

ROYALFIL GS - 413 NiMo (E410NiMoT0-1/4)

AWS A /SFA 5.22 E 410NiMoT0-1/4

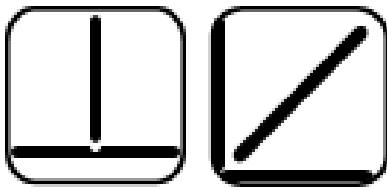
Applications

It gives martensitic weld metal. It is used for welding of corrosion resisting steels & castings with 12% Cr & 4.5 % Ni, E410, E410S, E405 grade materials, CA6NM castings and similar materials like ASTM A352, ASTM wrought F6NM. Suitable for surfacing of steel castings as well as steels of similar composition. Also used for overlaying mild & C-Mn steels. In cast or forged form for hydraulic turbines, valve bodies, pump bowls, compressor cones, impellers, high pressure pipes in power generation, offshore, oil, chemical & petrochemical industries,.

Characteristics on Usage

Royal Fil GS – 413NiMo is with 11.5% Cr, 4.5% Ni, and 0.50% Mo typical composition weld metal. This gas shielded fluxcored wire is modified with less Chromium and more Nickel to eliminate ferrite in the microstructure, as ferrite has harmful effect on the mechanical properties. PWHT has to be controlled properly as temp. excess of 620°C may result in rehardening due to untempered martensite in the microstructure after cooling to room temperature.

Welding Positions



1G

2F

Chemical Composition Of Weld Metal

Element	C%	Mn%	Si%	S%	P%	Cr %	Ni %
Typical Values	0.045	0.55	0.35	0.009	0.020	11.50	4.5
Spec. Req'd.	0.06 Max	1.00 Max	1.00 Max	0.030 Max	0.04 Max	11-12.5	4.00

Mechanical Properties Of Weld Metal

(100% CO₂ Shielding) AFTER PWHT AT 595°C – 620°C FOR ONE HOUR, HARDNESS ON IIND LAYER IS 28-35 HRC

Property	U.T.S. (N/mm ²)	ELONGATION (L = 4d) %
Typical Values	850	20
Spec. Req'd.	760 Min	15 Min

Welding Parameters (DC + VE)

Diameter (mm)	Flat & Horizontal (A)	Flat & Horizontal (V)
1.20	160-210	26-30
1.60	190-250	26-30

Packing

12.5 Kgs. vacuum packed plastic spool