AFROX NIMROD AKS

Afrox Nimrod AKS is a MMA electrode similar to 182 with a basic flux system on a nearly matching core wire designed to give radiographically sound weld metal. It is optimised for DC+ welding in all positions including pipework in the ASME 5G/6G positions. Recovery is about 110% with respect to core wire, 65% with respect to whole electrode.
The weld metal deposited by these consumables has no directly equivalent parent material, although its composition is related to Inconel 600 (0.05C-75Ni- 16Cr-8Fe). Mo and Nb are added to give high resistance to hot cracking, tolerance to dilution by many combinations of nickel base and ferrous alloys, and stable properties over a wide range of service temperatures from –269°C to above 900°C. The presence of Mo improves elevated temperature properties above about 600°C, compared to the 182 alloys.

APPLICATIONS

These consumables are used for welding Inconel 600, Incoloy 800/800H and similar heat resisting or high nickel alloys to themselves for use in **furnace equipment** and **petrochemical plants** up to about 900°C. In addition they are suitable for **dissimilar** combinations of the above alloys and others such as Monel 400, Incoloy 825 to stainless, low alloy CMn steels without the need to preheat. Stress relief may be carried out if necessary, and transition welds for high temperature service have good structural stability.
They can also be used for low temperature applications such as 3%Ni or 5%Ni steels used for **cryogenic vessels** and **pipework** in service at or below –100°C.

MATERIALS TO BE WELDED

Inconel 600, Incoloy 800, Incoloy DS, Nilo, Brightray and other nickel base or high nickel alloys to themselves and to mild, low alloy, and stainless steels. Cryogenic 3-5%Ni steels.

CLASSIFICATIONS

AWS	A5.11	ENiCrFe-2
BS	EN (proposed)	ENi 6092
DIN	1736	EL-NiCr15MoNb (2.4625)

CHEMICAL ANALYSIS (ALL WELD METAL)

% Carbon	0.1 max	**% Molybdenum**	1.0-2.5
% Manganese	1.0-3.5	**% Niobium**	1.5-3.0
% Silicon	0.75 max	**% Iron**	12.0 max
% Sulphur	0.015max	**% Copper**	0.50 max
% Phosphorus	0.03 max	**% Cobalt**	0.12 max
% Chrome	13.0-17.0	**% Tantalum**	0.30 max
% Nickel	62.0 min		

TYPICAL MECHANICAL PROPERTIES (ALL WELD METAL IN THE AS WELDED CONDITION)

0.2% Proof Stress	420 MPa	**% Reduction of area**	50
Tensile Strength	700 MPa	**Impact energy -196°C**	110J
% Elongation on 4d	42	**Hardness cap/mid**	200/215HV
% Elongation on 5d	39		

For more information contact the Afrox Customer Service Centre,
tel: 0860 020202 or e-mail: customer.service@afrox.boc.com
Website: www.afrox.com

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PACKING DATA AND OPERATING CURRENT

(DC+ AC 70 OCV min)

Diameter mm	Electrode Length mm	Current Amps	Item Number	Pack Mass Kg
2,5	280	60-80	077/698	4,0
3,2	300	70-110	077/699	4,0

STORAGE AND RE-BAKING

Hermetically sealed ring-pull metal tin with unlimited shelf life. Direct use from tin is satisfactory for longer than a working shift of 8h. Excessive exposure of electrodes to humid conditions will cause some moisture pick-up and increase the risk of porosity.
For electrodes that have been exposed:
Redry 250 – 300°C/1-2h to restore to as-packed condition. Maximum 350° C, 3 cycles, 10h total.
Storage of redried electrodes at 50 – 200°C in holding oven or heated quiver: no limit, but maximum 6 weeks recommended. Recommended ambient storage conditions for opened tins (using plastic lid): < 60% RH, > 18°C.

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