

**AFROX NIMROD C276KS**



Afrox Nimrod C276KS is a MMA electrode with special basic flux coating on matching nickel-chromium-molybdenum core wire to provide clean and homogenous weld metal. Nimrod C276KS has exceptional operability, optimised for DC+ welding in all positions including fixed pipework qualified in the ASME 6G (inclined overhead) position. Recovery is about 110% with respect to core wire, 65% with respect to whole electrode. The weld deposit composition matches parent alloy C276 with Ni-15% Cr-16% Mo-4% W-5% Fe. Carbon and silicon controlled as close as possible to the very low levels of the wrought alloy to minimize carbide and intermetallic phase precipitates which can reduce as-welded corrosion resistance. Cast versions of the alloy typically have higher carbon and silicon (like the original wrought Hastelloy alloy C, now obsolete), but repair welds are usually solution treated for optimum corrosion

resistance. Alloy C276 has high resistance to corrosion in a wide range of acids and salts under oxidising and especially reducing conditions. These include hydrochloric and hydrofluoric acids, hypochlorites, chlorides and wet chlorine gas, sulphuric, phosphoric and many organic acids. Exceptional resistance to crevice corrosion and pitting in seawater and chloride-induced stresscorrosion cracking (superior to alloy 625). High temperature stability is limited by intermetallic phase formation. In addition to fabrication welds in alloy C276, these consumables have good tolerance to dilution by most ferrous and high nickel alloys, and are suitable for surfacing and dissimilar welds which exploit the corrosion resistance, strength and toughness. Excellent properties to below -196°C allow its use for welding 5-9% Ni cryogenic installations.

**APPLICATIONS**

Applications include **pumps, valves, pipework** and **vessels** for use in aggressive environments in **chemical process plants**; also in equipment for **flue gas desulphurisation** and critical equipment in **offshore oil and gas production**.

**MATERIALS TO BE WELDED**

**Wrought**

ASTM UNS N10276

DIN 2.4819 (NiMo16Cr15W)

**Proprietary alloys:**

Hastelloy Alloy C-276 (Haynes)

Inco Alloy C-276 (Special Metals)

Nicrofer 5716hMoW (VDM)

**Cast**

A494 CW-12MW

A743/A744 CW-12M

2.4883 (G-NiMo16Cr)

**CLASSIFICATIONS**

AWS	A5.11	ENiCrMo-4
BS	EN (proposed)	ENi 6276
DIN	1736	EL-NiMo15Cr15W (2.4887)

**CHEMICAL ANALYSIS  
(ALL WELD METAL)**

% Carbon	0.02 max	% Molybdenum	15.0-17.0
% Manganese	1.0 max	% Tungsten	3.0-4.5
% Silicon	0.2 max	% Iron	4.0-7.0
% Sulphur	0.03max	% Copper	0.50 max
% Phosphorus	0.04 max	% Cobalt	2.5 max
% Chrome	14.5-16.5	% Vanadium	0.35 max
% Nickel	Bal.		

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

For more information contact the Afox Customer Service Centre,  
tel: 0860 020202 or e-mail: [customer.service@afrox.boc.com](mailto:customer.service@afrox.boc.com)  
Website: [www.afrox.com](http://www.afrox.com)



**AFROX NIMROD C276KS**

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

<b>0.2% Proof Stress</b>	520 MPa	<b>Impact energy at -50°C</b>	65J
<b>Tensile Strength</b>	780 MPa	<b>Impact energy at -196°C</b>	55J
<b>% Elongation on 4d</b>	30	<b>Hardness*</b>	240HV
<b>% Elongation on 5d</b>	28		

\* Work hardens to about 450HV

**PACKING DATA AND OPERATING CURRENT**

(DC+ AC 70 OCV min)

<b>Diameter mm</b>	<b>Electrode Length mm</b>	<b>Current Amps</b>	<b>Item Number</b>	<b>Pack Mass Kg</b>
2,5	250	60-80	077/650	3,8

**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.

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 thereon. No data is to be construed as recommended for any welding condition or technique not controlled by Afrox.