

# PRODUCT DATA SHEET

## Afrox Filmax NiCr-3 Afrox TIG NiCr-3

Afrox NiCr-3 is a solid wire for welding of nickel based alloys and dissimilar joints between nickel alloys, ferritic and austenitic stainless steels. These weld metals have no directly equivalent parent material, although the composition is related to Inconel® 600. Mn and Nb are added to give high resistance to hot cracking, tolerance to dilution by many combinations of nickel-based and ferrous alloys, with stable properties over a wide range of service temperatures from -196°C to above 900°C.

### Applications

Applications include heat-resisting nickel-based alloys to themselves for use in furnace equipment up to about 900°C. Other applications include: mixed welds between most nickel-

based alloys, including Monel® 400 and stainless, low alloy or CMn steels without need to preheat. Transition welds between creep-resisting ferritic and austenitic steels, such as 2CrMo and 316H for long-term service at elevated temperature in petrochemical and power generation plants. Low temperature applications such as 3% or 5% Ni steels used for cryogenic vessels and pipework in service at or below -100°C. Stress relief may be carried out if required.

### Materials to be Welded

Nickel alloys such as Inconel® 600, Nimonic 75. Nickel-based alloys to themselves and to mild, low alloy and stainless steels. High temperature transition joints. Cryogenic 3% and 5% Ni steels.

### Classifications

AWS	A5.14	ERNiCr-3
EN	18274	ENi6082 (NiCr20Mn3Nb)

### Typical Chemical Analysis (All weld metal)

% Carbon	0,05 max	% Nickel	67,0 min
% Manganese	2,5 - 3,5	% Titanium	0,7 max
% Silicon	0,5 max	% Niobium	2,0 - 3,0
% Sulphur	0,015 max	% Iron	3,0 max
% Phosphorous	0,02 max	% Copper	0,50 max
% Chrome	18,0 - 22,0		

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

0,2% Proof Stress	360 MPa
Tensile Strength	640 MPa
% Elongation on 4d	40
Impact Energy at -196°C	100 J min

### Packing Data

MIG			TIG			
Diameter (mm)	Pack Mass (kg)	Item Number	Diameter (mm)	Pack Mass (kg)	Consumable Length (mm)	Item Number
1,0	15,0	W077631	1,6	5,0	1 000	W077626
1,2	15,0	W077632	2,0	5,0	1 000	W077627
-	-	-	2,4	5,0	1 000	W077628

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