EN ISO 6947: PA, PB.

ASME IX: 1G, 1F, 2F.

CHROMECORE M 13 4-G is primarily used in the flat and horizontal-vertical positions. However, welds in other positions are also possible by using the pulsed arc technique.

PACKAGING

Diameter	1.2 mm
Spool type	EN ISO 544 : BS300
Weight	15 kg

Other packaging: please consult us

Welding products and techniques evolve constantly. All descriptions, illustrations and properties given in this data sheet are subject to change without notice and can only be considered as suitable for general guidance. This document is intended to help the user make the correct choice of product. It is his responsibility to assess its suitability for his intended application.