

**AFROX NIMAX B2L**



Afrox Nimax B2L is MMA electrode made on pure nickel core wire with a special basic flux coating to give low levels of impurities. Sizes above 3.2mm are not suitable for positional welding. Recovery is about 130% with respect to core wire, 65% with respect to whole electrode. These consumables deposit nickel-molybdenum weld metal with very low carbon and silicon levels appropriate for alloy B-2, although it is equally suitable for the original alloy B, now obsolete in wrought form. In addition, specially controlled levels of iron and chromium ensure good as welded ductility in multipass deposits. These modifications bring the composition close to the more recent alloys B-3 and B-4, which have better microstructural stability and weldability than alloy B-2. There are no electrode specifications

for these alloys at present, and these consumables are therefore offered as an acceptable candidate within current specification limits. These alloys are designed to resist hydrochloric acid at all concentrations and temperatures up to boiling point under non-oxidising conditions. They are also resistant to hydrogen chloride gas, sulphuric and acetic acids under certain conditions. The newer alloys B-3 and B-4 with additional Fe and Cr have improved SCC resistance in chloride media. Contamination of acid media with oxidising ferric or cupric salts must be avoided. Alloys with much higher chromium (C-4 or C-276 etc.) are superior under oxidising conditions.

**APPLICATIONS**

Applications include **pumps, valves** and **process equipment** operating in **aggressive environments** in **chemical plants**.

**MATERIALS TO BE WELDED**

**Wrought:**

**ASTM** B333, B335, B619, B626:  
UNS N10001 (alloy B)  
UNS N10665 (alloy B2)

**DIN** 2.4617  
**Proprietary** Hastelloy alloy B-2 (Haynes)  
Nimofor 6928 (VDM)

**Similar alloys:**

UNS N10675, Hastelloy Alloy B-3 (Haynes).  
UNS N10629, DIN 2.4600, Nimofor 6629 (VDM), alloy B-4.

**Cast:**

**ASTM** A494: N-7M  
A743: N-12M  
A744: N-12M  
**BS** 3146: ANC 15  
**DIN** 2.4685, 2.4882  
**Proprietary** NB (Paralloy)  
Langalloy B (Meighs)  
AR5 (LaBour/Darwins)

**CLASSIFICATIONS**

AWS	A5.11	ENiMo-7
BS	EN (proposed)	E Ni 1066
DIN	1736	EL-NiMo29

**CHEMICAL ANALYSIS  
(ALL WELD METAL)**

% Carbon	0.02 max	% Molybdenum	26.0-30.0
% Manganese	1.75 max	% Iron	1.00-2.00
% Silicon	0.20 max	% Tungsten	1.00 max
% Sulphur	0.015 max	% Copper	0.50 max
% Phosphorus	0.040 max	% Cobalt	1.00 max
% Chrome	0.30-1.00	% Vanadium	0.40 max
% Nickel	64.50 min		

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

<b>0.2% Proof Stress</b>	525 MPa	<b>% Elongation on 5d</b>	30
<b>Tensile Strength</b>	775 MPa	<b>% Reduction of area</b>	25
<b>% Elongation on 4d</b>	31	<b>Hardness</b>	260HV

**PACKING DATA AND OPERATING CURRENT**

(DC+)

<b>Diameter mm</b>	<b>Electrode Length mm</b>	<b>Current Amps</b>	<b>Item Number</b>	<b>Pack Mass Kg</b>
3,2	350	90-155	077/662	5,0
4,0	350	130-120	077/663	4,7

**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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