Introduction

CIGWELD Professional:
when welding is your business

At Thermadyne we distinguish ourselves from our competitors through superior features, dependable products, technical innovation and excellence in customer service and technical support.

Our range of high performance electrodes, rods and fluxes offers an optimum solution for every welding application.

So if you’re serious about performance, cost and ease of use the CIGWELD Professional range has the answer.

Key to Icons

- **DC AC**: Alternating or direct current - either polarity
- **AC DC+**: Alternating or direct current - electrode positive
- **AC DC−**: Alternating or direct current - electrode negative
- **DC +**: Direct current electrode positive
- **DC −**: Direct current electrode negative
- **45 oCV**: Open circuit voltage rating
- **HV30 780**: Weld metal hardness
- **10.9%**: IACS electrical conductivity %
- **630˚C**: Melting point
- **Gas Welding**: Gas Welding
- **TIG/GTAW welding**: TIG/GTAW welding
- **All positions except vertical down**: All positions except vertical down
- **All positions**: All positions
- **Downhand only**: Downhand only
- **Downhand & horizontal**: Downhand & horizontal

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**Mild Steel and Iron Powder Electrodes**

### GP6012

- Versatile General Purpose Electrode
- All Positional Welding Capabilities
- Ideal for the Vertical-Down Welding of Thin Steel Sections
- Wrought iron furniture
- Suitable for welding Mild steel plate, sheet metal and galvanised iron sheet, ducting, hoppers, tanks, pipes and low pressure pipelines
- Pipes and low pressure pipelines
- Excellent for welding joints with poor fit-up

**Classifications:**
- AS/NZS 4855: (new) B 4313 A
- AS/NZS 1553.1: (old) E4112-0
- AWS/ASME-SFA A5.1: E6013

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
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<td>4.0</td>
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AC (minimum 45 OCV) DC+ or DC- polarity

**Typical All Weld Metal Mechanical Properties:**
- Yield Stress: 430 MPa
- Tensile Strength: 490 MPa
- Elongation: 29%
- CVN Impact Values: 80J av @ 0°C.

**Approvals:**
- Lloyds Register of Shipping Grade 2
- American Bureau of Shipping Grade 2
- Det Norske Veritas Grade 2

### Ferrocraft 12XP

- Versatile General Purpose Electrode
- All Positional Welding Capabilities
- Ideal for the Vertical-Down Welding of Thin Steel Sections
- Wrought iron furniture
- Suitable for welding Mild steel plate, sheet metal and galvanised iron sheet, ducting, hoppers, tanks, pipes and low pressure pipelines
- Pipes and low pressure pipelines
- Excellent for welding joints with poor fit-up

**Classifications:**
- AS/NZS 4855: (new) B 4313 A
- AS/NZS 1553.1: (old) E4112-0
- AWS/ASME-SFA A5.1: E6013

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Easyweld Blister Pack:
10 x 2.5mm/5 x 3.2mm rod Ferrocraft 12XP Blister Pack 322213

AC (minimum 45 OCV) DC+ or DC- polarity

**Typical All Weld Metal Mechanical Properties:**
- Yield Stress: 460 MPa
- Tensile Strength: 500 MPa
- Elongation: 27%
- CVN Impact Values: 75J av @ 0°C.

**Approvals:**
- Lloyds Register of Shipping Grade 2, 2Y
- American Bureau of Shipping Grade 2, 2Y
- Det Norske Veritas Grade 2
Mild Steel and Iron Powder Electrodes

Satincraft 13

- General Purpose, Rutile Type Electrode
- Outstanding Operator Appeal!
- Versatile - All Positional Capabilities
- Smooth Melt Fillet Welds with Low Spatter
- BLUE flux colour for instant ID

General workshop, field and structural welding of mild or galvanised steel components such as pipes, tanks, frames, fences and gates, etc.

Classifications:

| AS/NZS 4855: (new) | B E4313 A |
| AS/NZS 1553.1: (old) | E4115-0 |
| AWS/ASME-SFA A5.1: | E6013 |

Typical All Weld Metal Mechanical Properties:
- Yield Stress: 460 MPa
- Tensile Strength: 520 MPa
- Elongation: 28%
- CVN Impact Values: 66 J av @ 0°C.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Range (amps)</th>
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<th>Carton</th>
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Easyweld Blister Pack:
10 x 2.5mm/5 x 3.2mm rod Satincraft Blue Blister Pack 322203

AC (minimum 45 OCV) DC+ or DC- polarity

Weldcraft

- Rutile, basic type electrode
- Higher radiographic quality
- Excellent mechanical properties
- Versatile ‘out of position’ capabilities
- ‘On-site’ and workshop welding where better mechanical properties are required and the work cannot be re-positioned to allow welding in the downhand. The electrode is recommended for welding joints subject to radiographic examination in pressure vessel, ship building, bridge and storage tank fabrications.

Classifications:

| AS/NZS 4855: (new) | B E4303 A U |
| AS/NZS 1553.1: (old) | E4115-2 |
| AWS/ASME-SFA A5.1: | E6013 |

Typical All Weld Metal Mechanical Properties:
- Yield Stress: 420 MPa
- Tensile Strength: 490 MPa
- Elongation: 28%
- CVN Impact Values: 66 J av @ 0°C.

Packaging and Operating Data:

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AC (minimum 45 OCV) DC+ or DC- polarity

Ferrocraft 21

- Rutile Type, Medium Iron Powder Electrode
- Excellent Operator Appeal!
- Versatile - All Positional Capabilities.
- Easy Striking - Hot or Cold!
- Ideal for Vertical Down Fillet Welding.
- Workshop or “on-site” repair, maintenance and fabrication welding jobs where the iron powder addition gives improved usability over conventional E4112 rutile type electrodes.
- Ideal vertical-down fillet welding electrode for thinner steel sections using “Touch Welding” techniques.

Classifications:

| AS/NZS 4855: (new) | B E4914 A U |
| AS/NZS 1553.1: (old) | E4115-2 |
| AWS/ASME-SFA A5.1: | E7014 |

Typical All Weld Metal Mechanical Properties:
- Yield Stress: 430 MPa
- Tensile Strength: 500 MPa
- Elongation: 30%
- CVN Impact Values: 90 J av @ 0°C.

Packaging and Operating Data:

<table>
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<th>Electrode Approx No.</th>
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<th>Hang-tube</th>
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Easyweld Blister Pack:
10 x 2.5mm/5 x 3.2mm rod Ferrocraft 21 Blister Pack 322205

AC (minimum 45 OCV) DC+ or DC- polarity

# 5.0mm Ferrocraft 21 is not recommended for out of position (ie. vertical or overhead) welding applications.
Mild Steel and Iron Powder Electrodes

**Ferrocraft 22**

- Rutile Type High Iron Powder Electrode
- High Productivity Fillet and Butt Welding in All Downhand Positions
- Self Releasing Slag
- Recommended for high production welding where large standing fillet welds are required
- Ideal electrode for heavy structural welding – tanks, frames, girders, beams, ship structures, rolling stock and general fabrication in the workshop or "on-site"

**Classifications:**
- AS/NZS 4855: (new) B E4924 A
- AS/NZS 1553.1: (old) E4824-0
- AWS/ASME-SFA A5.1: E7024

**Typical All Weld Mechanical Properties:**
- Yield Stress: 440 MPa
- Tensile Strength: 512 MPa
- Elongation: 25%
- CVN Impact Values: 60J at 0°C

**Pipearc 6010P**

- User Friendly Pipe Welding Electrode
- Lower Spatter Levels and Easy Slag Removal
- Excellent Reverse Bead Formation on Butts
- Versatile “Out-of-Position” Capabilities
- Batch Numbered for On-the-Job Traceability
- Used to weld out (root, fill and cap) steel pipes such as API 5L, 5LX grades X42 to X52
- Welding of "V" butt (groove weld) joints in higher strength steels, including 5LX grades X60, X65 and X70. Recommended for root pass welding only.

**Classifications:**
- AS/NZS 4855: (new) B E4310 A
- AS/NZS 1553.1: (old) E4110-2
- AWS/ASME-SFA A5.1: E6010

**Typical All Weld Mechanical Properties:**
- Yield Stress: 400 MPa
- Tensile Strength: 510 MPa
- Elongation: 30%
- CVN Impact Values: 65J at -20°C

**Ferrocraft 11**

- Cellulose Pipe Welding Electrode
- All Positional, AC / DC Capabilities
- High Penetration, Root Pass Applications
- WHITE flux colour for easy ID
- Recommended for root pass welding where the “stovepipe” or “flick” techniques can be used to achieve full root penetration
- The root, hot fill and capping pass welding of pipelines, pressure vessels, storage tanks, workshop and field construction

**Classifications:**
- AS/NZS 4855: (new) B E4311 A
- AS/NZS 1553.1: (old) E4111-2
- AWS/ASME-SFA A5.1: E6011

**Typical All Weld Mechanical Properties:**
- Yield Stress: 415 MPa
- Tensile Strength: 500 MPa
- Elongation: 28%
- CVN Impact Values: 90J at -20°C

The results quoted in this data sheet are obtained from the listed Shipping Societies (ABS, DNV, LRS) Conformance Tests and Procedures. Actual weld metal mechanical properties achieved with Pipearc 6010P are influenced by many factors including, base metal analysis, welding parameters / heat input used, number of weld passes and run placement etc. On the job mechanical tests may produce different results. Please consult your CIGWELD Area Manager or Customer Service for welding procedure recommendations.

**Packaging and Operating Data:**

**Ferrocraft 22**

- Electrode Approx No. Current Packet Carton Part No
- Size mm Length mm Rods/kg Range (amps)
- 2.5 350 34 85 – 120 5kg 15kg – 3 x 5kg 611252
- 3.2 380 18 90 – 135 5kg 15kg – 3 x 5kg 611253
- 4.0 450 11 185 – 235 5kg 15kg – 3 x 5kg 611254
- 5.0 450 7 260 – 320 5kg 15kg – 3 x 5kg 611255

**Pipearc 6010P**

- Electrode Approx No. Current Packet Carton Part No
- Size mm Length mm Rods/kg Range (amps)
- 2.5 300 66 45 – 85 5kg 15kg – 3 x 5kg 615602
- 3.2 350 39 90 – 135 5kg 15kg – 3 x 5kg 615603
- 4.0 380 25 130 – 160 5kg 15kg – 3 x 5kg 615604

**Ferrocraft 11**

- Electrode Approx No. Current Packet Carton Part No
- Size mm Length mm Rods/kg Range (amps)
- 2.5 300 62 65 – 85 5kg 15kg – 3 x 5kg 611322
- 3.2 380 33 95 – 125 5kg 15kg – 3 x 5kg 611333
- 4.0 380 22 130 – 160 5kg 15kg – 3 x 5kg 611334

**Approvals:**
- Lloyds Register of Shipping Grade 2Y
- American Bureau of Shipping Grade 2
- Det Norske Veritas Grade 2

**Pipearc 6010P**

- Electrode Approx No. Current Packet Carton Part No
- Size mm Length mm Rods/kg Range (amps)
- 2.5 300 62 65 – 85 5kg 15kg – 3 x 5kg 615602
- 3.2 380 33 95 – 125 5kg 15kg – 3 x 5kg 611333
- 4.0 380 22 130 – 160 5kg 15kg – 3 x 5kg 611334

**Approvals:**
- Lloyds Register of Shipping Grade 3, 3Y
- American Bureau of Shipping Grade 3
- Det Norske Veritas Grade 3
Hydrogen Controlled Electrodes

Storage & Reconditioning of CIGWELD Hydrogen Controlled Electrodes

- **Storage Environments:** Undamaged packs/cartons of Ferrocraft 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 Ferrocraft 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 packaged with an air tight seal to maintain product in an original “FACTORY FRESH” condition for an indefinite period provided the seal is unbroken.

### Ferrocraft 16 Twincoat

- Unique dual or twin coated flux for easy arc starting
- Ultra smooth performance in all welding positions
- Reliable Grade 3 weld metal properties
- Ideal electrode for a wide range of maintenance jobs, including the repair of earthmoving equipment and as a buffer layer prior to the application of hardfacing.

**Classifications:**

- AS/NZS 4855: (new) B E4916 A U H10
- AS/NZS 1553.1: (old) E4816-2 H10
- AWS/ASME-SFA A 5.1: E7016 H8

**Typical All Weld Metal Mechanical Properties:**

- **Yield Stress:** 480 MPa
- **Tensile Strength:** 570 MPa
- **Elongation:** 25%
- **CVN Impact Values:** 125J av @ -30°C

**Typical Diffusible Hydrogen Levels to AS3752:**

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

*Reconditioned for 2 hours max @ 300°C

**Approvals:**

- Lloyds Register of Shipping Grade 3Y H10
- American Bureau of Shipping Grade 3H10, 3Y

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Pack</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
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<td>53</td>
<td>50 – 90</td>
<td>5kg</td>
<td>15kg</td>
<td>611752</td>
</tr>
<tr>
<td>3.2</td>
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<td>85 – 140</td>
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<td>15kg</td>
<td>611753</td>
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<tr>
<td>4.0</td>
<td>350</td>
<td>21</td>
<td>135 – 190</td>
<td>5kg</td>
<td>15kg</td>
<td>611754</td>
</tr>
</tbody>
</table>

### Ferrocraft 7016

- 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°C.
- Applications include pressure vessel fabrication, bridge, ship building, equipment repair and maintenance work.

**Classifications:**

- AS/NZS 4855: (new) B 4916 A U H10
- AS/NZS 1553.1: (old) E4816-3 H10
- AWS/ASME-SFA A 5.1: E7016 H8

**Typical All Weld Metal Mechanical Properties:**

- **Yield Stress:** 480 MPa
- **Tensile Strength:** 570 MPa
- **Elongation:** 25%
- **CVN Impact Values:** 125J av @ -30°C

**Typical Diffusible Hydrogen Levels to AS3752:**

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

*Reconditioned for 2 hours max @ 300°C

**Approvals:**

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

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
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<td>90 – 130</td>
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<td>15kg</td>
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<td>19</td>
<td>120 – 180</td>
<td>5kg</td>
<td>15kg</td>
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</tr>
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</table>

Ferrocraft 7016 is formulated to operate with AC (minimum 50 OCV) DC+ or DC- polarity. The preferred polarity of fillet welding and fill and capping passes is DC+.
Hydrogen Controlled Electrodes

**Ferrocraft 55U**

- Basic, Hydrogen Controlled E4816 / E7016 Type Electrode.
- Thin Coated for Easier Joint Access.
- Purple End Tip Colour for instant I.D.
- Designed specifically for the all positional (except vertical down) root pass welding of steel pipes and plates.

**Classifications:**

- AS/NZS 4855: (new) B E4816 A U H10
- AS/NZS 1553:1: (old) E4816-2 H10
- AWS/ASME-SFA A5.1: E7016 H8

**Typical All Weld Metal Mechanical Properties:**

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

- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal
  - *Reconditioned for 2 hours max. @ 300°C*

**Approvals:**

- Lloyds Register of Shipping Grade 3, 3Y H5
- American Bureau of Shipping Grade 3H5, 3Y
- Det Norske Veritas Grade 3Y H5

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Packet Carton Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size mm</td>
<td>Length mm</td>
</tr>
<tr>
<td>2.5</td>
<td>350</td>
</tr>
<tr>
<td>3.2</td>
<td>380</td>
</tr>
<tr>
<td>3.2</td>
<td>380</td>
</tr>
<tr>
<td>4.0</td>
<td>380</td>
</tr>
<tr>
<td>5.0</td>
<td>450</td>
</tr>
</tbody>
</table>

Ferrocraft 55U is formulated to operate with AC (minimum 55 OCV), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

**Ferrocraft 61**

- Basic Coated, Hydrogen Controlled E4818 / E7018 Type Electrode.
- Excellent Out-of-Position Welding.
- Reliable Impact Properties -30°C.
- **Batch NUMBER Identification.**
- 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 & repair work.

**Classifications:**

- AS/NZS 4855: (new) B E4818 A U H10
- AS/NZS 1553:1: (old) E4818-3 H10
- AWS/ASME-SFA A5.1: E7018

**Typical All Weld Metal Mechanical Properties:**

- **Yield Stress:** 450 MPa
- **Tensile Strength:** 545 MPa
- **Elongation:** 29%
- **CVN Impact Values:** 165J av @ -20°C, 130J 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 max. @ 300°C*

**Approvals:**

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

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Packet Carton Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size mm</td>
<td>Length mm</td>
</tr>
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<td>350</td>
</tr>
<tr>
<td>3.2</td>
<td>380</td>
</tr>
<tr>
<td>3.2</td>
<td>380</td>
</tr>
<tr>
<td>4.0</td>
<td>380</td>
</tr>
<tr>
<td>5.0</td>
<td>450</td>
</tr>
</tbody>
</table>

Ferrocraft 61 is formulated to operate with AC (minimum 55 OCV), DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.

**Ferrocraft 61 H4 - Hermetically Sealed**

- Ultra-Seal vacuum packs.
- Highly Basic, E4918-1/ E7018-1 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 4855: (new) B E4918-1 A U H5
- AS/NZS 1553:1: (old) E4818-5 H5R
- AWS/ASME-SFA A5.1: E7018-1 H4R

**Typical All Weld Metal Mechanical Properties:**

- **Yield Stress:** 460 MPa
- **Tensile Strength:** 550 MPa
- **Elongation:** 28%
- **CVN Impact Values:** 110J av @ -40°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:**

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

**Approvals:**

- Lloyds Register of Shipping Grade 3, 3Y H5
- American Bureau of Shipping Grade 3H5, 3Y
- Det Norske Veritas Grade 3Y H5

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Packet Carton Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size mm</td>
<td>Length mm</td>
</tr>
<tr>
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</tr>
<tr>
<td>3.2</td>
<td>350</td>
</tr>
<tr>
<td>4.0</td>
<td>350</td>
</tr>
</tbody>
</table>

AC (minimum 55 OCV) DC+ or DC- polarity.
Ferrocraft 61 Ni H4 - Hermetically Sealed

- Ultra-Seal vacuum packs.
- Highly Basic, E4918-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.

Typical All Weld Metal Mechanical Properties:
- Yield Stress 450 MPa
- Tensile Strength 560 MPa
- Elongation 27%
- CVN Impact Values 130J av @-20°C
  80J av @ -40°C
  60J 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.

Approvals:
- Lloyds Register of Shipping Grade 3, 3Y H5
- American Bureau of Shipping Grade 3H10, 3Y
- Det Norske Veritas Grade 3Y S

Ultra-Seal vacuum packs.
- 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: 0.07% Mn: 0.9% Si: 0.39%
- Ni: 2.45% S: 0.013% P: 0.015%
- Cr: 1.40%

Typical Diffusible Hydrogen Levels to AS3752:
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

Comparable CIGWELD Products:
- Verti-Cor 81Ni2 FCAW
- Autocraft CrMo1 GMAW

Alloycraft 80-B2 - Hermetically Sealed

Ultra-Seal vacuum packs.
- Improved High Strength, Low Alloy Steel Electrode.
- Advanced Flux Coating.
- 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.

Typical All Weld Metal Mechanical Properties:
- 0.2% Proof Stress 570 MPa
- Tensile Strength 670 MPa
- Elongation 24%

Typical All Weld Metal Analysis:
- C: 0.05% Mn: 1.10% Si: 0.39%
- Ni: 2.25% S: 0.013% P: 0.015%

Typical Diffusible Hydrogen Levels to AS3752:
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

Comparable CIGWELD Products:
- Verti-Cor 81Ni2 FCAW
- Autocraft CrMo1 GMAW

Alloycraft 80-C1 - Hermetically Sealed

Ultra-Seal vacuum packs.
- Improved High Strength, Low Alloy Steel Electrode.
- Advanced Flux Coating.
- 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.

Typical All Weld Metal Mechanical Properties:
- 0.2% Proof Stress 570 MPa
- Tensile Strength 670 MPa
- Elongation 24%

Typical All Weld Metal Analysis:
- C: 0.05% Mn: 1.10% Si: 0.39%
- Ni: 2.25% S: 0.013% P: 0.015%

Typical Diffusible Hydrogen Levels to AS3752:
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

Comparable CIGWELD Products:
- Verti-Cor 81Ni2 FCAW
- Autocraft CrMo1 GMAW

Alloycraft 80-C1 is formulated to operate with AC (minimum 70 OCV) DC+ or DC- polarity. The preferred polarity for fillet welding and fill and capping passes is DC+.
Hydrogen Controlled Electrodes

**Alloycraft 90-B3 - Hermetically Sealed**

- Hermetically Sealed Ultra-Seal vacuum packs.
- 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 Diffusible Hydrogen Levels to AS3752:**
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode</th>
<th>Approx No. Rods/kg</th>
<th>Range (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
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<td>105 – 150</td>
</tr>
<tr>
<td>4.0</td>
<td>350</td>
<td>145 – 200</td>
</tr>
</tbody>
</table>

AC (minimum 70 OCV) DC+ or DC- polarity.

**Alloycraft 90 - Hermetically Sealed**

- Hermetically Sealed Ultra-Seal vacuum packs.
- Improved High Strength, Low Alloy Steel Electrode.
- Very Low “H5/H4” Diffusible Hydrogen Class.
- 550 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 earthing applications.

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 590 MPa
- Tensile Strength: 680 MPa
- Elongation: 26%
- CVN Impact Values: 90J av @-40°C

**Typical Diffusible Hydrogen Levels to AS3752:**
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

**Comparable CIGWELD Products:**
- Verti-Cor 91 K2 H4 (AWS A5.20: E91T1-K2)

**Packaging and Operating Data:**

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<thead>
<tr>
<th>Electrode</th>
<th>Approx No. Rods/kg</th>
<th>Range (amps)</th>
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<tbody>
<tr>
<td>3.2</td>
<td>350</td>
<td>110 – 145</td>
</tr>
<tr>
<td>4.0</td>
<td>350</td>
<td>140 – 200</td>
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<tr>
<td>5.0</td>
<td>350</td>
<td>190 – 270</td>
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AC (minimum 70 OCV) DC+ or DC- polarity.

**Alloycraft 110 - Hermetically Sealed**

- Hermetically Sealed Ultra-Seal vacuum packs.
- 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 earthing applications.

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 710 MPa
- Tensile Strength: 820 MPa
- Elongation: 22%
- CVN Impact Values: 60J av @-50°C

**Typical Diffusible Hydrogen Levels to AS3752:**
- 3.0-3.5 mls of hydrogen/100gms of deposited weld metal.

**Comparable CIGWELD Products:**
- Tensi-Cor 110 TXP H4 (AWS A5.20: E110T5-K4)
- Verti-Cor 111K3 H4 (AWS A5.20: E111T1-K3)

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode</th>
<th>Approx No. Rods/kg</th>
<th>Range (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>350</td>
<td>110 – 145</td>
</tr>
<tr>
<td>4.0</td>
<td>350</td>
<td>140 – 200</td>
</tr>
</tbody>
</table>

AC (minimum 70 OCV) DC+ or DC- polarity.

The preferred polarity for DC welding is DC+.
**Stainless Steel & Special Electrodes**

### Satincrome 308L-17

- Hermetically Sealed Ultra-Seal vacuum packs.
- Rutile Type, Stainless Steel Electrode.
- Outstanding Operator Appeal. Improved slag lift.
- All Positional (except vertical down) Welding Capabilities.
- Applications include the single and multi-pass welding of 19Cr/10Ni type stainless steel grades including 201, 202, 301, 302, 303, 304, 304L, 305, 308 etc.

**Classifications:**
- AS/NZS 2576: E6200-A2
- AWS/ASME-SFA A5.6: E Cu-Sn-C

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 500 MPa
- Tensile Strength: 630 MPa
- Elongation: 40%
- CVN Impact Values: 75J av @+20°C

**Typical All Weld Metal Analysis:**
- C: 0.076%
- Mn: 0.87%
- Si: 0.87%
- Cr: 20.4%
- Ni: 9.8%
- S: 0.010%
- P: 0.071%

**Ferrite Number:**
- 3.0-10.0 FN*

**Approvals:**
- American Bureau of Shipping AWS A5.4: E308L-17

**Comparable CIGWELD Products:**
- Autocraft 308LSi GMAW wire
- Comweld 308L Gas/TIG wire
- Verti-Cor 308LT & FCAW wires

**Packaging and Operating Data:**

| Electrode Approx No. Current Packet Carton Part No |
|---|---|---|---|
| 3.2 | 350 | 30 | 70 – 110 | 2.5kg | 15kg - 6 x 2.5kg | 611602 |
| 3.4 | 350 | 30 | 70 – 110 | 2.5kg | 15kg - 6 x 2.5kg | 611603 |
| 4.0 | 350 | 18 | 110 – 150 | 2.5kg | 15kg - 6 x 2.5kg | 611604 |

**AC (minimum 45 OCV) DC+ polarity.**

### Satincrome 309Mo-17

- Hermetically Sealed Ultra-Seal vacuum packs.
- Rutile Type, Stainless Steel Electrode.
- Outstanding Operator Appeal. Improved slag lift.
- All Positional (except vertical down) Welding Capabilities.
- Applications include the single and multi-pass welding of matching 309 and 309L stainless steels. Also suitable for the dissimilar welding of other “300 series” austenitic stainless steels and selected “400 series” ferritic grades to mild or low alloy steels.

**Classifications:**
- AS/NZS 4854: (new) B ES309Mo-17
- AS/NZS 1553.3: (old) E309Mo-17
- AWS/ASME-SFA A5.4: E309Mo-17

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 315 MPa
- Tensile Strength: 460 MPa
- Elongation: 22%
- Hardness: 120 HV

**Typical All Weld Metal Analysis:**
- C: 0.076%
- Mn: 0.67%
- Si: 0.87%
- Cr: 23.0%
- Ni: 13.0%
- Mo: 2.2%
- S: 0.012%
- P: 0.017%

**Ferrite Number:**
- 15.0-20.0 FN*

**Approvals:**
- American Bureau of Shipping AWS A5.4: E309Mo-17

**Comparable CIGWELD Products:**
- Autocraft Silicon Bronze Copper Alloy MIG Wire
- Comweld Silicon Bronze Copper Alloy TIG Wire

**Packaging and Operating Data:**

| Electrode Approx No. Current Packet Carton Part No |
|---|---|---|---|
| 2.5 | 300 | 52 | 40 – 70 | 2.5kg | 15kg - 6 x 2.5kg | 611691 |
| 3.2 | 350 | 28 | 75 – 110 | 2.5kg | 15kg - 6 x 2.5kg | 611692 |
| 4.0 | 350 | 19 | 110 – 150 | 2.5kg | 15kg - 6 x 2.5kg | 611693 |

**AC (minimum 45 OCV) DC+ polarity.**

### Bronzecraft AC-DC

- Phosphor Bronze electrode containing 7% Tin.
- For Welding Copper and Copper Alloys.
- Also for Joining Copper and Copper Alloys to Steel.
- Easy to use, High Quality Weld Deposit Appearance.

**Classifications:**
- AS/NZS 4854: (new) B ES308L-17
- AS/NZS 1553.3: (old) E308L-17
- AWS/ASME-SFA A5.4: E308L-17

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 515 MPa
- Tensile Strength: 660 MPa
- Elongation: 22%
- Hardness: 120 HV

**Typical All Weld Metal Analysis:**
- C: 0.025%
- Mn: 0.75%
- Si: 0.9%
- Cr: 23.0%
- Ni: 13.0%
- Mo: 2.2%
- S: 0.012%
- P: 0.017%

**Ferrite Number:**
- 15.0-20.0 FN*

**Comparable CIGWELD Products:**
- Autocraft Silicon Bronze Copper Alloy MIG Wire
- Comweld Silicon Bronze Copper Alloy TIG Wire

**Packaging and Operating Data:**

| Electrode Approx No. Current Packet Carton Part No |
|---|---|---|---|
| 2.5 | 300 | 52 | 40 – 70 | 2.5kg | 15kg - 6 x 2.5kg | 611691 |
| 3.2 | 350 | 28 | 75 – 110 | 2.5kg | 15kg - 6 x 2.5kg | 611692 |
| 4.0 | 350 | 19 | 110 – 150 | 2.5kg | 15kg - 6 x 2.5kg | 611693 |

**AC (minimum 45 OCV) DC- polarity.**

### Bronzecraft AC-DC

- Phosphor Bronze electrode containing 7% Tin.
- For Welding Copper and Copper Alloys.
- Also for Joining Copper and Copper Alloys to Steel.
- Easy to use, High Quality Weld Deposit Appearance.

**Classifications:**
- AS/NZS 4854: (new) B ES309Mo-17
- AS/NZS 1553.3: (old) E309Mo-17
- AWS/ASME-SFA A5.4: E309Mo-17

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress: 315 MPa
- Tensile Strength: 460 MPa
- Elongation: 22%
- Hardness: 120 HV

**Typical All Weld Metal Analysis:**
- C: 0.025%
- Mn: 0.75%
- Si: 0.9%
- Cr: 23.0%
- Ni: 13.0%
- Mo: 2.2%
- S: 0.012%
- P: 0.017%

**Ferrite Number:**
- 15.0-20.0 FN*

**Comparable CIGWELD Products:**
- Autocraft Silicon Bronze Copper Alloy MIG Wire
- Comweld Silicon Bronze Copper Alloy TIG Wire

**Packaging and Operating Data:**

| Electrode Approx No. Current Packet Carton Part No |
|---|---|---|---|
| 2.5 | 300 | 52 | 40 – 70 | 2.5kg | 15kg - 6 x 2.5kg | 611691 |
| 3.2 | 350 | 28 | 75 – 110 | 2.5kg | 15kg - 6 x 2.5kg | 611692 |
| 4.0 | 350 | 19 | 110 – 150 | 2.5kg | 15kg - 6 x 2.5kg | 611693 |

**AC (minimum 45 OCV) DC- polarity.**
Satincrome 316L-17

- Hermetically Sealed Ultra-Seal vacuum packs.
- Rutile Type, Stainless Steel Electrode.
- Outstanding Operator Appeal. Improved slag lift.
- All Positional (except vertical down) Welding Capabilities.
- Applications include the single and multi-pass welding of 19Cr/10Ni type stainless steel grades including 201, 202, 301, 302, 303, 304L, 305, 308 etc.

Typical All Weld Metal Mechanical Properties:
- 0.2% Proof Stress: 490 MPa
- Tensile Strength: 610 MPa
- Elongation: 36%

Typical All Weld Metal Analysis:
- C: 0.025%
- Mn: 0.8%
- Si: 0.85%
- Cr: 19.4%
- Ni: 11.5%
- Mo: 2.5%
- S: 0.011%
- P: 0.017%

Ferrite Number:
- 3.0-10.0 FN*

Classifications:
- AS/NZS 4854: (new) B ES316L-17
- AS/NZS 1553.3: (old) E316L-17
- AWS/ASME-SFA A5.4: E316L-17

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx. No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
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<tr>
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<td>35 – 55</td>
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<td>15kg</td>
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<tr>
<td>2.5</td>
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<td>46</td>
<td>40 – 70</td>
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<td>15kg</td>
<td>611662</td>
</tr>
<tr>
<td>3.2</td>
<td>350</td>
<td>28</td>
<td>75 – 110</td>
<td>2.5kg</td>
<td>15kg</td>
<td>611663</td>
</tr>
<tr>
<td>4.8</td>
<td>350</td>
<td>18</td>
<td>110 – 150</td>
<td>2.5kg</td>
<td>15kg</td>
<td>611664</td>
</tr>
</tbody>
</table>

Easyweld Blister Pack:
- 10 x 2.5mm/5 x 3.2mm rod Satincrome 316L-17 Blister Pack 322214

Satincrome 318-17

- Hermetically Sealed Ultra-Seal vacuum packs.
- Rutile Type, Stainless Steel Electrode.
- Outstanding Operator Appeal. Improved slag lift.
- All Positional (except vertical down) Welding Capabilities.
- Applications include the single and multi-pass welding of stabilised and unstabilised 19Cr/10Ni type stainless steels, such as 316, 318 and 321.

Typical All Weld Metal Mechanical Properties:
- 0.2% Proof Stress: 480 MPa
- Tensile Strength: 600 MPa
- Elongation: 40%

Typical All Weld Metal Analysis:
- C: 0.025%
- Mn: 0.8%
- Si: 0.85%
- Cr: 19.4%
- Ni: 11.5%
- Mo: 2.5%
- S: 0.011%
- P: 0.017%

Ferrite Number:
- 5.0-10.0 FN*

Classifications:
- AS/NZS 4854: (new) B ES318-17
- AS/NZS 1553.3: (old) E318-17
- AWS/ASME-SFA A5.4: E318-17

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
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<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>300</td>
<td>46</td>
<td>40 – 70</td>
<td>2.5kg</td>
<td>15kg-6x2.5kg</td>
<td>611652</td>
</tr>
<tr>
<td>3.2</td>
<td>350</td>
<td>28</td>
<td>75 – 110</td>
<td>2.5kg</td>
<td>15kg-6x2.5kg</td>
<td>611663</td>
</tr>
</tbody>
</table>

AC (minimum 45 OCV) DC+ polarity.
Stainless Steel & Special Electrodes

Weldall

- Hermetically Sealed Ultra-Seal vacuum packs.
- Easy-to-Use Rutile Type, High Alloy Electrode.
- Outstanding Operator Appeal!
- WELDS ALL Steels!
- Ideal for Repair & Maintenance jobs.
- Easy Arc Starting and Excellent Stability on Low O.C.V. Welding Machines.
- Not Recommended for Welding Cast Irons.

Typical All Weld Metal Mechanical Properties:
- 0.2% Proof Stress: 630 MPa
- Tensile Strength: 760 MPa
- Elongation: 25%
- CVN Impact Values: 30 J av @ +20°C

Typical All Weld Metal Analysis:
- C: 0.11%
- Mn: 0.60%
- Si: 0.88%
- Cr: 27.0%
- Ni: 9.10%
- P: 0.020%
- S: 0.011%

Comparative CIGWELD Products:
- Murex Speedex 312-16

Classifications:
- AS/NZS 4854: (new) B ES312-17
- AS/NZS 1553.3: (old) E312-17
- AWS/ASME-SFA A5.4: E312-17

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Easyweld Blister Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 300 57 40 – 80</td>
<td>2.5kg 15kg-6x2.5kg</td>
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<tr>
<td>3.2 350 30 75 – 110</td>
<td>2.5kg 15kg-6x2.5kg</td>
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<td>4.0 350 20 110 – 150</td>
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<td>611704</td>
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</tbody>
</table>

Castcraft 55

- Maintenance Welding of S.G. Cast Irons.
- Higher Strength Nickel / Iron Deposit.
- Easy starting and Stable Running on Portable 240V Welding Machines.
- Applications include the higher strength repair and maintenance welding of Spheroidal Graphite (S.G.) iron, austenitic cast iron, meehanites and a wide range of grey cast irons.

Typical All Weld Metal Mechanical Properties:
- Tensile Strength: 500 MPa
- Hardness: 220 HV30

Typical All Weld Metal Analysis:
- C: 0.95%
- Mn: 0.65%
- Si: 0.25%
- Al: 0.25%
- Fe: 53%
- Ni: Bal

Core Wire:
- Nickel Iron (55% Ni, 45% Fe)

Comparative CIGWELD Products:
- Nicore 55 Cast Iron Flux Cored Wire

Classifications:
- AWS/ASME-SFA A5.15: ENiFe-CI

Packaging and Operating Data:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 350 31 75 – 120</td>
<td>2.5kg 15kg-6 x 2.5kg</td>
<td>611723</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0 350 21 100 – 150</td>
<td>2.5kg 15kg-6 x 2.5kg</td>
<td>611724</td>
<td></td>
<td></td>
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</tbody>
</table>

Castcraft 100

- Maintenance Welding of Cast Irons.
- Soft, Ductile and Machineable Nickel Deposit.
- Easy starting and Stable Running on Portable 240V Welding Machines.
- Smoother Weld Deposit Surface Finish.
- Applications include the repair and reclamation of engine blocks, cylinder heads, differential housings, gear boxes, pump and machine housings and cast iron pulleys etc.

Typical All Weld Metal Mechanical Properties:
- Tensile Strength: 400 MPa
- Hardness: 170 HV30

Typical All Weld Metal Analysis:
- C: 1.0%
- Mn: 0.05%
- Si: 0.1%
- Al: 0.2%
- Fe: Bal

Core Wire:
- Nickel Iron (98% Ni)

Comparative CIGWELD Products:
- Nicore 55 Cast Iron Flux Cored Wire

Classifications:
- AWS/ASME-SFA A5.15: ENiFe-CI

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Easyweld Blister Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 300 49 55 – 85</td>
<td>2.5kg 15kg-6x2.5kg</td>
<td>611732</td>
<td></td>
<td></td>
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<tr>
<td>3.2 350 31 75 – 120</td>
<td>2.5kg 15kg-6x2.5kg</td>
<td>611733</td>
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</tr>
<tr>
<td>4.0 350 21 100 – 150</td>
<td>2.5kg 15kg-6x2.5kg</td>
<td>611734</td>
<td></td>
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</tbody>
</table>

Easyweld Blister Pack:
- 10 x 2.5mm/5 x 3.2mm rod Castcraft 100 Blister Pack 322217

AC (minimum 45 OCV) DC- polarity.
Cobalarc Hardfacing Electrodes

**Cobalarc Austex**
- Metal Enriched, Rutile Type Electrode.
- For Joining Dissimilar steels or as a Buffer Layer Prior to Hard Surfacing.
- Tough, Machinable Austenitic Stainless Steel Deposit.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.10%
- Mn: 1.50%
- Si: 0.90%
- Cr: 24.5%
- Ni: 9.3%

**Typical Weld Deposit Hardness:**
- All weld metal deposit: HRc 20, HV 30
- Hardness: 40, 400

**Finishing Recommendations:**
- Machinable with carbide tools

**Classesifications:**
- AS/NZS 2756: 1315-A4
- WTIA Tech. Note 4: 1315-A4

**Packaging and Operating Data:**
<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>380</td>
<td>20</td>
<td>105 – 140</td>
<td>5kg</td>
<td>15kg</td>
<td>613973</td>
</tr>
<tr>
<td>4.0</td>
<td>380</td>
<td>13</td>
<td>140 – 180</td>
<td>5kg</td>
<td>15kg</td>
<td>613974</td>
</tr>
<tr>
<td>5.0</td>
<td>450</td>
<td>7</td>
<td>170 – 210</td>
<td>5kg</td>
<td>15kg</td>
<td>613975</td>
</tr>
</tbody>
</table>

(AC (minimum 50 OCV) DC+ or DC- polarity.)

**Cobalarc Mangcraft**
- Austenitic Manganese Steel Electrode.
- For Building Up & Reinforcing 11-14% Manganese Steels.
- Tough and Impact Resistant Weld Deposit.
- Work Hardens Under Heavy Impact.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.60%
- Mn: 12.0%
- Si: 0.10%

**Typical Weld Deposit Hardness:**
- All weld metal deposit: HRc 15, HV 30
- Hardness: 43, 425

**Finishing Recommendations:**
- Machinable with carbide tools

**Comparable CIGWELD products:**
- Stoody Dynamang-O tubular wire

**Classesifications:**
- AS/NZS 2756: 1215-A4
- WTIA Tech. Note 4: 1215-A4

**Packaging and Operating Data:**
<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>380</td>
<td>17</td>
<td>130 – 170</td>
<td>5kg</td>
<td>15kg</td>
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<tr>
<td>5.0</td>
<td>450</td>
<td>10</td>
<td>150 – 200</td>
<td>5kg</td>
<td>15kg</td>
<td>611595</td>
</tr>
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</table>

(AC (minimum 55 OCV) DC+ or DC- polarity.)

**Cobalarc 350**
- Metal Enriched, Rutile Type Electrode.
- For Re-building Worn Steel Components.
- Tough, Machinable Low Carbon Martensitic Steel Deposit.
- For the manual arc build-up and surfacing of steel gear, shafts, rails, shovel pads, track links, rolls and wheels etc.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.07%
- Mn: 0.85%
- Si: 0.30%
- Cr: 1.85%
- Mo: 0.5%

**Typical Weld Deposit Hardness:**
- Single layer on mild steel: HRc 28, HV 30
- All weld metal deposit: 35, 350

**Finishing Recommendations:**
- Machinable

**Comparable CIGWELD products:**
- Stoody Super Build-up G/O tubular wire

**Classesifications:**
- AS/NZS 2576: 1435-B5
- WTIA Tech. Note 4: 1435-B5

**Packaging and Operating Data:**
<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>380</td>
<td>26</td>
<td>100 – 150</td>
<td>5kg</td>
<td>15kg</td>
<td>611143</td>
</tr>
<tr>
<td>4.0</td>
<td>380</td>
<td>17</td>
<td>140 – 200</td>
<td>5kg</td>
<td>15kg</td>
<td>611144</td>
</tr>
</tbody>
</table>

(AC (minimum 55 OCV) DC+ or DC- polarity.)
Cobalarc Hardfacing Electrodes

**Cobalarc 650**

- Metal Enriched, Rutile Type Electrode.
- For Re-building or Surfacing Worn Steel Components.
- Air Hardening, Crack Free, Martensitic Steel Deposit.
- Typical applications include the surfacing of agricultural components, shares, post hole augers, and other components.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.58%
- Mn: 1.1%
- Si: 0.6%
- Cr: 5.3%
- Mo: 0.25%

**Typical Weld Deposit Hardness:**
- HRC: 640

**Finishing Recommendations:**
- Not machinable - Grinding only

**Comparable CIGWELD products:**
- Stoody 965 G/O tubular wire
- AS/NZS 2576: 1855-B5/B7

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton Range (amps)</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>380</td>
<td>31</td>
<td>105 – 135</td>
<td>5kg</td>
<td>15kg - 3 x 5kg</td>
<td>611463</td>
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<tr>
<td>4.0</td>
<td>380</td>
<td>21</td>
<td>140 – 180</td>
<td>5kg</td>
<td>15kg - 3 x 5kg</td>
<td>611464</td>
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</tbody>
</table>

AC (minimum 55 OCV) DC+ or DC- polarity.

**Classifications:**
- AS/NZS 2756: 1855-A4
- WTIA Tech. Note 4: 1855-A4

**Cobalarc 750**

- Rutile type, AC/DC Hard Surfacing Electrode.
- Easy Arc Starting and Stable Running on Portable AC Welding Sets (45 O.C.V.).
- Air Hardening, Crack Free, Martensitic Steel Deposit.
- Typical applications include the surfacing of agricultural equipment and components including points, shares, post hole augers, riper teeth & tynes etc.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.58%
- Mn: 0.10%
- Si: 0.20%
- Cr: 5.5%
- Mo: 6.8%

**Finishing Recommendations:**
- Not machinable - Grinding only

**Comparable CIGWELD products:**
- Cobalarc 650 manual arc electrode
- AS/NZS 2576: 1855-A4

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton Range (amps)</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>380</td>
<td>26</td>
<td>95 – 130</td>
<td>5kg</td>
<td>15kg - 3 x 5kg</td>
<td>611473</td>
</tr>
<tr>
<td>4.0</td>
<td>380</td>
<td>17</td>
<td>120 – 170</td>
<td>5kg</td>
<td>15kg - 3 x 5kg</td>
<td>611474</td>
</tr>
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</table>

**Easyweld Blister Pack:**
- 10 x 3.2mm rod Cobalarc 750 Blister Pack
- AC (minimum 45 OCV) DC+ or DC- polarity.

**Classifications:**
- AS/NZS 2756: 1860-A4
- WTIA Tech. Note 4: 1860-A4

**Cobalarc Toolcraft**

- Secondary Hardening, Shock Resistant Properties.
- Crack Free Cr-Mo Steel Deposit for Repairing Blades, Dies, Punches etc.
- Also Suitable for General Hard Surfacing in Low Stress Abrasion Conditions.

**Typical All Weld Metal Deposit Analysis:**
- C: 0.58%
- Mn: 0.10%
- Si: 0.20%
- Cr: 5.5%
- Mo: 6.8%

**Finishing Recommendations:**
- Not machinable - Grinding only

**Packaging and Operating Data:**

<table>
<thead>
<tr>
<th>Electrode Size mm</th>
<th>Length mm</th>
<th>Approx No. Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton Range (amps)</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>300</td>
<td>58</td>
<td>65 – 90</td>
<td>20 Rod</td>
<td>–</td>
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<tr>
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<td>28</td>
<td>90 – 125</td>
<td>5kg</td>
<td>15kg - 3 x 5kg</td>
<td>611523</td>
</tr>
</tbody>
</table>

AC (minimum 55 OCV) DC+ or DC- polarity.

**Classifications:**
- AS/NZS 2756: 1560-A4
- WTIA Tech. Note 4: 1560-A4
Cobalarc CR70

- High Chromium Carbide Iron Deposit.
- Primary Chromium Iron Carbides in a Single Layer.
- Ideal for Coarse Abrasion and Low to Moderate Impact Loading.
- Typical applications of Cobalarc CR70 include the hard surfacing of crusher cones and mantles, swing hammers, bucket teeth and lips, dozer end plates and sugar mill rolls etc.

Note: 3.2mm and 4.00mm sizes can be used for vertical welding by depositing overlapping horizontal stringer passes.

Classifications:
AS/NZS 2756: 2355-A4
WTIA Tech. Note 4: 2355-A4

Typical Weld Deposit Analysis:
Single Layer on Mild Steel
C: 3.3% Mn: 1.5% Si: 1.0% Cr: 25%
All Weld Metal Deposit
C: 4.0% Mn: 1.8% Si: 1.2% Cr: 31%

Typical Weld Deposit Hardness:
HRC HV30
Single layer on mild steel 55 600
All weld metal deposit 59 690

Deposits contain Chromium Carbide with hardness up to 1,500 HV.

Finishing Recommendations:
Grinding only

Comparable CIGWELD products:
Stoody 101 HC-G/O tubular wire AS/NZS 2576: 2380-85/B7

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Range (amps)</th>
<th>Packet Carton Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size mm Length mm</td>
<td>Rods/kg</td>
<td></td>
</tr>
<tr>
<td>3.2 380 18</td>
<td>90 – 140 5kg 15kg - 3 x 5kg 613493</td>
<td></td>
</tr>
<tr>
<td>4.0 380 11</td>
<td>130 – 200 5kg 15kg - 3 x 5kg 613494</td>
<td></td>
</tr>
<tr>
<td>5.0 450 6</td>
<td>180 – 250 5kg 15kg - 3 x 5kg 613495</td>
<td></td>
</tr>
</tbody>
</table>

AC (minimum 50 OCV) DC+ or DC- polarity.

Cobalarc Borochrome

- Martensitic Chromium Carbide Iron Deposit.
- Ideal for Fine Particle (Wet or Dry) Abrasion and Low Impact Loading.
- Primary Chromium Iron Carbides in a Hard, Martensitic Matrix.
- Typical applications include the hard surfacing of sand chutes, dredge components, ripper shanks, screens, grizzly bars, scraper blades and bucket lips and teeth.

Classifications:
AS/NZS 2756: 2560-A4
WTIA Tech. Note 4: 2560-A4

Typical Weld Deposit Analysis:
Single Layer on Mild Steel
C: 2.7% Mn: 0.4% Si: 1.8%
Cr: 20.0% V: 1.4% B: 1.6%
All Weld Metal Deposit
C: 3.2% Mn: 0.4% Si: 2.4%
Cr: 24.0% V: 1.7% B: 1.2%

Typical Weld Deposit Hardness:
HRC HV30
Single layer on mild steel 58 680
All weld metal deposit 60 700

Deposits contain Chromium Carbide with hardness up to 1,500 HV.

Finishing Recommendations:
Grinding only

Comparable CIGWELD products:
Stoody Fineclad-O tubular wire AS/NZS 2576: 2565-B7

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Approx No.</th>
<th>Current Range (amps)</th>
<th>Packet Carton Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size mm Length mm</td>
<td>Rods/kg</td>
<td></td>
</tr>
<tr>
<td>4.0 380 11</td>
<td>140 – 180 5kg 15kg - 3 x 5kg 613964</td>
<td></td>
</tr>
<tr>
<td>5.0 450 6</td>
<td>170 – 210 5kg 15kg - 3 x 5kg 613965</td>
<td></td>
</tr>
</tbody>
</table>

AC (minimum 50 OCV) DC+ or DC- polarity.
Cobalarc Hardfacing Electrodes

### Cobalarc 1e
- Highly Aligned Extruded Electrode.
- High Chromium Carbide Iron Deposit.
- Ideal for Coarse Abrasion and Low to Moderate Impact Loading.
- For wear resistant overlays on austenitic manganese steels.

**Classifications:**
- AS/NZS 2756: 2360-A4
- WTIA Tech. Note 4: 2360-A4

**Typical All Weld Deposit Analysis:**
- C: 5.00%
- Mn: 1.10%
- Si: 1.3%
- Cr: 35.0%

**Typical Weld Deposit Hardness:**
- HRC HV30
  - Single layer on mild steel 58 660
  - All weld metal deposit 61 730

Deposits contain complex Chromium Carbides with hardness up to 1,500 HV.

**Finishing Recommendations:**
- Grinding only

**Comparable CIGWELD products:**
- Cobalarc CR70 extruded electrode AS/NZS 2576: 2355-A4
- Stoody 100 HC-G/O tubular wire AS/NZ 2576: 2380-B7

**Classifications:**
- AS/NZS 2756: 2460-A4
- WTIA Tech. Note 4: 2460-A4

**Typical All Weld Deposit Analysis:**
- C: 4.8%
- Mn: 1.1%
- Si: 1.4%
- Cr: 30.0%
- Ni: 0.5%
- Mo: 1.7%
- V: 0.2%

**Typical Weld Deposit Hardness:**
- HRC HV30
  - Single layer on mild steel 58 660
  - All weld metal deposit 63 780

Deposits contain complex Chromium Carbides with hardness up to 1,500 HV.

**Finishing Recommendations:**
- Grinding only

**Comparable CIGWELD products:**
- Stoody 143-O

### Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Electrode Size (mm)</th>
<th>Length (mm)</th>
<th>Rods/kg</th>
<th>Current Range (amps)</th>
<th>Packet</th>
<th>Carton</th>
<th>Part No.</th>
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</thead>
<tbody>
<tr>
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<td>10</td>
<td>130 – 190</td>
<td>5kg</td>
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<td>613210</td>
</tr>
<tr>
<td>5.0</td>
<td>450</td>
<td>5</td>
<td>170 – 260</td>
<td>5kg</td>
<td>15kg</td>
<td>613235</td>
</tr>
</tbody>
</table>

AC (minimum 55 OCV) DC+ or DC- polarity.

AC (minimum 55 OCV) DC+ or DC- polarity.
To assist you in selecting the most suitable alloy and process for the particular application, we have recommended below the alloy and process that would be most suitable for your use. Once you have selected the best alloy, refer to contents for detailed information on its characteristics, technical specifications, applications and procedure.

<table>
<thead>
<tr>
<th>Process</th>
<th>Comweld Alloy</th>
<th>Comweld Flux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joining copper, brass, bronze, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat T or *Tobin Bronze</td>
<td>*Copper &amp; Brass</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat N or *Nickel Bronze</td>
<td>*Copper &amp; Brass</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>Comweld Silicon Bronze</td>
<td>No flux</td>
</tr>
<tr>
<td>Soldering</td>
<td>96S Silver Solder</td>
<td>96S Soldering Flux</td>
</tr>
<tr>
<td>Silver Brazing</td>
<td>SBA115</td>
<td>G.P. Silver Brazing Flux</td>
</tr>
<tr>
<td></td>
<td>SBA356T</td>
<td>G.P. Silver Brazing Flux</td>
</tr>
</tbody>
</table>

| Joining Steel. | | |
| Oxy Acetylene Fusion Welding | Mild Steel, High Test | No flux |
| GTA Welding (TIG) | Comweld LW1, Super Steel | No flux |
| Braze Welding | Comcoat C | No flux |
| Braze Welding | Manganese Bronze | Copper & Brass |
| Soldering | 96S Silver Solder | 96S Soldering Flux |
| Silver Brazing | SBA 345T; 356T | G.P. Silver Brazing Flux |

| Repairing Cast Iron. | | |
| Oxy Acetylene Fusion Welding | Cast Iron | No Flux |
| GTA Welding (TIG) | Cast Iron | No flux |
| Braze Welding | Comcoat C | No flux |
| Braze Welding | Manganese Bronze | No flux |
| Braze Welding | Comcoat N | No flux |
| Braze Welding | Nickel Bronze | No flux |

| Joining Stainless Steel. | | |
| Oxy Acetylene Fusion Welding | Comweld 308L, 309L, 316L | No Flux |
| GTA Welding (TIG) | Comweld 308L, 309L, 316L | No flux |
| Soldering | 96S Silver Solder | 96S Soldering Flux |
| Silver Brazing | SBA 356T | G.P. Silver Brazing Flux |

| Joining Aluminium. | | |
| Oxy Acetylene Fusion Welding | AL1188, AL4043, AL4047 & AL5356 | Aluminium Welding Flux |
| GTA Welding (TIG) | AL1188, AL4043 & AL5356 | No flux |
To assist you in selecting the most suitable alloy and process for the particular application, we have recommended below the alloy and process that would be most suitable for your use. Once you have selected the best alloy, refer to contents for detailed information on its characteristics, technical specifications, applications and procedure.

<table>
<thead>
<tr>
<th>Process</th>
<th>Comweld Alloy</th>
<th>Comweld Flux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joining copper, brass, bronze, etc.</td>
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<td></td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat T or *Tobin Bronze</td>
<td>*Copper &amp; Brass</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat N or *Nickel Bronze</td>
<td>*Copper &amp; Brass</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>Comweld Silicon Bronze</td>
<td>No flux</td>
</tr>
<tr>
<td>Soldering</td>
<td>96S Silver Solder</td>
<td>96S Soldering Flux</td>
</tr>
<tr>
<td>Silver Brazing</td>
<td>SBA115</td>
<td>G.P. Silver Brazing Flux</td>
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<tr>
<td></td>
<td>SBA356T</td>
<td>G.P. Silver Brazing Flux</td>
</tr>
<tr>
<td>Joining Steel.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxy Acetylene Fusion Welding</td>
<td>Mild Steel, High Test</td>
<td>No flux</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>Comweld LW1, Super Steel</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat C</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Manganese Bronze</td>
<td>Copper &amp; Brass</td>
</tr>
<tr>
<td>Soldering</td>
<td>96S Silver Solder</td>
<td>96S Soldering Flux</td>
</tr>
<tr>
<td>Silver Brazing</td>
<td>SBA 345T; 356T</td>
<td>G.P. Silver Brazing Flux</td>
</tr>
<tr>
<td>Repairing Cast Iron.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxy Acetylene Fusion Welding</td>
<td>Cast Iron</td>
<td>No Flux</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>Cast Iron</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat C</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Manganese Bronze</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Comcoat N</td>
<td>No flux</td>
</tr>
<tr>
<td>Braze Welding</td>
<td>Nickel Bronze</td>
<td>No flux</td>
</tr>
<tr>
<td>Joining Stainless Steel.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxy Acetylene Fusion Welding</td>
<td>Comweld 308L, 309L, 316L</td>
<td>No Flux</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>Comweld 308L, 309L, 316L</td>
<td>No Flux</td>
</tr>
<tr>
<td>Soldering</td>
<td>96S Silver Solder</td>
<td>96S Soldering Flux</td>
</tr>
<tr>
<td>Silver Brazing</td>
<td>SBA 356T</td>
<td>G.P. Silver Brazing Flux</td>
</tr>
<tr>
<td>Joining Aluminium.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxy Acetylene Fusion Welding</td>
<td>AL1188, AL4043, AL4047 &amp; AL5356</td>
<td>Aluminium Welding Flux</td>
</tr>
<tr>
<td>GTA Welding (TIG)</td>
<td>AL1188, AL4043 &amp; AL5356</td>
<td>No flux</td>
</tr>
</tbody>
</table>
**COMWELD LW1-6**

- Copper Coated, Low Carbon Steel Rod for Gas TIG & Oxy Welding Applications.
- End stamped with “ER70S-6” for easy I.D.
- Recommended for the TIG welding of steel pipes, plates and castings with a tensile strength in the 500 MPa class.

**Typical Weld Deposit Properties:**
- **Yield Stress:** 400 MPa
- **Tensile Strength:** 500 MPa
- **Elongation:** 29%
- **CVN Impact Values:** 100J av@20˚C

**Typical Rod Analysis:**
- C: 0.08%
- Mn: 1.16%
- Si: 0.75%
- S: 0.010%
- P: 0.015%
- Fe: Balance

**Joining process:**
- Gas (fission) and Gas Tungsten Arc (TIG) welding

**Comparable CIGWELD Products:**
- Autocraft LW1-6 GMAW wire
- AWS A5.18: ER70S-4

<table>
<thead>
<tr>
<th>Rod Size</th>
<th>Pack</th>
<th>Approx</th>
<th>Part No.</th>
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</thead>
<tbody>
<tr>
<td>1.6 x 915</td>
<td>5kg pack</td>
<td>70</td>
<td>321417</td>
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<tr>
<td>2.4 x 915</td>
<td>5kg pack</td>
<td>31</td>
<td>321418</td>
</tr>
</tbody>
</table>

**COMWELD Super Steel**

- Low Carbon Steel Filler Rod for Gas Tungsten Arc (TIG) Welding.
- Triple Deoxidised for Superior Weld Deposit Quality and Resistance to Porosity.
- End Stamped with AWS Class ER70S-2.
- Ideal for TIG welding rusty or mill scaled plates and pipes and the root pass welding of pipes, tanks and heavy walled joints.

**Typical Weld Deposit Properties:**
- **Yield Stress:** 425 MPa
- **Tensile Strength:** 520 MPa
- **Elongation:** 34%
- **CVN Impact Values:** 150J av@-29˚C

**Typical Rod Analysis:**
- C: 0.06%
- Mn: 1.08%
- Si: 0.52%
- Ti: 0.08%
- Zr: 0.07%
- Al: 0.08%
- S: 0.007%
- P: 0.008%
- Fe: Balance

**Joining process:**
- Gas Tungsten Arc (TIG) welding

**Comparable CIGWELD Products:**
- Autocraft Super Steel GMAW wire
- AWS A5.18: ER70S-2

<table>
<thead>
<tr>
<th>Rod Size</th>
<th>Pack</th>
<th>Approx</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 915</td>
<td>5kg tube</td>
<td>70</td>
<td>321370</td>
</tr>
<tr>
<td>2.4 x 915</td>
<td>5kg tube</td>
<td>31</td>
<td>321373</td>
</tr>
</tbody>
</table>

**COMWELD CrMo1**

- Nominal 1 1/4Cr 1/2Mo steel TIG rod.
- End Stamped with AWS Class ER80S-B2 for Easy Identification.
- For the Gas Tungsten Arc (TIG) Welding of matching Cr - Mo Creep Resistant Steels for Elevated Temperature and Corrosive Service.

**Typical Weld Metal Mechanical Properties:**
- **Welding Grade Argon:** 0.2% Proof Stress 500 MPa
- **Tensile Strength:** 600 MPa
- **Elongation (in 2 inches):** 20%
- **CVN Impact Values:** 60J av@20˚C
- **Post weld heat treated at 620˚C as required by AWS A5.28**

**Typical Rod Analysis:**
- C: 0.09%
- Mn: 0.60%
- Si: 0.60%
- Cr: 1.30%
- Mo: 0.50%
- P: 0.015%
- S: 0.010%
- Fe: Balance

**Comparable CIGWELD Products:**
- Alloycraft 80-B2 electrode
- AWS A5.5: E8018-B2
- Autocraft CrMo1 GMAW wire
- AWS A5.28: ER80S-B2

<table>
<thead>
<tr>
<th>Rod Size</th>
<th>Pack</th>
<th>Approx</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4 x 915</td>
<td>5kg tube</td>
<td>31</td>
<td>321379</td>
</tr>
</tbody>
</table>
**COMWELD CrMo2**

- Nominal 2 1/2Cr1Mo steel TIG rod.
- End Stamped with AWS Class ‘ER90S-B3’ for Easy Identification.
- For the Gas Tungsten Arc (TIG) Welding of Cr-Mo and Cr-Mo-V Creep Resistant Steels for Elevated Temperature and Corrosive Service.

**Typical All Weld Metal Mechanical Properties:**
- Welding Grade Argon: 0.2% Proof Stress 560 MPa
- Tensile Strength 670 MPa
- Elongation (in 2 inches) 18%
- CVN Impact Values 60J av @+20˚C
- Post weld heat treated at 690˚C as required by AWS A5.28

**Typical Rod Analysis:**
- C: 0.08%
- Mn: 0.70%
- Si: 0.60%
- Cr: 2.50%
- Mo: 1.00%
- P: 0.015%
- S: 0.010%
- Fe: Balance

**Comparable CIGWELD Products:**
- Satincrome 308L-17 electrode
  AWS A5.4: E308L-17
- Autocraft 308LSi GMAW wire
  AWS A5.9: ER308LSi
- Verti-Cor 308LT FCAW wire
  AWS A5.22: E308LT1-1/4

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size mm</th>
<th>Pack Weight Type Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4 x 915</td>
<td>5kg tube</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>321383</td>
</tr>
</tbody>
</table>

---

**COMWELD 308L**

- Resealable 5kg Plastic Tube.
- Suitable for Gas and GTA (TIG) Welding.
- End Stamped with AS / AWS Class ‘308L’.
- DARK BLUE COLOUR CODED Label for Instant I.D.

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress 450 MPa
- Tensile Strength 650 MPa
- Approx. melting point 1400˚C
- Weld metal density 7.95 gms/cm³
- Weld metal microstructure Austenite with 5-8% ferrite

**Typical Rod Analysis:**
- C: 0.015%
- Mn: 1.90%
- Si: 0.50%
- Cr: 19.90%
- Ni: 9.75%
- P: 0.020%
- S: 0.005%
- Fe: Balance

**Comparable CIGWELD Products:**
- Satincrome 308L-17 electrode
  AWS A5.4: E308L-17
- Autocraft 308LSi GMAW wire
  AWS A5.9: ER308LSi
- Verti-Cor 308LT FCAW wire
  AWS A5.22: E308LT1-1/4

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size mm</th>
<th>Pack Weight Type Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 1000</td>
<td>5kg tube</td>
<td>69</td>
</tr>
<tr>
<td>2.4 x 1000</td>
<td>5kg tube</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>321407</td>
</tr>
</tbody>
</table>

---

**COMWELD 309L**

- Resealable 5kg Plastic Tube.
- Suitable for Gas and GTA (TIG) Welding of highly alloyed 309 or 309L type stainless steel.
- End Stamped with AS / AWS Class ‘309L’.
- RED COLOUR CODED Pack Label for Instant I.D.
- Also suitable for the dissimilar joining of other 300 series austenitic stainless steels to ferritic steels.

**Typical All Weld Metal Mechanical Properties:**
- 0.2% Proof Stress 440 MPa
- Tensile Strength 590 MPa
- Approx. melting point 1400˚C
- Weld metal density 7.95 gms/cm³
- Weld metal microstructure Austenite with 15-20% ferrite

**Typical Rod Analysis:**
- C: 0.015%
- Mn: 1.90%
- Si: 0.45%
- Cr: 23.5%
- Ni: 13.5%
- P: 0.020%
- S: 0.005%
- Fe: Balance

**Comparable CIGWELD Products:**
- Satincrome 309Mo-17 electrode
  AWS A5.4: E309Mo-17
- Autocraft 309LSi GMAW wire
  AWS A5.9: ER309LSi
- Verti-Cor 309LT FCAW wire
  AWS A5.22: E309LT1-1/4

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size mm</th>
<th>Pack Weight Type Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 1000</td>
<td>5kg tube</td>
<td>69</td>
</tr>
<tr>
<td>2.4 x 1000</td>
<td>5kg tube</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>321404</td>
</tr>
</tbody>
</table>
**COMWELD 316L**

- Resealable 5kg Plastic Tube.
- Suitable for Gas and GTA (TIG) Welding of Molybdenum bearing stainless steels; in particular matching 316 and 316L alloys.
- End Stamped with AS / AWS Class ‘316L’.
- GOLD COLOUR CODED Pack Label for Instant I.D.
- Also suitable for the general welding of other 300 series stainless steels including 302 and 304; as well as ferritic stainless steels grades such as 409, 444 and 3Cr12.

**Classifications:**

AS/NZS 1167.2: R316L  
AWS/ASME-SFA A5.9: ER316L

**Typical All Weld Metal Mechanical Properties:**

- 0.2% Proof Stress: 470 MPa
- Tensile Strength: 640 MPa
- Approx. melting point: 1400°C
- Weld metal density: 7.95 gms/cm³
- Weld metal microstructure: Austenite with 7-10% ferrite

**Typical Rod Analysis:**

- C: 0.012%
- Mn: 1.57%
- Si: 0.50%
- Cr: 19.00%
- Ni: 12.6%
- Mo: 2.5%
- P: 0.015%
- S: 0.001%
- Fe: Balance

**Comparable CIGWELD Products:**

- Satincrome 316L-17 electrode (AWS A5.4: E316L-17)
- Murex Speedex 316L (AWS A5.4: E316L-16)
- Autocraft 316LSi GMAW wire (AWS A5.9: ER316LSi)
- Verti-Cor 316LT FCAW wire (AWS A5.20: E316LT1-1/4)

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size mm</th>
<th>Pack Weight/Type</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 1000</td>
<td>5kg tube</td>
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<td>321400</td>
</tr>
<tr>
<td>2.4 x 1000</td>
<td>5kg tube</td>
<td>30</td>
<td>321401</td>
</tr>
</tbody>
</table>

**COMWELD Galvanising Bar**

- Strong corrosion resistant alloy.
- Used where any welding of galvanised parts is required.
- Can be used as a pre-treatment to produce base metals.

**Typical Properties:**

- Approx. melting point: 300°C

**Typical Rod Analysis:**

- Pb: 57.50% (Lead)
- Sn: 32.5% (Tin)
- Zn: 10.00% (Zinc)

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size mm</th>
<th>Pack Weight/Type</th>
<th>Easyweld Handipack</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3 x 500</td>
<td>2.5kg pack</td>
<td>–</td>
<td>321695</td>
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<tr>
<td>6.3 x 500</td>
<td>–</td>
<td>2 rod handipack</td>
<td>322985</td>
</tr>
</tbody>
</table>
**COMWELD AL1100**

- 99.88% Pure Aluminium Alloy Rod.
- Suitable for Gas Welding and Gas Tungsten Arc (GTAW / TIG) Welding Applications.
- Embossed with AS / AWS Class ‘1050’.
- For the joining of selected high purity 1XXX series Aluminium sheets and plates used extensively in the electrical and chemical industries.

**Classifications:**
- AS/NZS 1167.2: R1100 (nearest equivalent)
- AWS/ASME-SFA A5.10: R1050

**Weld Deposit Properties:**
- Tensile strength: 75 MPa
- Approx. melting point: 660˚C
- Post-anodised colour tint: Clear

**Rod Analysis Limits:**
- Single values are maximum allowable, unless otherwise stated
- Si: 0.06%  Fe: 0.26%  Cu: 0.005%
- Mn: 0.01%  Mg: 0.01%  Zn: 0.03%
- Ti: 0.01%  Others each: 0.01%
- Al: 99.6% min

**Comparable CIGWELD Products:**
- Autocraft AL1050 GMAW wire

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size (mm)</th>
<th>Packing</th>
<th>Carton Size</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 914</td>
<td>2.5kg pack</td>
<td>15kg</td>
<td>185</td>
<td>322600</td>
</tr>
<tr>
<td>2.4 x 914</td>
<td>2.5kg pack</td>
<td>15kg</td>
<td>82</td>
<td>322601</td>
</tr>
</tbody>
</table>

**COMWELD AL4043**

- Aluminium - 5% Silicon Alloy Rod.
- Suitable for Gas Welding and Gas Tungsten Arc (GTAW / TIG) Welding Applications.
- Embossed with AS / AWS Class ‘4043’.
- For the repair welding (fractures and blow holes etc) of selected aluminium alloy castings

**Classifications:**
- AS/NZS 1167.2: R4043
- AWS/ASME-SFA A5.10: R4043

**Weld Deposit Properties:**
- Tensile strength: 110 MPa
- Approx. melting point: 630˚C
- Post-anodised colour tint: Grey

**Rod Analysis Limits:**
- Single values are maximum allowable, unless otherwise stated
- Si: 4.5-6.0%  Fe: 0.80%  Cu: 0.30%
- Mn: 0.05%  Mg: 0.05%  Zn: 0.10%
- Ti: 0.20%  Others each: 0.15%
- Al: Balance

**Comparable CIGWELD Products:**
- Autocraft AL4043 GMAW wire

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size (mm)</th>
<th>Packing</th>
<th>Carton Size</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 1000</td>
<td>2.5kg pack</td>
<td>15kg</td>
<td>185</td>
<td>321610</td>
</tr>
<tr>
<td>2.4 x 1000</td>
<td>2.5kg pack</td>
<td>15kg</td>
<td>82</td>
<td>321611</td>
</tr>
<tr>
<td>3.2 x 1000</td>
<td>2.5kg pack</td>
<td>15kg</td>
<td>46</td>
<td>321612</td>
</tr>
</tbody>
</table>

**COMWELD AL4047**

- Aluminium - 10% Silicon Alloy Rod.
- Suitable for Gas Welding and Gas Tungsten Arc (GTAW / TIG) Welding Applications.
- Embossed with AS / AWS Class ‘4047’.
- Used extensively for the brazing of many types of Aluminium alloy sheets, extruded shapes and castings.

**Classifications:**
- AS/NZS 1167.2: R4047
- AWS/ASME-SFA A5.10: R4047
- AWS/ASME-SFA A5.8: BAISi-4

**Weld Deposit Properties:**
- Tensile strength: 150 MPa
- Approx. melting point: 577-582˚C
- Post-anodised colour tint: Grey-Black

**Rod Analysis Limits:**
- Single values are maximum allowable, unless otherwise stated
- Si: 11.0-13.0%  Fe: 0.80%  Cu: 0.30%
- Mn: 0.15%  Mg: 0.10%  Zn: 0.20%
- Total others each: 0.15%
- Al: Balance

**Comparable CIGWELD Products:**
- Autocraft AL4043 GMAW wire

**Packaging Data:**

<table>
<thead>
<tr>
<th>Rod Size (mm)</th>
<th>Packing</th>
<th>Carton Size</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
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<tbody>
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<td>2.5kg pack</td>
<td>15kg</td>
<td>185</td>
<td>321620</td>
</tr>
<tr>
<td>2.4 x 915</td>
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<td>15kg</td>
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<td>46</td>
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</tr>
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</table>
Gas & TIG Welding Consumables

COMWELD AL5356

- Aluminium - 5% Magnesium Alloy Rod.
- Suitable for Gas Welding and Gas Tungsten Arc (GTAW/TIG) Welding Applications.
- Embossed with ‘AS/AWS Class 5356’.
- Produces intermediate deposit strength and good ductility and corrosion resistance for the welding of a wide range of 3XXX, 5XXX, 6XXX and 5XX Aluminium alloys.

Weld Deposit Properties:
- Tensile strength: 270 MPa
- Approx. melting point: 640°C
- Post anodised colour tint: White

Rod Analysis Limits:
- Single values are maximum allowable, unless otherwise stated
- Si: 0.25%
- Fe: 0.40%
- Cu: 0.10%
- Mn: 0.05-0.20%
- Mg: 4.5-5.5%
- Cr: 0.05-0.20%
- Zn: 0.10%
- Ti: 0.05-0.20%
- Total others: 0.15%
- Al: balance

Comparable CIGWELD Products:
- Autocraft 5356 GMAW wire
- AWS A5.10: ER5356

Classifications:
- AS/NZS 1167.2: RS356
- AWS/ASME-SFA A5.10: RS356

COMWELD General Purpose, Cast Iron Rod

- A High Strength, General Purpose, Cast Iron Alloy for Joining and Building up Grey Cast Iron Castings.
- Machinable Weld Deposit.

Weld Deposit Properties:
- Tensile strength: 230 MPa
- Approx. melting point: 1150°C

Typical Rod Analysis:
- C: 3.37%
- Mn: 0.75%
- Si: 3.25%
- S: 0.008%
- P: 0.011%
- Fe: Balance

Joining Process: Gas (fusion) and Gas Tungsten Arc (TIG) Welding

Tip Colour: Blue

Classifications:
- AS/NZS 1167.2: RC11

Packaging Data:

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<tr>
<td>5.0 x 700</td>
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<td>–</td>
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<td>321420</td>
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</tbody>
</table>

COMWELD Silicon Bronze Rod

- Premium Quality Deoxidised Silicon - Bronze alloy.
- Recommended for the Braze Welding and GTA (TIG) welding of Copper Silicon alloys (Everdur and Cusilman).
- CANARY YELLOW End Tip Colour.
- Produces excellent joints on copper, brass and copper-zinc sheet, tube and extruded section.

Weld Deposit Properties:
- Tensile strength: 370 MPa
- Approx. melting point: 970-1020°C
- Weld metal density: 8.85 gms/cm³
- Hardness: 90 HV (90HB)

Typical Rod Analysis:
- Fe: 0.25%
- Mn: 1.00%
- Pb: 0.02%
- Sn: 3.40%
- Zn: 0.90%
- Cu: Balance

Joining Process: Gas (fusion) and Gas Tungsten Arc (TIG) Welding

Comparable CIGWELD Products:
- Autocraft Silicon Bronze

Classifications:
- AS/NZS 1167.1: AS/NZS 1167.2: R Cu Si-A
- AWS/ASME-SFA A5.7: R Cu Si-A (UNS No. C65600)

Packaging Data:

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<th>Part No.</th>
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<td>19</td>
<td>321295</td>
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</table>
COMWELD Manganese Bronze Rod

- General Purpose Brazing Alloy.
- Recommended for Braze Welding of Steels and Cast and Malleable Irons.
- Not Suitable for Copper Pipes in Hot Water Systems.
- BLUE End Tip Colour for Instant I.D.

Typical Weld Deposit Properties:
- Tensile Strength: 460 MPa
- 0.2% Proof Stress: 165 MPa
- Elongation: 35%
- Approx. melting point: 890°C
- Weld metal density: 8.30 gms/cm³

Joining Process: Gas (Braze) Welding only

Comparable CIGWELD Products:
- Comcoat C Flux Coated Manganese Bronze AS 1167.1 & 2: R Cu Zn-C

Typical Rod Analysis:
- Zn: 40.5%
- Mn: 0.10%
- Si: 0.10%
- Sn: 1.0%
- Fe: 0.50%
- Cu: Balance

Classifications:
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-C
- AWS/ASME-SFA A5.8/A5.27: RB Cu Zn-C

Packaging Data:

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<td>–</td>
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<td>5.0 x 750</td>
<td>5</td>
<td>5kg pack</td>
<td>–</td>
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<td>321203</td>
</tr>
<tr>
<td>6.3 x 750</td>
<td>5</td>
<td>5kg pack</td>
<td>–</td>
<td>5</td>
<td>321204</td>
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</table>

COMWELD Tobin Bronze Rod

- Low Strength Copper - Zinc Brazing Alloy.
- Recommended for the Fusion or Braze Welding of Selected brasses and Bronzes.
- Suitable for Low Strength Brazing of Steels.
- Not Suitable for Cast Irons.
- WHITE End Tip Colour for Instant I.D.

Typical Weld Deposit Properties:
- Tensile Strength: 400 MPa
- 0.2% Proof Stress: 110 MPa
- Elongation: 45%
- Approx. melting point: 900°C
- Weld metal density: 8.41 gms/cm³

Joining Process: Gas (Fusion and Braze) Welding only

Comparable CIGWELD Products:
- Comcoat T Flux Coated Tobin Bronze AS 1167.1 & 2: R Cu Zn-A

Typical Rod Analysis:
- Zn: 37.5%
- Si: 0.30%
- Sn: 0.50%
- Cu: Balance

Classifications:
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-A
- AWS/ASME-SFA A5.8/A5.27: RB Cu Zn-A

Packaging Data:

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<th>Weight (kg)</th>
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<tr>
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<td>15 rod handipack</td>
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<tr>
<td>6.3 x 750</td>
<td></td>
<td>5kg pack</td>
<td>–</td>
<td>10</td>
<td>321250</td>
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</tbody>
</table>

COMWELD Nickel Bronze Rod

- High Strength, Wear Resistant Brazing Alloy.
- High Strength Braze Welding of Steels and Cast or Malleable Irons.
- Fusion Welding of Copper Based Alloys of Similar Composition.
- CRIMSON End Tip Colour for Instant I.D.

Typical Weld Deposit Properties:
- Tensile Strength: 560 MPa
- 0.2% Proof Stress: 250 MPa
- Elongation: 18%
- Hardness: 170 HV
- Approx. melting point: 910°C
- Weld metal density: 8.39 gms/cm³

Joining Process: Gas (Fusion and Braze) Welding only

Comparable CIGWELD Products:
- Comcoat N Flux Coated Tobin Bronze AS 1167.1 & 2: R Cu Zn-D

Typical Rod Analysis:
- Zn: 43.5%
- Mn: 0.20%
- Si: 0.20%
- Ni: 10.0%
- Cu: Balance

Classifications:
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-D
- AWS/ASME-SFA A5.8/A5.27: RB Cu Zn-D

Packaging Data:

<table>
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<tr>
<th>Rod Size (mm) x Length (mm)</th>
<th>Weight (kg)</th>
<th>Pack/Type</th>
<th>Carton Size</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
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<td>–</td>
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<tr>
<td>5.0 x 750</td>
<td>5</td>
<td>5kg pack</td>
<td>–</td>
<td>8</td>
<td>321226</td>
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</tbody>
</table>
**COMWELD Comcoat T**

- Flux Coated Tobin Bronze Rod.
- Recommended for the 'Self Fluxing' Fusion Braze Welding of Selected Brasses & Bronzes.
- Suitable for Low Strength brazing of Steels.
- Not Suitable for Cast Irons.
- WHITE Flux Colour for Instant I.D.

**Typical Weld Deposit Properties:**
- Tensile Strength: 400 MPa
- 0.2% Proof Stress: 110 MPa
- Elongation: 45%
- Approx. melting point: 900°C
- Weld metal density: 8.41 gms/cm³

**Joining Process:**
- Gas (Fusion and Braze) Welding only

**Comparable CIGWELD Products:**
- Comcoat Tobin Bronze Bare Rod
  - AS 1167.1 & 2: R Cu Zn-A

**Classifications:**
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-A
- AWS/ASME-SFA A5.8/A5.27: RB Cu Zn-A

**Packaging Data:**

<table>
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<th>Pack Weight/Type</th>
<th>Easyweld Handipack</th>
<th>Blister Pack</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
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<tbody>
<tr>
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<td>–</td>
<td>–</td>
<td>5 rod blister pack</td>
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<td>3.2 x 750</td>
<td>5kg pack</td>
<td>–</td>
<td>–</td>
<td>19</td>
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</tr>
</tbody>
</table>

**COMWELD Comcoat N**

- Flux Coated Nickel Bronze Rod.
- High Strength, Excellent Wear Resistance.
- High Strength Braze Welding of Steels and Cast or Malleable Irons.
- Fusion Welding of Copper Based Alloys of Similar Composition.
- PINK Flux Colour for Instant I.D.

**Typical Weld Deposit Properties:**
- Tensile Strength: 560 MPa
- 0.2% Proof Stress: 250 MPa
- Elongation: 18%
- Hardness: 170 Hv
- Approx. melting point: 910°C
- Weld metal density: 8.39 gms/cm³

**Joining Process:**
- Gas (Fusion and Braze) Welding only

**Comparable CIGWELD Products:**
- Comcoat Nickel Bronze Bare Rod
  - AS 1167.1 & 2: R Cu Zn-D

**Classifications:**
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-D
- AWS/ASME-SFA A5.8/A5.27: RB Cu Zn-D

**Packaging Data:**

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<th>Rod Size</th>
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<th>Blister Pack</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
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</thead>
<tbody>
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<td>–</td>
<td>3 rod pack</td>
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<td>–</td>
<td>–</td>
<td>322209</td>
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<tr>
<td>3.2 x 750</td>
<td>2.5kg pack</td>
<td>–</td>
<td>–</td>
<td>19</td>
<td>321215</td>
</tr>
<tr>
<td>3.2 x 750</td>
<td>–</td>
<td>8 rod handipack</td>
<td>–</td>
<td>–</td>
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</tbody>
</table>

**COMWELD Comcoat C**

- Flux Coated Manganese Bronze Rod.
- General Purpose Brazing Alloy.
- Recommended for Braze Welding of Steels and Cast and Malleable Irons.
- Not Suitable for Copper Pipes in Hot Water Systems.
- BLUE Flux Colour for Instant I.D.

**Typical Weld Deposit Properties:**
- Tensile Strength: 460 MPa
- 0.2% Proof Stress: 165 MPa
- Elongation: 35%
- Approx. melting point: 890°C
- Weld metal density: 8.39 gms/cm³

**Joining Process:**
- Gas (Braze) Welding only

**Comparable CIGWELD Products:**
- Comcoat Manganese Bronze Bare Rod
  - AS 1167.1 & 2: R Cu Zn-C

**Classifications:**
- AS/NZS 1167.1; AS/NZS 1167.2: R Cu Zn-C
- AWS/ASME-SFA A5.8/A5.7: RB Cu Zn-C

**Packaging Data:**

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<th>Blister Pack</th>
<th>Approx Rods/kg</th>
<th>Part No.</th>
</tr>
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<tbody>
<tr>
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<td>–</td>
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<td>50</td>
<td>321191</td>
<td></td>
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<tr>
<td>2.4 x 500</td>
<td>–</td>
<td>20 rod handipack</td>
<td>–</td>
<td>–</td>
<td>322029</td>
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<tr>
<td>2.4 x 500</td>
<td>–</td>
<td>–</td>
<td>5 rod blister</td>
<td>–</td>
<td>322236</td>
</tr>
<tr>
<td>3.2 x 750</td>
<td>5kg pack</td>
<td>–</td>
<td>–</td>
<td>19</td>
<td>321215</td>
</tr>
<tr>
<td>3.2 x 750</td>
<td>–</td>
<td>15 rod handipack</td>
<td>–</td>
<td>–</td>
<td>322022</td>
</tr>
</tbody>
</table>
### COMWELD SBA 115

- **Low Silver, Cadmium free silver brazing alloy**
- **Alloy group 1: Silver, Copper, Phosphorous self fluxing alloys for brazing of Copper to Copper alloys**
- **Not suitable for Ferrous metals**
- **Use with flux on Copper alloys**
- **TAN end tip colour**

#### Technical Data:
- **Silver content**: 15%
- **Typical melting range (˚C)**: 645-700˚C
- **Brazing temp. for complete fluidity**: 705˚C

#### Typical Wire Analysis:
- **Ag**: 15.0%
- **Cu**: 79.9%
- **P**: 5.0%
- **Cd**: 0.05%
- **Zn**: 0.50%

*Cadmium and Zinc may be present only as trace element impurities*

#### Silver Brazing Flux if required:
- **GP Silver Brazing flux**

#### Classification:
- **AS/NZS 1167.1:** B4
- **AWS/ASME-SFA A5.8:** BCuP-5

#### Packaging Data:

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<td>Standard pack</td>
<td>1kg</td>
<td>22</td>
<td>320506</td>
</tr>
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</table>

### COMWELD SBA 345T

- **Cadmium free high silver brazing alloy**
- **Alloy group 3: Silver, Copper, Zinc, Tin alloys for intermediate to low temperature brazing of all metals**
- **Not suitable for Aluminium, Magnesium & Zinc based alloys**
- **Safe for use on food carrying containers, vessels and food processing equipment**
- **To be used with flux**
- **ROCK end tip colour**

#### Technical Data:
- **Silver content**: 45%
- **Typical melting range (˚C)**: 640-680˚C
- **Brazing temp. for complete fluidity**: 715˚C

#### Typical Wire Analysis:
- **Ag**: 45.0%
- **Cu**: 27.5%
- **Zn**: 25.0%
- **Sn**: 2.5%
- **Cd**: 0.05%

*Cadmium may be present only as trace element impurities*

#### Silver Brazing Flux if required:
- **Silver Brazing flux No. 2**
- **Comparable COMWELD Cadmium bearing alloys:** COMWELD SBA 245

#### Classification:
- **AS/NZS 1167.1:** A19
- **AWS/ASME-SFA A5.8:** BAg-36

#### Packaging Data:

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<th>Approx Rods/kg</th>
<th>Part No.</th>
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<tr>
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<td>Standard pack</td>
<td>0.5kg</td>
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<td>320525</td>
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<td>2.4 x 750</td>
<td>Standard pack</td>
<td>0.5kg</td>
<td>33</td>
<td>320526</td>
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</table>

### COMWELD SBA 356T

- **Cadmium free high silver brazing alloy**
- **Alloy group 3: Silver, Copper, Zinc, Tin alloys for intermediate to low temperature brazing of all metals**
- **Not suitable for Aluminium, Magnesium & Zinc based alloys**
- **Safe for use on food carrying containers, vessels and food processing equipment**
- **To be used with flux**
- **WHITE end tip colour**

#### Technical Data:
- **Silver content**: 56%
- **Typical melting range (˚C)**: 625-650˚C
- **Brazing temp. for complete fluidity**: 660˚C

#### Typical Wire Analysis:
- **Ag**: 56.0%
- **Cu**: 22.0%
- **Sn**: 5.0%
- **Cd**: 0.05%

*Cadmium may be present only as trace element impurities*

#### Silver Brazing Flux if required:
- **GP Silver Brazing flux**
- **Comparable COMWELD Cadmium bearing alloys:** COMWELD SBA 245

#### Classification:
- **AS/NZS 1167.1:** A2
- **AWS/ASME-SFA A5.8:** BAg-7

#### Packaging Data:

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<th>Part No.</th>
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<td>2.4 x 750</td>
<td>Standard pack</td>
<td>0.5kg</td>
<td>33</td>
<td>320528</td>
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</table>
COMCOAT Silver 356T

- Cadmium free high silver brazing alloy
- Alloy group 3: Silver, Copper, Zinc, Tin alloys for intermediate to low temperature brazing of all metals
- Not suitable for Aluminium, Magnesium & Zinc based alloys
- Extruded flux coated version of Cornweld SBA 356T
- Safe for use on food carrying containers, vessels and food processing equipment
- PINK flux colour

Technical Data:

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<tr>
<td>Typical melting range (˚C)</td>
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</tr>
<tr>
<td>Brazing temp. for complete fluidity</td>
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Typical Wire Analysis:

<table>
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<th>Component</th>
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<td>Ag:</td>
<td>56.0%</td>
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<tr>
<td>Cu:</td>
<td>22.0%</td>
</tr>
<tr>
<td>Zn:</td>
<td>16.95%</td>
</tr>
<tr>
<td>Sn:</td>
<td>5.0%</td>
</tr>
<tr>
<td>Cd*:</td>
<td>0.05%</td>
</tr>
</tbody>
</table>

*Cadmium may be present only as trace element impurities

Silver Brazing Flux if required: No flux required

Comparable COMWELD Cadmium bearing alloy: Corncoat Silver 45

Classifications:

<table>
<thead>
<tr>
<th>AS/NZS 1167.1:</th>
<th>A2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS/ASME-SFA A5.8:</td>
<td>BAg-7</td>
</tr>
</tbody>
</table>

Packaging Data:

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Pack Size</th>
<th>Pack Approx</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 500</td>
<td>1kg</td>
<td>1kg</td>
<td>88</td>
</tr>
<tr>
<td>1.6 x 500</td>
<td>5 rods</td>
<td>5 rods</td>
<td>88</td>
</tr>
</tbody>
</table>

COMWELD SBA 245

- High silver, excellent fluidity silver brazing alloy
- Alloy group 2: Silver, Copper, Cadmium, Zinc, alloys for low temperature brazing of all ferrous and non ferrous metals
- Not suitable for Aluminium, Magnesium & Zinc based alloys
- To be used with flux
- LIGHT BLUE end tip colour

Technical Data:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>45%</td>
</tr>
<tr>
<td>Typical melting range (˚C)</td>
<td>605-620˚</td>
</tr>
<tr>
<td>Brazing temp. for complete fluidity</td>
<td>625˚C</td>
</tr>
</tbody>
</table>

Typical Wire Analysis:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag:</td>
<td>45.0%</td>
</tr>
<tr>
<td>Cu:</td>
<td>15.0%</td>
</tr>
<tr>
<td>Zn:</td>
<td>16.0%</td>
</tr>
<tr>
<td>Cd:</td>
<td>24.0%</td>
</tr>
</tbody>
</table>

Silver Brazing Flux if required: Silver Brazing flux No. 2

Comparable COMWELD Cadmium free alloys: Cornweld SBA 245T

Classifications:

<table>
<thead>
<tr>
<th>AS/NZS 1167.1:</th>
<th>A6</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS/ASME-SFA A5.8:</td>
<td>BAg-1</td>
</tr>
</tbody>
</table>

Packaging Data:

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Pack Size</th>
<th>Pack Approx</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 750</td>
<td>0.5kg</td>
<td>0.5kg</td>
<td>74</td>
</tr>
<tr>
<td>1.6 x 500</td>
<td>5 rods</td>
<td>5 rods</td>
<td>113</td>
</tr>
<tr>
<td>2.4 x 750</td>
<td>Standard pack 0.5kg</td>
<td>0.5kg</td>
<td>33</td>
</tr>
</tbody>
</table>

COMCOAT Silver 45

- High silver, excellent fluidity silver brazing alloy
- Alloy group 2: Silver, Copper, Cadmium, Zinc, alloys for low temperature brazing of all ferrous and non ferrous metals
- Not suitable for Aluminium, Magnesium & Zinc based alloys
- Extruded flux coated version of Cornweld SBA 245
- SKY BLUE flux colour

Technical Data:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>45%</td>
</tr>
<tr>
<td>Typical melting range (˚C)</td>
<td>605-620˚</td>
</tr>
<tr>
<td>Brazing temp. for complete fluidity</td>
<td>625˚C</td>
</tr>
</tbody>
</table>

Typical Wire Analysis:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag:</td>
<td>45.0%</td>
</tr>
<tr>
<td>Cu:</td>
<td>15.0%</td>
</tr>
<tr>
<td>Zn:</td>
<td>16.0%</td>
</tr>
<tr>
<td>Cd:</td>
<td>24.0%</td>
</tr>
</tbody>
</table>

Silver Brazing Flux if required: No flux required

Comparable COMWELD Cadmium free alloys: Corncoat Silver 356T

Classifications:

<table>
<thead>
<tr>
<th>AS/NZS 1167.1:</th>
<th>A6</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS/ASME-SFA A5.8:</td>
<td>BAg-1</td>
</tr>
</tbody>
</table>

Packaging Data:

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Pack Size</th>
<th>Pack Approx</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 x 500</td>
<td>Standard pack 0.5kg</td>
<td>0.5kg</td>
<td>90</td>
</tr>
<tr>
<td>1.6 x 500</td>
<td>Blister pack 5 rods</td>
<td>90</td>
<td>322009</td>
</tr>
</tbody>
</table>
COMWELD 40/60 Soft Solder

- General Purpose Low Cost Solder.
- General For Sheet Metal & Plumbing Applications.
- General Wide Range of Packaging Options.

**Description & application:**
COMWELD 40/60 Solder is a low cost general purpose solder for general sheet metal work, plumbing (not water pipes) such as gutters and flashings and automotive radiator repairs.

**Classifications:**
AS 1834 Part 1: 40Sn

**Packaging Data:**
- Colour Code & Identification:
  - Cored wire reels: Green label
  - Sticks: marked 40/60
  - Handipack (H/P) Coil: Yellow backing card & label

- Joining Process:
  - Soldering only
  - Soldering iron bit temperature: 294˚C

- Typical Rod Analysis:
  - Sn: 40% (Tin)
  - Pb: 60% (Lead)

- Typical Properties:
  - Tensile strength: 42 MPa
  - Shear strength: 37 MPa
  - Approx. melting range: 183-234˚C
  - Electrical conductivity: 10.1% IACS

- Description & application:
COMWELD 40/60 Solder is a low cost general purpose solder for general sheet metal work, plumbing (not water pipes) such as gutters and flashings and automotive radiator repairs.

COMWELD 50/50 Soft Solder

- Higher Quality General Purpose Solder.
- For Electrical & Electronic Applications.
- Wide Range of Packaging Options.

**Description & application:**
COMWELD 50/50 Solder is a higher quality general purpose solder for general sheet metal work, and plumbing (not water pipe) applications where better free flowing characteristics are important.

**Classifications:**
AS 1834 Part 1: 50Sn

**Packaging Data:**
- Colour Code & Identification:
  - Cored wire reels: Orange label
  - Sticks: marked 50/50

- Joining Process:
  - Soldering only
  - Soldering iron bit temperature: 272˚C

- Typical Rod Analysis:
  - Sn: 50% (Tin)
  - Pb: 50% (Lead)

- Typical Properties:
  - Tensile strength: 45 MPa
  - Shear strength: 40 MPa
  - Approx. melting range: 183-212˚C
  - Electrical conductivity: 10.9% IACS

- Description & application:
COMWELD 50/50 Solder is a higher quality general purpose solder for general sheet metal work, and plumbing (not water pipe) applications where better free flowing characteristics are important.

COMWELD 965 Solder (Soft Silver Solder)

- Highest Strength Soft Solder.
- Lead, Zinc and Cadmium Free.
- Non Toxic Solder For Electrical, Surgical and Food Equipment Applications.
- Wide Range of Packaging Options.

**Description & application:**
COMWELD 965 Solder is a tin / silver eutectic solder which has the highest strength of all soft solders. Due to it’s high strength, good electrical and thermal conductivity, non toxicity (lead, zinc and cadmium free) and also the fact that it remains bright and shiny, make COMWELD 965 Solder the most universal of soft solders. COMWELD 965 Solder is used for the joining and repair of copper, bronze, brass, nickel, monel, steel, stainless steel, pewter, chrome plate, metal sculpture, model making, costume jewellery and or a combination of metals with the exception of aluminium and magnesium.

**Classifications:**
AS 1834 Part 1: 96.5Sn/3.5Ag

**Packaging Data:**
- Colour Code & Identification:
  - Blue labels & backing cards

- Joining Process:
  - Soldering only
  - Soldering iron bit temperature: 281˚C

- Typical Rod Analysis:
  - Sn: 96.5% (Tin)
  - Ag: 3.5% (Silver)

- Typical Properties:
  - Tensile strength: 60 MPa
  - Density: 7.5g/cm³
  - Approx. melting point: 220˚C
  - Electrical conductivity: 17% IACS

- For procedure recommendations refer to Pocket Guide
Solders and Fluxes

COMWELD Metal Mate Solder Kit

- Highest Strength Soft Solder.
- Lead, Zinc and Cadmium Free.
- Non Toxic Solder For Electrical, Surgical and Food Equipment Applications.

Description & application:
COMWELD Metal Mate Solder Kit contains a 14 gram 965 solid solder coil complete with a 14 ml bottle of COMWELD 965 Soldering Flux which provides a very compact package suitable for all of the applications recommended for the standard Comweld 965 Soft Solder.

Classifications:
AS 1834 Part 1: 96.5Sn/3.5Ag

Colour Code & Identification:
Clear plastic jar, white lid & white label with blue print

Typical Rod Analysis:
Sn: 96.5% (Tin)  Ag: 3.5% (Silver)

Typical Properties:
Tensile strength  60 MPa
Density  7.5g/cm³
Approx. melting point  220°C
Electrical conductivity  17% IACS

Joining Process:
Soldering only
Soldering iron bit temperature: 281°C

Typical Rod Analysis:
Sn: 96.5% (Tin)  Ag: 3.5% (Silver)

Typical Properties:
Tensile strength  60 MPa
Density  7.5g/cm³
Approx. melting point  220°C
Electrical conductivity  17% IACS

Packaging Data:

<table>
<thead>
<tr>
<th>Rod/Wire Size</th>
<th>Pack Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6mm</td>
<td>14g solid wire</td>
<td>322690</td>
</tr>
<tr>
<td></td>
<td>coiled around a 14ml bottle of 965 Soldering Flux</td>
<td></td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide

COMWELD Aluminium Flux

- For Fusion Welding Aluminium Alloys.
- Highest Quality Flux.
- Useable in either Powder or Paste Form.

Description & application:
COMWELD Aluminium Flux is an all purpose flux for fusion welding sheet and cast aluminium. It eliminates the need for a number of different types of aluminium welding fluxes being stocked to handle different types of aluminium welding alloys. COMWELD Aluminium Flux is recommended for use with the following COMWELD Aluminium welding rods, AL1188 (Pure), AL4043 (5% Silicon) and AL5356 (5% Magnesium).

Colour Code & Identification:
White powder in black plastic jars

Melting Point:
545°C

Packaging Data:

<table>
<thead>
<tr>
<th>Pack Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>250g Black plastic jar</td>
<td>321740</td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide

COMWELD Copper & Brass Flux

- For Universal Braze Welding Applications.
- Highest Quality Flux.
- Useable in either Powder or Paste Form.

Description & application:
COMWELD Copper and Brass Flux is specially developed for the braze welding of copper, brass and bronze and the brazing of copper, steel, etc. COMWELD Copper and Brass Flux is particularly suitable for use with COMWELD Manganese Bronze, Tobin Bronze, Nickel Bronze and Silicon Bronze rods.

Colour Code & Identification:
Pink powder in black plastic jars or drums

Melting Point:
645°C

Packaging Data:

<table>
<thead>
<tr>
<th>Pack Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>250g Black jar</td>
<td>321822</td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide
COMWELD Silver Brazing Flux No. 2

- For Silver Brazing of Carbon Steel, Stainless Steels & Dissimilar Metals.
- Highest Quality Flux.
- Used in a Paste Form.

**Description & application:**
COMWELD Silver Brazing Flux No. 2 and Silver Brazing Alloys with a high silver content (42-50%) produce excellent joints on carbon steel, stainless steel, nickel alloys and copper and brass.

Dissimilar metals in the above groups can be easily brazed.
The flux is a good temperature indicator and will melt at the proper brazing temperature.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200g Black jar</td>
<td>321840</td>
</tr>
<tr>
<td>500g Black jar</td>
<td>321841</td>
</tr>
<tr>
<td>3.5kg White plastic jar</td>
<td>321843</td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide

---

COMWELD G.P. Silver Brazing Flux

- For Silver Brazing of Carbon Steel, Stainless Steels & Dissimilar Metals.
- Highest Quality Flux.
- Used in a Paste Form.

**Description & application:**
COMWELD General Purpose Silver Brazing Flux is recommended for use with Cadmium bearing and Cadmium free silver brazing alloys with a low to medium silver content (2-40%). It is an excellent flux for medium to high temperature brazing and has been specially formulated to be used for induction brazing.

COMWELD General Purpose Silver Brazing Flux and the above mentioned silver brazing alloys produce excellent joints on carbon steel, stainless steel, nickel alloys and copper and brass.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200g Black jar</td>
<td>321850</td>
</tr>
<tr>
<td>500g Black jar</td>
<td>321851</td>
</tr>
<tr>
<td>3.5kg White plastic jar</td>
<td>321853</td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide

---

COMWELD 965 Soldering Flux

- For Use with all Comweld Soft Solders.
- Highest Quality Flux.
- Used in a Liquid Form Only.

**Description & application:**
COMWELD 965 Soldering Flux, when used in conjunction with COMWELD Soft Solders, enables excellent joints to be made on almost all metals and combinations of metals. It is a very active flux and therefore, if used on copper, brass, bronze, etc. may be diluted if required in the ratio 1 part flux to 4 parts water.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>125ml Bottle</td>
<td>321890</td>
</tr>
<tr>
<td>1 litre Bottle</td>
<td>321894</td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide
COMWELD Vapaflux

- For Braze Welding of Steel.
- Used with Comweld Manganese & Nickel Bronze Rods.
- Highest Quality Flux.
- Used in a Liquid Form Only.

**Colour Code & Identification:**
Clear liquid in a tin plate can

**Flash Point (True Closed Cup):**
17˚C

**Description & application:**
COMWELD Vapaflux provides an effective and time saving method of applying flux when braze welding steel. It is intended to be applied as vapour in the flame itself (the flux in the flame) and will impart a high fluidity to the bronze when deposited.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Pack</th>
<th>Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 litre tin plate can</td>
<td>321885</td>
<td></td>
</tr>
</tbody>
</table>

For procedure recommendations refer to Pocket Guide

**Pocket Guide - Welding Consumables Reference**

- The Total Welders Handbook
- Recommended Storage, Conditioning of Consumables.
- Total CIGWELD Welding Consumables Range.
- Welding of all materials.
- Joint Types.
- Welding Symbols.
- Technical Facts and Figures.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Pack</th>
<th>Volume/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Book</td>
<td>WCGuide</td>
<td></td>
</tr>
</tbody>
</table>
### COMWELD Vapaflux

- For Braze Welding of Steel.
- Used with Comweld Manganese & Nickel Bronze Rods.
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**Description & application:**

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**Colour Code & Identification:**

Clear liquid in a tin plate can

**Flash Point (True Closed Cup):**

17˚C

**Packaging Data:**

<table>
<thead>
<tr>
<th>Pack Size</th>
<th>Weight/Type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 litre tin plate can</td>
<td>321885</td>
<td></td>
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---

### Pocket Guide - Welding Consumables Reference

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</thead>
<tbody>
<tr>
<td>1 Book</td>
<td>WC GUIDE</td>
<td></td>
</tr>
</tbody>
</table>
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- Three Phase and Synergic Pulse
- Engine Driven Welding Equipment

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- Blowpipe, Cutters and Consumables
- Comet Gas Equipment Accessories

Welding Consumables
- Solid & Flux Cored Welding Wires
- Electrodes, Rods & Fluxes
- Hardfacing Electrodes and Wires

Safety, MIG Gun & Accessories
- Plasma Cutting Equipment
- Safety Products
- Welding Torches, Consumables and Accessories

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