

PRODUCT DATA SHEET

Afrox 182



Afrox 182 is a basic coated, semi-synthetic, high recovery, nickel-based electrode for the welding of nickel alloys and many dissimilar metal joints. Characteristics include smooth bead appearance, low spatter loss, and easy slag removal. Aprox 182 is suitable for the welding of alloys 600, 601, 800 and similar high nickel steels as well as 5% and 9% nickel steels. Aprox 182 is also suitable for dissimilar joints between nickel-based alloys and carbon and stainless steels, and can also be used for the joining of difficult to weld steels.

Applications

Applications include heat-resisting nickel-based alloys to themselves for use in furnace equipment up to about 900°C. Other applications include: mixed welds between most nickel-based alloys, including Monel® 400 and stainless, low alloy or CMn steels without need to preheat. Transition welds between creep-resisting ferritic and austenitic steels, such as 2CrMo and 316H for long-term service at elevated temperature in

petrochemical and power generation plants. Low temperature applications such as 3% or 5% Ni steels used for cryogenic vessels and pipework in service at or below -100°C. Stress relief may be carried out if required.

Materials to be Welded

Nickel alloys such as Inconel® 600, Nimonic 75. Nickel-based alloys to themselves and to mild, low alloy and stainless steels. High temperature transition joints. Cryogenic 3% and 5% Ni steels.

Storage and Re-baking

Re-dry 250°C for 2 hr to restore to as-packed condition. Maximum 380°C, 3 cycles, 10 hr total.

Storage of re-dried electrodes at 50–200°C in holding oven or heated quiver: no limit, but maximum 6 weeks recommended.

Classifications

AWS	A5.11	ENiCrFe-3
EN	14172	ENi6182 (NiCr15Fe6Mn)

Typical Chemical Analysis

% Carbon	0,10 max	% Chrome	13,0 - 17,0
% Manganese	5,0 - 9,5	% Nickel	60,0 min
% Silicon	1,0 max	% Niobium	1,0 - 2,5
% Sulphur	0,015 max	% Iron	2,0 - 9,0
% Phosphorous	0,02 max	% Titanium	1,0 max

Typical Mechanical Properties (All weld metal in the as welded condition)

0,2% Proof Stress	350 MPa min
Tensile Strength	635 MPa min
% Elongation on 5d	32
Impact Energy at -196°C	65 J min
Hardness	190 HV

Packing Data (DC+)

Diameter (mm)	Electrode Length (mm)	Current (A)	Pack Mass (kg)	Item Number
2,5	300	75 - 100	5,0	W075942
3,2	350	100 - 140	5,0	W075943
4,0	350	140 - 180	5,0	W075944

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