13.RMP

These consumables are designed for welding wrought or cast martensitic 12%Cr (type 410) stainless steel. Fabrication welds of matching composition such as this must be tempered by appropriate PWHT, owing to high hardness (~450HV) and low ductility in the as-welded condition. Conventional 410 has variable toughness but following PWHT the 13.1.BMP electrode with 1.5%Ni has good impact properties down to –10°C or lower depending on the heat treatment schedule. Plain 12%Cr steels are the most simple and economic alloys with stainless properties. Variants with Ti(409), Al (405) or low carbon (410S) are more or less fully ferritic with typically lower strength than type 410. These types, and the newer "utility ferritics" are normally welded without PWHT using 309/309L consumables. The same applies to type 410 when PWHT is not practicable. Type 410 contains just sufficient carbon to enable air-hardening transformation to a predominantly martensitic microstructure. Structural properties below ambient are limited by its relatively high ductile-brittle transition temperature (particularly weldments), and up to about 550°C by its modest creep resistance. It has useful resistance to general corrosion in non-aggressive media, sulphide-induced SCC in sour crude oil service, and oxidation up to about 800°C.

CLASSIFICATIONS

AWS	A5.4	E410-26
BS EN	1600	E 13 R 52
DIN	8556	E13 MPR 26 130

CHEMICAL ANALYSIS

% Carbon	0.060	**% Chromium**	11.50
% Manganese	0.500	**% Nickel**	0.400
% Silicon	0.300	**% Molybdenum**	0.200
% Sulphur	0.010	**% Copper**	0.050
% Phosphorous	0.015		

TYPICAL MECHANICAL PROPERTIES ALL WELD METAL

After PWHT	850°C/2h
Tensile Strength	520 MPa
0.2% Proof Stress	270 MPa
Elongation on 4d	36%

PACKING DATA

(AmpsDC+ or AC (OCV 70V Min.)

Diameter (mm)	Current (A)	Item Number	Canned Pack Mass (Kg)
2.50	70 – 110	078-082	4.2
3.20	80 – 140	078-084	4.7

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