

## HYDROGEN CONTROLLED ELECTRODES

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## FERROCRAFT AND ALLOYCRAFT

## Advice on Storage and Reconditioning of CIGWELD Hydrogen Controlled Electrodes.

### Storage Environments:

Undamaged packs/cartons of Ferrocrafft and Alloycraft electrodes stored at 50% R.H. or less and kept at 10-15°C (50-60°F) above ambient temperature with a maximum of 40°C (105°F) stored off the ground and away from walls in cupboards, containers or warehouses are expected to maintain their designated hydrogen levels indefinitely.

### Moisture Re-absorption:

Cardboard packs/cartons of Ferrocrafft and Alloycraft may lose their designated hydrogen status due to moisture re-absorption from poor storage environments. Where electrodes have been exposed to moisture or where hydrogen control is important, the following procedures are recommended for reconditioning.

### Hermetically Sealed:

Hermetically sealed, hydrogen controlled electrodes are air tight sealed to maintain product in an original "FACTORY FRESH" condition for an indefinite period provided the seal is unbroken.

### Reconditioning and Hydrogen/Moisture Requirements:

AS/NZS 1553.1 low "H10" hydrogen status and AWS A5.1 "H8" hydrogen status.	AS/NZS 1553.1 very low "H5" hydrogen status and AWS A5.1 "H4" very low hydrogen status.
FERROCRAFT 16TXP	FERROCRAFT 61 H4
FERROCRAFT 7016	ALLOYCRAFT 80-B2
FERROCRAFT 55U	ALLOYCRAFT 90
FERROCRAFT 61	ALLOYCRAFT 110
FERROCRAFT 18-Ni	ALLOYCRAFT 80-C1
	ALLOYCRAFT 90-B3
Rebake for maximum of 2 hrs @ 300°C (570°F) in a vented oven and thereafter use from a hot box set at 100 - 120°C (210 - 250°F).	Rebake for maximum of 2 hrs @ 350°C (660°F) in a vented oven and thereafter use from a hot box set at 100 - 120°C (210 - 250°F).

- ▲ "XP series" E4816 / E7016 Type Electrode.
- ▲ Great Operator Appeal / Hydrogen Controlled.
- ▲ LONGER 350mm 2.5mm Size For Fewer Electrode Change-overs and Less Wastage.

## Classifications:

AS/NZS 1553.1 E4816-2 H10.

AWS/ASME-SFA A5.1: E7016 H8.

## Description and Applications:

Ferrocraft 16TXP is an "XP series", E4816 / E7016 type hydrogen controlled electrode from CIGWELD offering exceptional ACDC welding performance in all welding positions, including vertical-up and overhead. It maintains the high level of quality, performance and operator appeal already established with Ferrocraft 12XP.

Ferrocraft 16TXP produces excellent AC performance, particularly on portable 240V AC welding machines such as the CIGWELD Compact Turbo and Easywelder Turbo.

Ferrocraft 16TXP offers excellent low current performance which is important for achieving the best bead shape whilst producing no undercut in the difficult vertical-up and overhead positions.

Ferrocraft 16TXP is an easy-to-use, E4816 / E7016 type electrode for the all positional fillet and butt welding of heavier mild steel sections or joints under high restraint.

It is also suitable for a wide range of welding applications on selected Carbon-Manganese, Low Alloy and Cast Steels. The easy operation, reliable Grade 3 weld metal properties and low hydrogen status of Ferrocraft 16TXP make the electrode ideal for maintenance welding jobs, including the repair of earth moving equipment and the 'buttering' of steel sections prior to the application of hard surfacing.

## APPROVALS:

Lloyds Register of Shipping	Grade 3, 3YH15.
Det Norske Veritas	Grade 3YH10.
American Bureau of Shipping	Grade 3H10, 3Y.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

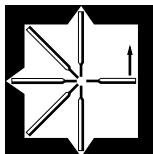
Yield Stress.	460 MPa.
Tensile Strength	550 MPa.
Elongation	27%.
CVN Impact Values	90 J av @ -20°C.

## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07%	Mn: 1.50%	Si: 0.65%
S: 0.010%	P: 0.015%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

7.0–7.5 mls of hydrogen / 100gms of deposited weld metal.



All positional - except vertical down

## Packaging and Operating Data:

AC (minimum 45 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Easyweld Handipack	Part No
2.5	350	53	50–90	5kg	15kg – 3 x 5kg		611562
2.5	350	53	50–90	2.5kg	15kg – 6 x 2.5kg		612562
3.2	380	28	85–140	5kg	15kg – 3 x 5kg		611563
3.2	380	28	85–140	2.5kg	15kg – 6 x 2.5kg		612563
4.0	380	19	135–190	5kg	15kg – 3 x 5kg		611564

## Easyweld Blister Pack:

10 x 2.5mm/5 x 3.2mm rod Ferrocraft 16TXP Blister Pack

322214

# - Ferrocraft 16TXP is formulated to operate with AC (45 O.C.V min), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

## FERROCRAFT 16TXP – Hermetically Sealed

50  
OCVDC  
AC

- ▲ Hermetically Sealed Ring Pull Cans.
- ▲ "XP series" E4816 / E7016 Type Electrode.
- ▲ Excellent Operator Appeal / Hydrogen Controlled.
- ▲ LONGER 350mm 2.5mm Size For Fewer Electrode Change-overs and Less Wastage.
- ▲ Easy operation, reliable Grade 3 weld metal properties and low hydrogen status of Ferrocrafter 16TXP make the electrode ideal for maintenance welding jobs, including the repair of earth moving equipment and the "buttering" of steel sections prior to the application of hard surfacing.

## Classifications:

AS/NZS 1553.1	E4816-2 H10.
AWS/ASME-SFA A5.1:	E7016 H8.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

Yield Stress.	460 MPa.
Tensile Strength	550 MPa.
Elongation	27%.
CVN Impact Values	90 J av @ -20°C.

## TYPICAL ALL WELD METAL ANALYSIS:

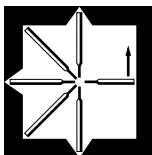
C: 0.07%	Mn: 1.50%	Si: 0.65%
S: 0.010%	P: 0.015%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

7.0–7.5 mls of hydrogen / 100gms of deposited weld metal

## APPROVALS:

Lloyds Register of Shipping	Grade 3, 3Y H15.
American Bureau of Shipping	Grade 3H10, 3Y
Det Norske Veritas	Grade 3Y H10.

All positional - except  
vertical down

## Packaging and Operating Data:

AC (minimum 45 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx No. Rods/kg	Current Range (amps)	Can	Carton	Easyweld Handpack	Part No
2.5	350	53	50–90	3kg	9kg – 3 x 3kg		613562
3.2	380	28	85–140	3kg	9kg – 3 x 3kg		613563
4.0	380	19	135–190	3kg	9kg – 3 x 3kg		613564

# - Ferrocrafter 16TXP – Hermetically Sealed is formulated to operate with AC (45 O.C.V min), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

# MUREX™

- ▲ E4816 / E7016 Type Electrode.
- ▲ Good Operator Appeal.
- ▲ Smooth stable, hydrogen controlled weld deposit.
- ▲ Grade 3 weld metal mechanical properties.
- ▲ Designed to operate from low O.C.V. AC equipment.
- ▲ Ideal for maintenance welding jobs including earthmoving equipment.

## Classifications:

AS/NZS 1553.1      E4816-2 H10.

AWS/ASME-SFA A5.1:      E7016 H8.

## Packaging and Operating Data:

AC (minimum 45 O.C.V.), DC+ or DC- polarity.

Electrode		Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Part No
Size mm	Length mm					
3.2	380	28	85-140	2.5kg	15kg – 6 x 2.5kg	SP16132
4.0	380	19	135-190	2.5kg	15kg – 6 x 2.5kg	SP16140

# - Murex™ Speedex 16 is formulated to operate with AC (45 O.C.V min), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

Yield Stress.	460 MPa.
Tensile Strength	550 MPa.
Elongation	27%.
CVN Impact Values	90 J av @ -20°C.

## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07%	Mn: 1.50%	Si: 0.65%
S: 0.010%	P: 0.015%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

7.0-7.5 mls of hydrogen / 100gms of deposited weld metal

\* Reconditioned for 2 hours maximum @ 300°C

## APPROVALS:

Lloyds Register of Shipping	Grade 3, 3Y H15.
American Bureau of Shipping	Grade 3H10, 3Y
Det Norske Veritas	
Grade 3Y H10.	

## FERROCRAFT 7016

50  
OCVDC  
AC

- ▲ Fully Basic Hydrogen Controlled E4816 / E7016 Type Electrode.
- ▲ Excellent Operator Appeal in All Positions.
- ▲ Ideal for Fill and Capping Passes.
- ▲ Excellent Impact Toughness to  $-30^{\circ}\text{C}$ .

## Classifications:

AS/NZS 1553.1:	E4816-3 H10.
AWS/ASME-SFA A5.1:	E7016 H8.
BS EN 499:	E42 4 B 12 H10

## Description and Applications:

Ferrocrafft 7016 is a basic, hydrogen controlled electrode that deposits weld metal in the 550MPa class. It gives excellent operator appeal in all welding positions, except vertical-down and exhibits a smooth, penetrating arc with excellent bead appearance and shape. The full covering slag is easy to control and remove. Ferrocrafft 7016 is a versatile hydrogen controlled

electrode, giving excellent all round arc performance and reliable impact toughness to  $-30^{\circ}\text{C}$ .

Ferrocrafft 7016 is designed for all positional (except vertical-down) fillet and butt welding jobs where "hydrogen control" is required and the emphasis is on operator appeal. It is also recommended for more critical applications where low temperature impact toughness to  $-30^{\circ}\text{C}$  is required.

Typical applications include pressure vessel fabrication, bridge and ship building and equipment repair and maintenance work.

## APPROVALS:

Lloyd's Register of Shipping	Grade 3YH10.
American Bureau of Shipping	Grade 3H10, 3Y.
Det Norske Veritas	Grade 3Y H10.
American Bureau of Shipping	AWS A5.1 E7016.

## TYPICAL MECHANICAL PROPERTIES:

Yield Stress	480 MPa
Tensile Strength	570 MPa
Elongation	25%
CVN Impact Values	125J av @ $-20^{\circ}\text{C}$ 100J av @ $-30^{\circ}\text{C}$

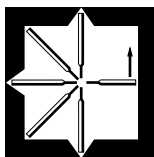
## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.08%	Mn: 1.10%	Si: 0.65%
S: 0.009%	P: 0.019%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

5.0 - 6.0 mls of hydrogen / 100gms of deposited weld metal \*

\* Reconditioned for 2 hours maximum @  $300^{\circ}\text{C}$ .



All positional - except vertical down welding

## Packaging and Operating Data:

AC (minimum 50 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Part No
3.2	380	29	90-130	5kg	15kg - 3 x 5kg	611743
4.0	380	19	120-180	5kg	15kg - 3 x 5kg	611744

# - Ferrocrafft 7016 is formulated to operate with AC (55 O.C.V), DC+ or DC- polarity.. The preferred polarity for fillet welding and fill and capping passes is DC+.

- ▲ Hydrogen Controlled E4816 / E7016 Type Electrode.
- ▲ Ideal for Root Pass Welding Applications.
- ▲ Thin Coated for Easier Joint Access.
- ▲ Purple End Tip Colour for instant I.D.

### Classifications:

AS/NZS 1553.1: E4816-2 H10.  
 AWS/ASME-SFA A5.1: E7016 H8.

### Description and Applications:

Ferrocraft 55U is a basic, hydrogen controlled electrode from CIGWELD offering very smooth running, excellent arc characteristics and good slag control.

Designed specifically for the all positional (except vertical down) root pass welding of steel pipes and plates, Ferrocraft 55U has a thin flux coating for easier joint access. When using the correct welding technique, polarity and current setting sound penetration beads of excellent appearance and even contour can be achieved. Depending on the joint properties required, Ferrocraft 55U is suitable for fill and capping passes.

### APPROVALS:

Lloyd's Register of Shipping Grade 3, 3YH15.  
 Det Norske Veritas Grade 3YH10.

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

Yield Stress 460 MPa.  
 Tensile Strength 570 MPa.  
 Elongation 29%.  
 CVN Impact Values 70 J av @ -20°C.

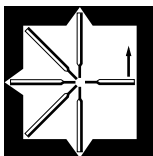
### TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07% Mn: 0.80% Si: 0.77%  
 S: 0.007% P: 0.013%

### TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

7.0 - 7.5 mls of hydrogen / 100gms of deposited weld metal \*.

\* Reconditioned for 2 hours maximum @ 300°C.



All positional - except vertical down

### Packaging and Operating Data:

AC (minimum 70 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Part No
2.5	350	53	40-90	5kg	15kg - 3 x 5kg	611492
3.2	380	31	60-140	5kg	15kg - 3 x 5kg	611493
4.0	380	19	90-180	5kg	15kg - 3 x 5kg	611494

# - Ferrocraft 55U is formulated to operate on low welding current to accommodate poor joint fit up and large root gaps. The electrode is suitable for AC (minimum 70 O.C.V), DC+ or DC- polarity. The preferred polarity for ease of use in root pass welding is DC-. Where it is necessary to maximise weld metal toughness fill and capping passes should be deposited with DC+ polarity.

## FERROCRAFT 61

55  
OCVDC  
AC

- ▲ Basic Coated, Hydrogen Controlled E4818 / E7018 Type Electrode.
- ▲ Superb AC/DC Operator Appeal.
- ▲ Excellent Out-of-Position Welding.
- ▲ Reliable Impact Properties to -30°C.
- ▲ BATCH NUMBER Identification.

## Classifications:

AS /NZS 1553.1: E4818-3 H10.  
AWS/ASME-SFA A5.1: E7018.

## Description and Applications:

Ferrocraft 61 is the latest smooth running, user friendly hydrogen controlled electrode from CIGWELD. Ferrocraft 61 gives improved side wall wash and reduced undercut at weld toes and produces very low spatter levels for an electrode of its type. Fillet weld shape is excellent and exhibits a true mitre to slightly convex profile.

Improved arc characteristics and stability on low Open Circuit Voltage welding machines ( $\geq 55$  O.C.V.) ensure Ferrocraft 61 has the high operator appeal Welders demand from today's manual arc electrodes.

Ferrocraft 61 is specifically designed for all positional (especially vertical-up) fillet and butt welding applications on heavier steel sections under high restraint such as machinery parts, pressure vessels, mining equipment, pipework, ship construction and all maintenance and repair work; on site, in the workshop or on the land.

## APPROVALS:

Lloyd's Register of Shipping	Grade 3, 3YH15.
American Bureau of Shipping	Grade 3H15, 3Y.
Det Norske Veritas	Grade 3YH10.
American Bureau of Shipping	AWS A5.1 E7018.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

Yield Stress.	450 MPa.
Tensile Strength	545 MPa.
Elongation	29%.
CVN Impact Values	160 J av @ -20°C. 130 J av @ -30°C.

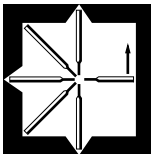
## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.06%	Mn: 1.45%	Si: 0.45%
S: 0.010%	P: 0.012%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

8.5 - 9.0 mls of hydrogen / 100gms of deposited weld metal \*

\* Reconditioned for 2 hours maximum @ 300°C.



All positional - except vertical down

## Packaging and Operating Data:

AC (minimum 55 O.C.V.), DC+ or DC- polarity.

Size mm	Electrode		Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Part No
	Length mm						
2.5	350		42	65-100	5kg	15kg - 3 x 5kg	611342
3.2	380		24	95-150	5kg	15kg - 3 x 5kg	611343
3.2	380		24	95-150	2.5kg	15kg - 6 x 2.5kg	612343
4.0	380		16	145-220	5kg	15kg - 3 x 5kg	611344
4.0	380		16	145-220	2.5kg	15kg - 6 x 2.5kg	612344
5.0	450		9	195-270	5kg	15kg - 3 x 5kg	611345

# - Ferrocraft 61 is formulated to operate with AC (55 O.C.V min), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

- ▲ Highly Basic, E4818 / E7018 Type Hydrogen controlled electrode.
- ▲ Advanced moisture resistant flux coating.
- ▲ Very low "H5 / H4" diffusible hydrogen class.
- ▲ C-Mn weld deposit for reliable impact properties to -40°C.
- ▲ Recommended for critical DC welding applications.
- ▲ Batch Number Identification.

### Classifications:

AS /NZS 1553.1:	E4818-5 H5R.
AWS/ASME-SFA	A5.1: E7018-1 H4R.

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

Yield Stress.	450 MPa.
Tensile Strength	545 MPa.
Elongation	28%.
CVN Impact Values	150 J av @ -20°C.
	100 J av @ -40°C.
	80 J av @ -50°C.

### TYPICAL ALL WELD METAL ANALYSIS:

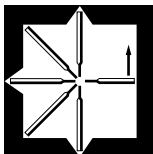
C: 0.07%	Mn: 1.50%	Si: 0.35%
S: 0.07%	P: 0.012%	

### TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 ml of hydrogen / 100gms of deposited weld metal .

### APPROVALS:

Lloyd's Register of Shipping	Grade 3, 3YH5.
American Bureau of Shipping	Grade 3H5, 3Y.
Det Norske Veritas	Grade 3YH5.



All positional - except vertical down

### Packaging and Operating Data:

AC (minimum 55 O.C.V.), DC+ or DC- polarity.

Electrode		Approx No. Rods/kg	Current Range (amps)	Can	Carton	Part No
Size mm	Length mm					
2.5	350	42	65-100	3kg	9kg – 3 x 3kg	614342
3.2	380	24	95-150	3kg	9kg – 3x 3kg	614343
4.0	380	16	145-220	3kg	9kg – 3 x 3kg	614344

## FERROCRAFT 18Ni – Hermetically Sealed

70  
OCVDC  
AC

- ▲ Hermetically sealed cans.
- ▲ Highly Basic, E4818-G / E7018-G Type Hydrogen Controlled Electrode.
- ▲ Very Low "H5 / H4" Diffusible Hydrogen Class.
- ▲ C - Mn - Ni Weld Deposit for Reliable Impact Properties to -50°C.
- ▲ BATCH NUMBER Identification.
- ▲ Recommended for the critical welding of C-Mn, microalloyed and low alloy structural steels in the 350-450 MPa yield strength class.
- ▲ Applications include the all positional (except vertical down) fillet and butt welding of pressure vessels, offshore platforms, pipes, earth moving equipment.

## Classifications:

AS/NZS 1553.2:	E4818-G.
AWS/ASME-SFA A5.5:	E7018-G.

## APPROVALS:

Lloyd's Register of Shipping	Grade 3, 3YH5.
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## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

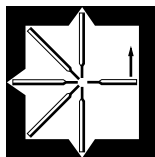
Yield Stress	450 MPa.
Tensile Strength	560 MPa.
Elongation	27%.
CVN Impact Values	130 J av @ -20°C. 80 J av @ -40°C. 60 J av @ -50°C.

## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07%	Mn: 1.20%	Si: 0.25%
Ni: 0.9%	S: 0.007%	P: 0.012%

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .



All positional - except  
vertical-down

## Description and Applications:

Ferrocrafft 18-Ni is a highly basic, hydrogen controlled electrode offering excellent weldability and weld deposit mechanical properties. Ferrocrafft 18-Ni is your first choice for critical DC welding applications where reliable weld deposit impact toughness to -50°C is required under higher heat input conditions. Ferrocrafft 18-Ni electrodes are individually BATCH NUMBERED for total "on the job" traceability. Ferrocrafft 18-Ni meets the AS/NZS 1553.1 (1995) very low "H5" hydrogen class after the recommended reconditioning treatment (see Storage and Reconditioning recommendations for details).

Ferrocrafft 18-Ni is recommended for the critical welding of C-Mn, microalloyed and low alloy structural steels in the 350 - 450 MPa yield strength class. Typical applications include the all positional (except vertical down) fillet and butt welding of pressure vessels, offshore platforms, pipes, earth moving equipment, hydro-electric penstocks and heavy structural members on bridges, buildings etc.

## Packaging and Operating Data:

AC (minimum 70 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Length mm	Approx No. Rods/kg	Current Range (amps)	Packet	Carton	Part No
3.2	380	18	110-145	3kg	9kg - 3 x 3kg	611813
4.0	380	12	140-200	3kg	9kg - 3 x 3kg	611814

# - Ferrocrafft 18-Ni is formulated to operate with AC (min 70 O.C.V.), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

- ▲ Hermetically sealed cans.
- ▲ Improved High Strength, Low Alloy Steel Electrode.
- ▲ Advanced Flux Coating.
- ▲ Very Low "H5/H4" Diffusible Hydrogen Class.
- ▲ 550 MPa Tensile Class
- ▲ BATCH NUMBERED for On-the-Job Traceability.
- ▲ Recommended for the all positional (except vertical down) welding of Chromium and Chromium – Molybdenum bearing steels as used in elevated temperature applications.

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

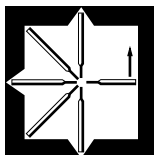
0.2% Proof Stress	570 MPa.
Tensile Strength	670 MPa.
Elongation	24%.

### TYPICAL ALL WELD METAL ANALYSIS:

C: 0.08%	Mn: 0.82%	Si: 0.39%
Mo: 0.65%	Cr: 1.40%	S: 0.013%
P: 0.015%		

### TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .



All positional - except vertical down

### Classifications:

AS/NZS 1553.2:	E5518-B2.
AWS/ASME-SFA A5.5:	E8018-B2 H4.

### Description and Applications:

Alloycraft 80-B2 is a basic hydrogen controlled Cr - Mo bearing electrode offering excellent weldability and weld deposit mechanical properties and "very low" diffusible hydrogen levels.

Alloycraft 80-B2 is suitable for the all positional (except vertical down) DC welding of a wide range of low alloy and medium strength steels. Alloycraft 80-B2 contains a nominal 1.25% Chromium and 0.5% Molybdenum alloy addition in the deposited weld metal and produces strong, tough weld deposits of the 550 MPa tensile class in the "as welded" condition.

Alloycraft 80-B2 is recommended for the all positional (except vertical down) welding of Chromium and Chromium - Molybdenum bearing steels as used in elevated temperature applications. Some applicable ASTM steel grades include: Grade A182, F11, F12, Grade A217, WC6, Grade A387, C, Grade A426, CP2, CP11, CP12, and AS2074 Grades L5B, L5G, L5H as used in steel pipes, boiler work, castings and forgings in the power station, refinery and petrochemical industries.

### Packaging and Operating Data:

AC (minimum 70 O.C.V.), DCEP (DC+) or DCEN (DC-) polarity.

Size mm	Electrode		Approx No. Rods/kg	Current Range (amps)	Can	Carton	Part No
	Length mm						
2.5	350		40	65-100	3kg	9kg - 3 x 3kg	611922
3.2	380		22	105-150	3kg	9kg - 3 x 3kg	611923
4.0	380		15	145-200	3kg	9kg - 3 x 3kg	611924

## ALLOYCRAFT 80-C1 – Hermetically Sealed

70  
OCVDC  
AC

- ▲ Hermetically sealed cans.
- ▲ Improved High Strength, Low Alloy Steel Electrode.
- ▲ Very Low "H5/H4" Diffusible Hydrogen Class.
- ▲ 550 MPa Tensile Class, Reliable Impact Toughness to -60°C.
- ▲ BATCH NUMBERED for On-the-Job Traceability.
- ▲ Suitable for the full or under matching strength welding of high strength nickel bearing steels as used for low temperature applications.

## Classifications:

AS/NZS 1553.2: E5518-C1.  
AWS/ASME-SFA A5.5: E8018-C1 H4.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

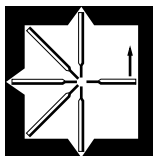
0.2% Proof Stress	550 MPa.
Tensile Strength	630 MPa.
Elongation	26%.
CVN Impact Values	75 J av @ -60°C.

## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.05%	Mn: 1.1%	Si: 0.38%
Ni: 2.46%		S: 0.013%
P: 0.015%		

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .



All positional - except vertical down

## Description and Applications:

Alloycraft 80-C1 is a basic hydrogen controlled electrode offering excellent weldability / weld deposit mechanical properties and "very low, H5" diffusible hydrogen levels. Alloycraft 80-C1 is suitable for the all positional (except vertical down) DC welding of a wide range of low alloy and medium strength steels Alloycraft 80-C1 contains a nominal 2.5% Nickel alloy addition in the deposited weld metal and produces strong, tough weld deposits of the 550 MPa tensile class in the "as welded" condition.

The advanced flux coating of Alloycraft 80-C1 ensures excellent resistance to hydrogen induced cold cracking in two important ways.

Alloycraft 80-C1 meets the AS/NZS 1553.1 very low "H5" hydrogen class after the recommended reconditioning treatment (see Storage and Reconditioning recommendations for details).

Alloycraft 80-C1 is suitable for the full or under matching strength welding of high strength nickel bearing steels as used for low temperature applications. Some applicable ASTM steel grades include: Grade A148, 80-40, 80-50, Grade A217, WC4, WC5, WC6, Grade A352, LC2, Grade A420, WPL9, Grade A43T Class 2, and Grade A707, L1-L4 as used in structural, transport, mining and earthmoving applications. Alloycraft 80-C1 is also good colour match for Austen T.

## Packaging and Operating Data:

AC (minimum 70 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx No. Rods/kg	Current Range (amps)	Can	Carton	Part No
3.2	380	18	110-145	3kg	9kg - 3 x 3kg	611833
4.0	380	12	140-200	3kg	9kg - 3 x 3kg	611834
5.0	450	10	190-270	3kg	9kg - 3 x 3kg	611835

# - Alloycraft 80-C1 is formulated to operate with AC (min 70 O.C.V.), DC+ or DC- polarity. The preferred polarity for DC welding is DC+.

- ▲ Hermetically sealed cans.
- ▲ Improved High Strength, Low Alloy Steel Electrode.
- ▲ Very Low "H5/H4" Diffusible Hydrogen Class.
- ▲ 620 MPa Tensile Class.
- ▲ BATCH NUMBERED for On-the-Job Traceability.
- ▲ Recommended for the all positional (except-down) welding of Cr-Mo and Cr-Mo-V bearing steels as used for high temperature applications.

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

0.2% Proof Stress	630 MPa.
Tensile Strength	720 MPa.
Elongation	20%.

### TYPICAL ALL WELD METAL ANALYSIS:

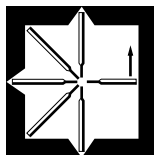
C: 0.08%	Mn: 0.85%	Si: 0.35%
Mo: 1.05%	Cr: 2.20%	S: 0.013%
P: 0.015%		

### TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .

### Classifications:

AS/NZS 1553.2:	E6218-B3
AWS/ASME-SFA A5.5:	E9018-B3 H4.



All positional - except vertical down

### Description and Applications:

Alloycraft 90-B3 is a basic hydrogen controlled Cr - Mo bearing electrode offering excellent weldability and weld deposit mechanical properties and "very low" diffusible hydrogen levels.

Alloycraft 90-B3 is suitable for the all positional (except vertical down) DC welding of a wide range low alloy and medium tensile strength steels. Alloycraft 90-B3 contains a nominal 2.25% Chromium and 1.0% Molybdenum and produces strong, tough weld deposits of the 620 MPa tensile class in the "as welded" condition.

Alloycraft 90-B3 is recommended for the all positional (except vertical-down) welding of Cr - Mo and Cr - Mo - V bearing steels as used for high temperature applications. Some applicable ASTM steel grades include: Grade A335 P22, Grade A182, F21, F22, Grade A426 CP21, CP22 as used in Cr- Mo-V piping, creep resistant steels , castings and forgings in the powerhouse and petrochemical industries.

### Packaging and Operating Data:

AC (minimum 70 O.C.V.), DCEP (DC+) or DCEN (DC-) polarity.

Size mm	Electrode		Approx No. Rods/kg	Current Range (amps)	Can	Carton	Part No
	Length mm						
3.2	380		22	105-150	3kg	9kg – 3 x 3kg	611963
4.0	380		15	145-200	3kg	9kg – 3 x 3kg	611964

## ALLOYCRAFT 90 – Hermetically Sealed

70  
OCVDC  
AC

- ▲ Hermetically sealed cans.
- ▲ Improved High Strength, Low Alloy Steel Electrode.
- ▲ Very Low "H5/H4" Diffusible Hydrogen Class.
- ▲ 620 MPa Tensile Class, Reliable Impact Toughness to -40°C.
- ▲ BATCH NUMBERED for On-the-Job Traceability.
- ▲ Applications include the full or under matching strength welding of high strength steels, including Bisalloy 60, 70 and 80, Welten 60 and 80, AS2074 Gr L6, Comsteel 023/026, ASTM A514 and A517 used in structural, transport, mining and earthmoving applications.

## Classifications:

AS/NZS 1553.2:	E6218-M.
AWS/ASME-SFA A5.5:	E9018M H4.

## Description and Applications:

Alloycraft 90 is a basic hydrogen controlled electrode offering excellent weldability / weld deposit mechanical properties and "very low, H5" diffusible hydrogen levels.

Alloycraft 90 is suitable for the all positional (except vertical down) DC welding of a wide range higher strength steels.

Alloycraft 90 produces strong, tough weld deposits of the 620 MPa tensile class in the "as welded" condition.

Alloycraft 90 meets the AS/NZS 1553.1 very low "H5" hydrogen class after the recommended reconditioning treatment (see Storage and Reconditioning recommendations for details).

Typical applications of Alloycraft 90 include the full or under matching strength welding of high strength steels, including Bisalloy 60, 70 and 80, Welten 60 and 80, AS2074 Gr L6, Comsteel 023/026, ASTM A514 and A517 used in structural, transport, mining and earthmoving applications.

## Packaging and Operating Data:

AC (minimum 70 O.C.V.), DC+ or DC- polarity.

Electrode Size mm	Electrode Length mm	Approx. No. Rods/kg	Current Range (amps)	Can	Carton	Part No
3.2	380	18	110-145	3kg	9kg – 3 x 3kg	611873
4.0	380	12	140-200	3kg	9kg – 3 x 3kg	611874
5.0	450	10	190-270	3kg	9kg – 3 x 3kg	611875

# - Alloycraft 90 is formulated to operate with AC (min 70 O.C.V.), DC+ or DC- polarity. The preferred polarity for DC welding is DC+.

## COMPARABLE CIGWELD PRODUCTS

Verti-cor 91 K2  
AWS A5.20: E91T1-K2.

## TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

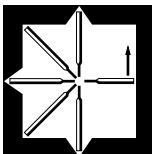
0.2% Proof Stress	590 MPa.
Tensile Strength	680 MPa.
Elongation	26%.
CVN Impact Values	90 J av @ -40°C.

## TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07%	Mn: 1.0%	Si: 0.40%
Ni: 1.6%	Mo: 0.3%	

## TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .



All positional - except vertical down

- ▲ Hermetically sealed cans.
- ▲ Improved High Strength, Low Alloy Steel Electrode.
- ▲ Very Low “H5/H4” Diffusible Hydrogen Class.
- ▲ 760 MPa Tensile Class, Reliable Impact Toughness to -40°C.
- ▲ BATCH NUMBERED for On-the-Job Traceability.
- ▲ Applications include the full strength welding of high strength steels, including Bisalloy 80, USST1 and T1A, welten 80, HY80, AS2074 Grade L6A and ASTM A533 type A, A514 and A517 grades used in structural transport, mining and earthmoving applications.

### Classifications:

AS/NZS 1553.2: E7618-M.  
 AWS/ASME-SFA A5.5: E11018M H4.

### Description and Applications:

Alloycraft 110 is a basic hydrogen controlled electrode offering excellent weldability / weld deposit mechanical properties and “very low, H5” diffusible hydrogen levels.

Alloycraft 110 is suitable for the all positional (except vertical down) DC welding of a wide range of high strength steels. Alloycraft 110 produces strong, tough weld deposits of the 760 MPa tensile class in the “as welded” condition.

Alloycraft 110 meets the AS/NZS 1553.1 very low “H5” hydrogen class after the recommended reconditioning treatment (see Storage and Reconditioning recommendations for details).

Typical applications of Alloycraft 110 include the full strength welding of high strength steels, including Bisalloy 80, USST1 and T1A, Welten 80, HY80, AS2074 Grade L6A and ASTM A533 type A, A514 and A517 grades used in structural, transport, mining and earthmoving applications.

### Packaging and Operating Data:

AC (minimum 70 O.C.V.), DC+ or DC- polarity.

Electrode		Approx No. Rods/kg	Current Range (amps)	Can	Carton	Part No
Size mm	Length mm					
3.2	380	18	110-145	3kg	9kg – 3 x 3kg	611893
4.0	380	12	140-200	3kg	9kg – 3 x 3kg	611894

# - Alloycraft 110 is formulated to operate with AC (min 70 O.C.V.), DC+ or DC- polarity. The preferred polarity for DC welding is DC+.

### COMPARABLE CIGWELD PRODUCTS:

Tensi-cor 110 TXP	Verticor 111K3
AWS A5.20: E110T5-K4	AWS A5.20: E111T1-K3

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:

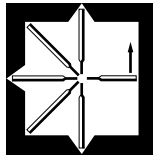
0.2% Proof Stress	710 MPa.
Tensile Strength	820 MPa.
Elongation.	22%.
CVN Impact Values.	60 J av @ -50°C.

### TYPICAL ALL WELD METAL ANALYSIS:

C: 0.07%	Mn: 1.5%	Si: 0.45%
Ni: 2.1%	Mo: 0.4%	Cr: 0.2%

### TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:

3.0 - 3.5 mls of hydrogen / 100gms of deposited weld metal .



All positional - except vertical down



