

AFROX NIMROD 657



Afrox Nimrod 657 is a MMA electrode made on a special 50Chrome-50 Nickel core wire, with a basic lime-fluorspar flux covering. Recovery is approx 160% with respect to core wire, 65% with respect to whole electrode.

Nimrod 657 (formerly 50.50.Nb) was developed in conjunction with Inco to match their proprietary cast alloy IN-657 produced by licenced foundries world-wide. It is also suitable to weld the Ti-bearing wrought version IN-671.

Alloy 657 with its high chromium content has exceptional resistance to hot corrosion (800-950°C) by fuel ash containing vanadium pentoxide and alkali metal sulphates arising from the combustion of low grade heavy fuel oils.

APPLICATIONS

IN-657 castings are used in a wide range of components in oil-fired furnaces and boilers such as **tube sheets, tube hangers, supports and spacers** in **ships, power stations, refineries, and petrochemical plants.**

MATERIALS TO BE WELDED

Inco IN-657, IN-671
 ASTM A560 Grade 50Cr-50Ni-Cb
 DIN 2.4678, 2.4680, 2.4813
 Paralloy N50W (Doncasters Paralloy)
 Duraloy 50/50Cb

CLASSIFICATIONS

AWS A5.11 ENiCr-4

**CHEMICAL ANALYSIS
 (ALL WELD METAL)**

% Carbon	0.1 max	% Nickel	Bal.
% Manganese	1.5 max	% Molybdenum	8.0-10.0
% Silicon	1.0 max	% Niobium	1.5-2.2
% Sulphur	0.02 max	% Iron	1.0 max
% Phosphorus	0.02 max	% Nitrogen	0.16 max
% Chrome	48.0-52.0		

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

0.2% Proof Stress	570-725 MPa
Tensile Strength	830-985 MPa
% Elongation on 4d	2-4
Hardness	340HV

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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
3,2	305	85-120	077/691	4,0
4,0	305	110-160	077/692	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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