

PRODUCT DATA SHEET

Afrox 625



Afrox 625 is a basic coated electrode for the welding of nickel alloys, super austenitic alloys, cryogenic 9% nickel steels, and for dissimilar metal joints. The weld deposit is resistant to general corrosion, pitting, crevice and stress corrosion cracking in severe chloride media. It is also used for welding heat resisting alloys, such as Inconel® 600 and 625 as well as Incoloy® 800 and 825. The electrodes are also used for the joining of these nickel alloys to low and high alloy steels and cast steels. These properties are conferred by high levels of chromium, molybdenum and niobium, which also raise strength to the highest amongst standard nickel-based alloys. Useful properties from -269°C to above 1 000°C are achieved.

Applications

In addition to matching alloy 625, suitable for welding heat resisting alloys including Inconel® 601 (except severe sulphidising conditions), Incoloy® 800/800H, or combinations of these with other alloys for furnace equipment,

petrochemical and power generation plants. Some other applications include: overmatching corrosion resistant welds in alloy 825, Hastelloy® G and G3, alloy 28, 904L, 6% Mo super austenitic stainless 254 SMO®, and also overlays on pumps, valves and shafts, often in offshore and marine environments where high pitting resistance (PRE = 50) and tolerance to weld metal dilution are essential. Welds in high strength ferrous alloys including cryogenic 9% nickel steels and for reclamation of dies where rapid work hardening and toughness are required.

Storage and Re-baking

Re-dry electrodes for 2 hours at 250°C.

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

Materials to be Welded

Matching Alloy 625

ASTM-ASME	DIN	BS
UNS N06625	2.4856	NA21
A494 CW-6MC (cast)		

Proprietary Alloys

Inconel® 625 (Inco)
Nicrofer® 6020hMo (VDM)
Nicrofer® 6022hMo (VDM)

Other Alloys

High Nickel Alloys	Super Austenitic Alloys
Inconel® 601 (Inco)	UNS S31254
Incoloy® 800H (Inco)	254 SMO® (Avesta)
Incoloy® 825	904L (Inco)
And equivalents	Similar alloys
Cryogenic	Dissimilar
9% Ni steels	Combinations of above

Classifications

AWS	A5.11	ENiCrMo-3
EN	14172	ENi6625 (NiCr22Mo9Nb)

Typical Chemical Analysis (All weld metal)

% Carbon	0,1 max	% Chrome	20,0 - 23,0
% Manganese	2,0 max	% Nickel	55,0 min
% Silicon	0,8 max	% Molybdenum	8,0 - 10,0
% Sulphur	0,015 max	% Niobium	3,0 - 4,0
% Phosphorous	0,02 max	% Iron	7,0 max

PRODUCT DATA SHEET

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

0,2% Proof Stress	520 MPa
Tensile Strength	780 MPa
% Elongation on 5d	35
Impact Energy at +20°C	80 J
Impact Energy at -196°C	50 J
Hardness	250 HV
Hardness (Work hardened)	450 HV

Packing Data and Operating Current (DC+)

Diameter (mm)	Electrode Length (mm)	Current (A)	Pack Mass (kg)	Item Number
2,5	350	50 - 70	5,0	W075952
3,2	350	75 - 95	5,0	W075953
4,0	350	90 - 120	5,0	W075954

The information contained or otherwise referenced herein is presented only as typical without guarantee or warranty, and Afrox expressly disclaims any liability incurred from any reliance therein. No data is to be construed as recommended for any welding condition or technique not controlled by Afrox.

For more information contact the Afrox Customer Service Centre Tel: 0860 02 02 02
E-mail: customer.service@afrox.linde.com Website: www.afrox.com