CIGWELD Professional: when welding is your business
At Victor Technologies 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 solid and Flux Cored (FC) welding wires offers an optimum solution for every welding application. The professional FC wire range, combining both fabricated seamed wires and copper-coated, very low hydrogen (H4) wires, is the most extensive range available in the market today.

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

KEY TO ICONS

- Requires shielding gas
- No shielding gas required
- Direct current - electrode positive
- Direct current - electrode negative
- Direct current - electrode negative or positive
- Suitable for overhead welding
- Suitable for vertical up welding
- Suitable for side horizontal welding
- Suitable for HV (horizontal/vertical) fillet welding
- Suitable for flat welding
- Copper-coated seamless flux cored wire

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Autocraft Copper Coated Solid Steel Welding Wires

• A higher manganese/silicon steel wire for GMA Welding
• Use with CO₂ and Argon based shielding gases
• Wide range of minispool, handispool and Autopak packaging options
• Suitable for the positional Gas Metal Arc Welding (GMAW) of mild and low alloy steels, used in general fabrication and structural work.

Classifications:
AS/NZS 2717.1: ES6-GC/M/W603AH.
AWS/ASME-SFA A5.18: ER70S-6.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed (metres/min)</th>
<th>Current Range (amps)</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
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</table>

* Mini Spool (ø100mm); Handi Spool (ø200mm); Spool (ø300mm); AutoPak (ø510mm x H.770mm).

AUTOPAK® Parts List:

AUTOPAK accessories “Standard Types”:
Clear plastic AUTOPAK dome (ø510mm base diam. x 300mm height). 720001
AUTOPAK conduit assembly kit 720008
Robot cell conduit kit 720004

The advantages of AUTOPAK®

• Higher productivity from reduced downtime
• Straight/Twist free wire gives greater accuracy in the joint
• Smaller acceleration weight produces improved arc starting with less stress on wire-feed unite and less slippage and burn backs
• Fully enclosed pack and pay-off system protects against dust, dirt and moisture
• Compact and maneuverable makes it easy to use in confined and restricted locations. Autopak takes up only 0.2m² of floor space.

Typical All Weld Metal Mechanical Properties:
Welding Grade CO₂: Argon 10-25% CO₂:
Yield Stress 420 MPa 390 MPa
Tensile Strength 520 MPa 500 MPa
Elongation 30% 31%
CVN Impact Val. 110 J @ -20°C 100 J @ -20°C

Typical Wire Analysis:
C: 0.08% Mn: 1.55% Si: 0.88%
S: 0.010% P: 0.015%

Typical Diffusible Hydrogen Levels to AS3752:
1.0 – 2.0 mls of hydrogen / 100gms of deposited weld metal.

Approvals:
L.R.S. Grade 3S, 3YS
A.B.S. Grade SSA
* Approvals do not include 0.6mm Autocraft LW1-6 wire

Recommended Shielding Gas:
• Argon + 10-15% CO₂ (or equivalent)
ISO14175: M14, M21, M24
• Argon + 10-25% CO₂ (or equivalent)
ISO14175: M21
• Argon + 5% CO₂ +3% O₂
ISO14175: M23
• Welding Grade CO₂
ISO14175: C1

Comparable Cigweld Products:
Comweld LW1-6 TIG rod
Comweld LW1 TIG rod
Verti-Cor 3XP FCAW
Metal-Cor XP FCAW

AUTOPAK® Parts List:

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Clear plastic AUTOPAK dome (ø510mm base diam. x 300mm height). 720001
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• Argon + 10-25% CO₂ (or equivalent)
ISO14175: M21
• Argon + 5% CO₂ +3% O₂
ISO14175: M23
• Welding Grade CO₂
ISO14175: C1

Comparable Cigweld Products:
Comweld LW1-6 TIG rod
Comweld LW1 TIG rod
Verti-Cor 3XP FCAW
Metal-Cor XP FCAW

The advantages of AUTOPAK®

• Higher productivity from reduced downtime
• Straight/Twist free wire gives greater accuracy in the joint
• Smaller acceleration weight produces improved arc starting with less stress on wire-feed unite and less slippage and burn backs
• Fully enclosed pack and pay-off system protects against dust, dirt and moisture
• Compact and maneuverable makes it easy to use in confined and restricted locations. Autopak takes up only 0.2m² of floor space.
Autocraft Copper Coated Solid Steel Welding Wires

Autocraft LW1

- A Premium Quality Low Carbon Steel Wire for GMA Welding.
- Suitable for all positional multi-pass Gas Metal Arc welding of mild, low alloy and medium strength steels, as used in general fabrication, pressure vessels and structural work.

Classifications:
AS/NZS 2717.1: ES4-GC/M-W503AH.
AWS/ASME-SFA A5.18: ER70S-4.

Packaging and Operating Data:

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* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Welding Grade CO2: Argon 10-25% CO2:
  - Yield Stress: 430 MPa
  - Tensile Strength: 550 MPa
  - CVN Impact: 31%

TYPICAL WIRE ANALYSIS:
- C: 0.08%
- Mn: 1.06%
- Si: 0.70%
- P: 0.015%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 1.0 - 2.0 mls of hydrogen / 100gms of deposited weld metal.

APPROVALS:
- L.R.S. Grade 3S
- A.B.S. Grade 3SA

RECOMMENDED SHIELDING GAS:
- Argon + 10-15% CO2 (or equivalent)
- Argon + 10-25% CO2 (or equivalent)
- Argon + 5% CO2 +3% O2
- Welding Grade CO2

COMPARABLE CIGWELD PRODUCTS:
- Comweld LW1 TIG rod
- Comweld LW1-6 TIG rod
- Verti-Cor 3XP FCAW
- Supre-Cor 5 FCAW

Autocraft Super Steel

- A Low Carbon, Triple Deoxidised Steel Wire for GMA Welding.
- For use with Welding Grade CO2 or Argon Based Shielding Gases.
- Triple Deoxidised for Superior Weld Deposit Quality and Resistance to Porosity.
- The ideal choice for the welding of rusty or mill scaled plates and pipes and the root pass welding of pipes, tanks, and heavy walled joints.

Classifications:
AS/NZS 2717.1: ES2-GC/M-W503AH.
AWS/ASME-SFA A5.18: ER70S-2.

Packaging and Operating Data:

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* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Welding Grade CO2: Argon 20-25% CO2:
  - Yield Stress: 425 MPa
  - Tensile Strength: 520 MPa
  - CVN Impact Values: 75 J av @ -20°C

TYPICAL WIRE ANALYSIS:
- C: 0.05%
- Mn: 1.10%
- Si: 0.55%
- Ti: 0.10%
- Zr: 0.06%
- Al: 0.08%
- S: 0.007%
- P: 0.008%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 1.0 - 2.0 mls of hydrogen / 100gms of deposited weld metal.

AUTOCRAFT SUPPER STEEL [5]

AUTOCRAFT SUSSER STEEL [5]

AUTOCRAFT MANGESEN MOLYBDENUM STEEL [5]

AUTOCRAFT MANGANESE MOLOYBENUM STEEL [5]

Autocraft Mn-Mo

- A Manganese Molybdenum Steel Wire for the GMA Welding of Higher Strength steels.
- For Use with Welding Grade CO2 or Argon Based Shielding Gases.
- 550 MPa Tensile Class Weld Deposits.
- Suitable for all positional fillet and butt welding of a wide range of higher strength steels, particularly those used in the fabrication of pressure vessels, boilers and pipelines.

Classifications:
AS/NZS 2717.1: ESD2-GC/M-W559AH.
AWS/ASME-SFA A5.28: ER80S-D2.

Packaging and Operating Data:

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<th>Pack Weight (kg)</th>
<th>Part No</th>
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<td>0.9</td>
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<td>15 kg</td>
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* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Welding Grade CO2: Argon 20-25% CO2:
  - Yield Stress: 580 MPa
  - Tensile Strength: 660 MPa
  - CVN Impact Values: 80 J av @ -20°C

TYPICAL WIRE ANALYSIS:
- C: 0.08%
- Mn: 1.73%
- Si: 0.65%
- Mo: 0.45%
- S: 0.011%
- P: 0.017%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 1.0 - 2.0 mls of hydrogen / 100gms of deposited weld metal.

RECOMMENDED SHIELDING GAS:
- Argon + 20-25% CO2
- Argon + 1-3% O2
- Welding Grade CO2

COMPARABLE CIGWELD PRODUCTS:
- Comweld Super Steel TIG rod
- Comweld Super Steel TIG-6 rod
- Verti-Cor 3XP FCAW
- Supre-Cor 5 FCAW
Autocraft Copper Coated Solid Steel Welding Wires

**Autocraft NiCrMo**

- A low alloy steel wire for the GMA welding of high strength steels
- For use with welding grade CO2 or Argon based shielding gases
- 760MPa tensile class weld deposits
- Suitable for all positional fillet and butt welding of a wide range of high strength steels, particularly quenched and tempered types such as Bisalloy 80, USS-T1 types and Welten 80C etc.

**Classifications:**
- AS/NZS 2717.1: ESMG-GCM-W769AH.
- AWS/ASME-SFA A5.28: ER110S-G.

**Packaging and Operating Data:**

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<td>120 – 350</td>
<td>Spool</td>
<td>15kg</td>
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* Spool (ø300mm).

**Typical All Weld Metal Mechanical Properties:**
- Argon 1-3% CO2: 730 MPa Yield Stress, 790 MPa Tensile Strength
- Argon 10-25% CO2: 380 MPa
- Elongation 17%
- CVN Impact Val. 12 J @ -20°C
- CVN Impact Val. 10 J @ -51°C

**Typical Wire Analysis:**
- C: 0.08%
- Mn: 1.40%
- Si: 0.60%
- Ni: 1.40%
- Cr: 0.40%
- Mo: 0.25%
- V: 0.10%

**Typical Diffusible Hydrogen Levels to AS3752:**
- 1.0 - 2.0 mls of hydrogen / 100gms of deposited weld metal

**Recommended Shielding Gas:**
- Argon + 10-25% CO2
- Argon + 1-3% O2
- Welding Grade CO2

**Comparable Cigweld Products:**
- Verti-Cor 113 K3 H4 FCAW
- Tensi-Cor 110T XP H4 FCAW

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**Autocraft CrMo1**

- A low alloy steel wire for the GMA welding of matching Cr-Mo-steels
- Recommended for the GMA welding of 1/2Cr-1/2Mo, 1Cr-1/2Mo and 1 1/4Cr-1/2Mo steel pipes, plates and castings

**Classifications:**
- AS/NZS 2717.1: ESB2-GM-W559AH.

**Packaging and Operating Data:**

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* Spool (ø300mm).

**Typical All Weld Metal Mechanical Properties:**
- Argon 1-3% CO2: 0.2% Proof Stress 500 MPa, 600 MPa Tensile Strength, 60J av @ +20°C
- Elongation 20%
- CVN Impact Values 60J av @ +20°C
- Post weld heat treated at 620°C as required by AWS A5.28

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

**Typical Diffusible Hydrogen Levels to AS3752:**
- 1.0 - 2.0 mls of hydrogen / 100gms of deposited weld metal

**Recommended Shielding Gas:**
- Argon + 20-25% CO2
- Argon + 1-3% O2

**Comparable Cigweld Products:**
- Alloysweld 80-B2 electrode
- Chrome Mo1 TIG rod
Autocraft Solid Stainless Steel Welding Wires

Autocraft 308LSi

- A steel wire for the GMA welding of 304 and 304L type stainless steels
- Recommended for the general welding of 210, 302, 321, 347, 409 and 444 type stainless steels

Classifications:
- AS/NZS ISO 14343: (new) B SS308LSi.
- AS/NZS 2717.3: (old) ES308LSi.
- AWS/ASME-SFA A5.9: ER308LSi.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique, etc.

<table>
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<tr>
<th>Wire Dia</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed (metres/min)</th>
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<td>721272</td>
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</table>

* Spool (ø300mm)

Typical Weld Metal

Mechanical Properties:
- Argon 1-3% CO2:
  - 0.2% Proof Stress: 450 MPa
  - Tensile Strength: 620 MPa
  - Elongation: 36%
  - CVN Impact Values: 90 J at -60°C

Typical Wire Analysis:
- C: 0.02%
- Mn: 2.05%
- Si: 0.80%
- Cr: 19.95%
- Ni: 10.25%
- P: 0.020%
- S: 0.005%
- Fe: Balance

Ferrite Number: 5–10 FN

Recommended Shielding Gas:
- Argon + 1-3% O2
- Argon + 2-5% CO2

Comparable Cigweld Products:
- Satincrome 308L-17 electrode
- Comweld 308L TIG rod
- Verticor 308L FCAW wire

Autocraft 309LSi

- A Stainless Steel Wire for the GMA Welding of 309 and 309L Type Stainless Steels.
- Also suitable for a wide range of other welding applications including: the dissimilar joining of “300 series” and stainless steel grades to mild or low alloy steels, an intermediate or buttering layer in the butt welding of clad steel.

Classifications:
- AS/NZS ISO 14343: (new) B SS309LSi.
- AS/NZS 2717.3: (old) ES309LSi.
- AWS/ASME-SFA A5.9: ER309LSi.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique, etc.

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<th>Wire Dia</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed (metres/min)</th>
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<td>3.0 – 10.0</td>
<td>150 – 280</td>
<td>Spool</td>
<td>15kg</td>
<td>721287</td>
</tr>
</tbody>
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* Mini spool (ø200mm); Handi spool (ø200mm); Spool (ø300mm)

Typical Weld Metal

Mechanical Properties:
- Argon 1-3% CO2:
  - 0.2% Proof Stress: 450 MPa
  - Tensile Strength: 620 MPa
  - Elongation: 36%
  - CVN Impact Values: 90 J at -60°C

Typical Wire Analysis:
- C: 0.02%
- Mn: 2.05%
- Si: 0.80%
- Cr: 19.95%
- Ni: 10.25%
- P: 0.020%
- S: 0.005%
- Fe: Balance

Ferrite Number: 5 – 15 FN

Recommended Shielding Gas:
- Argon + 1-3% O2
- Argon + 2-5% CO2

Comparable Cigweld Products:
- Satincrome 309L-17 electrode
- Comweld 309L TIG rod
- Verticor 309L TIG rod

Verticor 316LT wire

Autocraft 316LSi

- A Stainless Steel Wire for the GMA Welding of 316 and 316L Type Stainless Steels.
- Also suitable for the general welding of other 300 and 400 series stainless steels including 301, 302, 304/304L, 321, 347, 410 and 430.

Classifications:
- AS/NZS ISO 14343: (new) B SS316LSi.
- AS/NZS 2717.3: (old) ES316LSi.
- AWS/ASME-SFA A5.9: ER316LSi.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique, etc.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed (metres/min)</th>
<th>Current Range (amps)</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>16 – 24</td>
<td>4.5 – 15.0</td>
<td>70 – 200</td>
<td>Spool</td>
<td>15kg</td>
<td>722386</td>
</tr>
<tr>
<td>1.2</td>
<td>20 – 28</td>
<td>3.0 – 10.0</td>
<td>150 – 280</td>
<td>Spool</td>
<td>15kg</td>
<td>721287</td>
</tr>
</tbody>
</table>

* Spool (ø300mm)

Typical Weld Metal

Mechanical Properties:
- Argon 1-3% CO2:
  - 0.2% Proof Stress: 450 MPa
  - Tensile Strength: 620 MPa
  - Elongation: 36%
  - CVN Impact Values: 90 J at -60°C

Typical Wire Analysis:
- C: 0.02%
- Mn: 2.05%
- Si: 0.80%
- Cr: 19.95%
- Ni: 10.25%
- P: 0.020%
- S: 0.005%
- Fe: Balance

Ferrite Number: 5 – 15 FN

Recommended Shielding Gas:
- Argon + 1-3% O2
- Argon + 2-5% CO2

Comparable Cigweld Products:
- Satincrome 309L-17 electrode
- Comweld 309L TIG rod
- Verticor 309L TIG rod

Verticor 316LT wire
Autocraft Solid Aluminium Welding Wires

Autocraft AL1100

- A high purity aluminium wire for the GMA welding of selected wrought aluminium alloys.
- Recommended for the joining of selected high purity 1XXX series aluminium alloys used extensively in electrical and chemical industry applications.

Classifications:
- AS/NZS 2717.2: (old) E1100.
- AWS/ASME-SFA A5.10: ER1050.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed Range (metres/min)</th>
<th>Current Range (amps)</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
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<tr>
<td>1.0</td>
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<td>Mini Spool</td>
<td>4 x 0.5kg</td>
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<tr>
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<td>16 – 22</td>
<td>6.0 – 17.5</td>
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<td>Spool</td>
<td>7kg</td>
<td>722226</td>
</tr>
<tr>
<td>1.0</td>
<td>17 – 23</td>
<td>6.0 – 16.5</td>
<td>110 – 220</td>
<td>Spool</td>
<td>7kg</td>
<td>722224</td>
</tr>
<tr>
<td>1.0</td>
<td>17 – 23</td>
<td>6.0 – 16.5</td>
<td>110 – 220</td>
<td>Handi Spool</td>
<td>2.0kg</td>
<td>723224</td>
</tr>
<tr>
<td>1.2</td>
<td>20 – 25</td>
<td>5.5 – 12.0</td>
<td>150 – 250</td>
<td>Spool</td>
<td>7kg</td>
<td>722227</td>
</tr>
</tbody>
</table>

* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
Single-vee butt weld with 6081-T6 Aluminium (reduced section tensile specimen):
- Welding grade Argon: 0.2% Proof Stress 212 MPa
- Tensile Strength 303 MPa
- Elongation (in 2 inches) 5%

WIRE ANALYSIS LIMITS:
- Single values are maximum allowable, unless otherwise stated.

RECOMMENDED SHIELDING GAS:
- Helium + 25% Ar

COMPARABLE CIGWELD PRODUCTS:
- Comweld AL1100

APPROVALS:
- Det Norske Veritas (DNV)
- Lloyds Register of Shipping (LRS)
- American Bureau of Shipping (ABS)

Autocraft AL4043

- An Aluminium -5% Silicon wire for GMA welding of selected wrought and cast Aluminium alloys.
- For the repair welding of Aluminium alloy castings (mainly 4XX and 6XX series).
- For welding selected wrought (1XXX, 5XXX and 6XXX series) Aluminium Alloys.

Classifications:
- AS/NZS 2717.2: (old) E4043.
- AWS/ASME-SFA A5.10: ER4043.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc. For 5XXX type welding wires use welding current settings on the higher side of the range specified below and arc voltages on the lower side of the range. For 1XXX, 2XXX and 4XXX type welding wires use welding current settings on the lower side of the specified range and arc voltages on the higher side.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed Range (metres/min)</th>
<th>Current Range (amps)</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>20 – 25</td>
<td>5.5 – 12.0</td>
<td>150–300</td>
<td>Spool</td>
<td>7kg</td>
<td>722223</td>
</tr>
<tr>
<td>1.2</td>
<td>23 – 28</td>
<td>5.0 – 10.5</td>
<td>200 – 300</td>
<td>Spool</td>
<td>7kg</td>
<td>723223</td>
</tr>
</tbody>
</table>

* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
Single-vee butt weld with 6011-T6 Aluminium (reduced section tensile specimen) using welding grade Argon:
- Postweld heat treated & aged:
  - 0.2% Proof Stress 119 MPa
  - Tensile Strength 186 MPa
  - Elongation (in 2 inches) 8% 5%

WIRE ANALYSIS LIMITS:
- Single values are maximum allowable, unless otherwise stated.

RECOMMENDED SHIELDING GAS:
- Helium + 25% Ar

COMPARABLE CIGWELD PRODUCTS:
- Comweld AL4043

APPROVALS:
- Det Norske Veritas (DNV)
- Lloyds Register of Shipping (LRS)
- American Bureau of Shipping (ABS)

Autocraft AL5356

- An Aluminium -5% Magnesium wire for the GMA welding of a wide range of wrought and cast Aluminium alloys containing magnesium.

Classifications:
- AS/NZS 2717.2: (old) E5356.
- AWS/ASME-SFA A5.10: ER5356.

Packaging and Operating Data:
These machine settings are a guide only. Actual voltage and welding current used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc. For 5XXX type welding wires use welding current settings on the higher side of the range specified below and arc voltages on the lower side of the range. For 1XXX, 2XXX and 4XXX type welding wires use welding current settings on the lower side of the specified range and arc voltages on the higher side.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Voltage Range (volts)</th>
<th>Wire Feed Speed Range (metres/min)</th>
<th>Current Range (amps)</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>17 – 23</td>
<td>6.0 – 16.5</td>
<td>110 – 220</td>
<td>Spool</td>
<td>7kg</td>
<td>722224</td>
</tr>
<tr>
<td>1.0</td>
<td>17 – 23</td>
<td>6.0 – 16.5</td>
<td>110 – 220</td>
<td>Handi Spool</td>
<td>2.0kg</td>
<td>723224</td>
</tr>
<tr>
<td>1.2</td>
<td>20 – 25</td>
<td>5.5 – 12.0</td>
<td>150 – 250</td>
<td>Spool</td>
<td>7kg</td>
<td>722227</td>
</tr>
</tbody>
</table>

* Spool (ø300mm);

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
Single-vee butt weld with 5086 Aluminium (reduced section tensile specimen):
- Welding grade Argon: 0.2% Proof Stress 252 MPa
- Tensile Strength 289 MPa
- Elongation (in 2 inches) 17%

WIRE ANALYSIS LIMITS:
- Single values are maximum allowable, unless otherwise stated.

RECOMMENDED SHIELDING GAS:
- Helium + 25% Ar

COMPARABLE CIGWELD PRODUCTS:
- Comweld AL5356
- AWS R5356

APPROVALS:
- Det Norske Veritas (DNV)
- Lloyds Register of Shipping (LRS)
- American Bureau of Shipping (ABS)
Autocraft Solid Aluminium Welding Wires

- For GMAW welding of wrought and cast aluminium alloys containing magnesium.
- Superior surface cleanliness for improved resistance to porosity.

Classifications:
- AS/NZS ISO 18273: (old) S Al 5183.
- AS 2717.2: (new) ES183.
- AWS/ASME-SFA A5.10: ERS183.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Voltage</th>
<th>Wire Feed Speed</th>
<th>Current</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
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<td>(metres/min)</td>
<td>Range</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>17 – 23</td>
<td>6.0 – 16.5</td>
<td>110 – 220</td>
<td>Spool</td>
<td>7kg</td>
<td>722239</td>
</tr>
<tr>
<td>1.2</td>
<td>20 – 25</td>
<td>5.5 – 12.0</td>
<td>120 – 230</td>
<td>Spool</td>
<td>7kg</td>
<td>722240</td>
</tr>
</tbody>
</table>

* Spool (ø300mm).

Autocraft AL5183

TYPICAL ALL WELD METAL
MECHANICAL PROPERTIES:
- Single-vee butt weld with 5083 Aluminium (reduced section tensile specimen)
  - Welding grade Argon: 0.2% Proof Stress 55 MPa
  - Tensile Strength 200 MPa
  - Elongation (in 2 inches) 50%
  - Electrical Conductivity 40% IACS
  - Hardness 55 HB
  - Weld Metal Density 7.47 × 10³ kg/m³

WIRE ANALYSIS LIMITS:
- Single values are maximum allowable, unless otherwise stated.
  - Mn: 0.5%
  - Si: 0.5%
  - P: 0.15%
  - Sn: 1.0%
  - Zn: 0.90%
  - Cu: Balance

RECOMMENDED SHIELDING GAS:
- Welding Grade Argon
- Argon + 10-15% CO₂
- Helium + 25% Ar

Autocraft Solid Copper Based Welding Wires

- A high Copper alloy for GMA Joining and overlay applications.
- Fabricating deoxidised copper and electrolytic pitch copper components.
- Repair of Copper castings.
- Lower strength welding of galvanised steels and deoxidised copper to mild steel joints.
- Typical applications include the GMA welding of copper transformer connectors, copper bus bars, billet molds and heater elements etc.

Classifications:
- AWS/ASME-SFA A5.7: ERCu.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Voltage</th>
<th>Wire Feed Speed</th>
<th>Current</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>Range</td>
<td>(metres/min)</td>
<td>Range</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td>15 – 20</td>
<td>4.5 – 10.5</td>
<td>85 – 150</td>
<td>Handispool</td>
<td>5kg</td>
<td>720159</td>
</tr>
<tr>
<td>0.9</td>
<td>21 – 26</td>
<td>7.5 – 14.5</td>
<td>100 – 230</td>
<td>Spool</td>
<td>13kg</td>
<td>720015</td>
</tr>
<tr>
<td>1.2</td>
<td>22 – 28</td>
<td>5.5 – 11.5</td>
<td>180 – 380</td>
<td>Spool</td>
<td>13kg</td>
<td>720235</td>
</tr>
</tbody>
</table>

* Spool (ø300mm).

Autocraft Deoxidised Copper

- A Copper based wire for the GMA welding of Copper-Silicon alloys including CuSiMan and Everdur.
- Used for the lower strength welding of steels.
- Extensively used for the GMA welding of Copper-Silicon alloys used in hot water systems, heat exchangers, calorifiers and marine components for their corrosion resistance.

Classifications:
- AWS/ASME-SFA A5.7: ERCuSi–A.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Voltage</th>
<th>Wire Feed Speed</th>
<th>Current</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>Range</td>
<td>(metres/min)</td>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td>15 – 20</td>
<td>4.5 – 10.5</td>
<td>85 – 150</td>
<td>Handispool</td>
<td>5kg</td>
<td>720159</td>
</tr>
<tr>
<td>0.9</td>
<td>21 – 26</td>
<td>7.5 – 14.5</td>
<td>100 – 230</td>
<td>Spool</td>
<td>13kg</td>
<td>720015</td>
</tr>
<tr>
<td>1.2</td>
<td>22 – 28</td>
<td>5.5 – 11.5</td>
<td>180 – 380</td>
<td>Spool</td>
<td>13kg</td>
<td>720235</td>
</tr>
</tbody>
</table>

* Spool (ø300mm).

Autocraft Silicon Bronze

- A Copper based wire for the GMA welding of Copper-Silicon alloys including CuSiMan and Everdur.
- Used for the lower strength welding of steels.
- Extensively used for the GMA welding of Copper-Silicon alloys used in hot water systems, heat exchangers, calorifiers and marine components for their corrosion resistance.

Classifications:
- AWS/ASME-SFA A5.7: ERCuSi–A.

Packaging and Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Voltage</th>
<th>Wire Feed Speed</th>
<th>Current</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>Range</td>
<td>(metres/min)</td>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td>15 – 20</td>
<td>4.5 – 10.5</td>
<td>85 – 150</td>
<td>Handispool</td>
<td>5kg</td>
<td>720159</td>
</tr>
<tr>
<td>0.9</td>
<td>21 – 26</td>
<td>7.5 – 14.5</td>
<td>100 – 230</td>
<td>Spool</td>
<td>13kg</td>
<td>720015</td>
</tr>
<tr>
<td>1.2</td>
<td>22 – 28</td>
<td>5.5 – 11.5</td>
<td>180 – 380</td>
<td>Spool</td>
<td>13kg</td>
<td>720235</td>
</tr>
</tbody>
</table>

* Spool (ø300mm).

TYPICAL WELD DEPOSIT HARDNESS
WITH ARGON +10-15% CO₂:
- HRb Three Layers on Mild Steel 48

COMPARABLE CIGWELD PRODUCTS:
- Comweld Silicon Bronze rod
- AWS A5.7: ERCuSi–A

RECOMMENDED SHIELDING GAS:
- Welding Grade Argon
- Argon + 10-25% CO₂
- Helium + 25% Ar

TYPICAL WELDING DATA:
- Fe: 0.25%
- Mn: 1.0%
- Si: 3.40%
- Sn: 0.90%
- Zn: 0.90%
- Cu: Balance

Electrical Conductivity 40% IACS
Hardness 55 HB
Weld Metal Density 7.47 × 10³ kg/m³
Why choose Flux Cored over Solid wire?

Flux Cored Welding wires, have several distinct advantages over solid wires:

- **Higher deposition rates.** Cored wires have less cross sectional area than solid wires of equivalent diameter, therefore the welding current is applied to a smaller area resulting in higher current density, higher melt off rates and a more forceful arc column.

- **All positional capabilities.** Most types of Flux Cored wires have slag systems similar to that of a conventional manual arc electrode enabling out of position Welding. One of the functions of the slag is to support the solidifying Weld Metal allowing for higher Welding currents, greater depth of fusion and higher travel speeds which all translate to increased productivity. Solid wires on the other hand typically require lower current levels to perform out of position Welds. Usually the “short circuit” or “Dip” transfer mode is used. This results in a lower level of fusion and greatly reduced deposition when welding out of position.

- **Better fusion profiles.** The higher current density of Flux Cored wires results in a more forceful Arc column creating a greater depth of fusion (particularly with CO2 shielding gas) and improved fusion profiles. This translates to a more suitable shape of the fusion zone and greater effective throat thickness on Fillet Welds.

- **Ease of operation.** The CIGWELD Flux Cored Wire range represents the most user-friendly range of wires on the market today. Operator training for out of position Welding is greatly reduced compared to that required for Solid wire.

- **Greatly increased range of Alloy types.** Since the Alloying elements are introduced to the wire during manufacture a broad selection can be produced by adjusting the flux ingredients.

Seamed and seamless wires

Conventional (seamed) Flux Cored Welding wires are produced from a flat strip of steel that is roll formed into a “U” shaped section and flux ingredients are carefully metered into the section before it passes through closing rolls completing the tubular shape and compressing the granular flux inside. The closed wire is then drawn through finishing dies to achieve the required final diameter.

Seamless wires can be made in two common ways, the most popular is to begin with a larger diameter seamless tube, and meter the flux ingredients into the tube before drawing to size, annealing and Copper coating. The other method begins much the same as a conventional seamed wire but the seam is welded closed before drawing down to size.

The closed and protected nature of seamless wires offers significant benefits in control of diffusible Hydrogen in the weld deposit by offering much greater resistance to moisture pickup. The high temperature annealing and Copper coating offer additional benefits by increasing electrical conductivity, enhancing feedability and improving shelf life of the wire.

Features & Benefits

Seamed Flux Cored Wires
- Ease and speed of manufacture
- Lower cost of manufacture
- Good feedability
- Excellent welding characteristics
- Excellent operator appeal

Seamless Flux Cored Wires
- Greatly improved control of diffusible Hydrogen: AWS H4 / AS H5 classifications
- Greatly reduced moisture absorption
- Greatly reduced susceptibility to Hydrogen induced cracking
- Outstanding welding characteristics
- Excellent operator appeal
- Excellent feedability
- Excellent electrical conductivity
- Greater rust resistance
- Improved targetability
- Reduced wear on tips and liners
Flux cored wire types

Rutile Types: the most widely used gas shielded flux cored wires are those which contain Rutile as the major core ingredient. These wires exhibit excellent arc characteristics, good bead shapes, excellent slag detachability and minimal spatter.

Several of the Cigweld Rutile type wires are formulated for use with both CO₂ and Argon based Mixed shielding gases.

The most common types found in the Australian market today are AWS Classification: T-1, T-9, & T-12 class wires.

Basic Types: principally use Calcium Fluoride and Calcium Carbonate as their main flux ingredients. These ingredients help to provide a weld metal that is relatively clean and low in Oxygen content for superior impact toughness and ductility.

These basic elements are not as easily ionized in the arc resulting in a harsher arc with higher spatter levels than those of Rutile type wires. The presence of the Fluorides lowers the “pick up” of Hydrogen in the Weld metal therefore Basic wires are characterized by very low Diffusible Hydrogen levels. Typically less than 3mls per 100g of deposited Weld metal.

Metal Cored: wires are composed mainly of Iron Powder with minor additions of alloying elements, de-oxidants, and arc stabilizers. These wires are designed to operate primarily with Argon based shielding gases in spray transfer and produce very little slag coverage.

These wires are best compared to solid steel wires in their application but offer the benefits of superior deposition rates and improved fusion profiles.

Low Alloy: wires can be rutile, basic or metal cored in construction. As tensile strength increases these wires tend to be either basic or metal cored for greater assurance of control of diffusible Hydrogen levels in the weld deposit.
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

**Satin-Cor XP**

- A rutile type flux cored wire formulated exclusively for CO₂ shielding gas.
- For high speed, downhand welding applications.
- Excellent operator appeal.
- Superior fillet shape and slag lift.
- Recommended for the downhand fillet welding of structural steels of 6mm thickness or heavier.

**Classifications:**

<table>
<thead>
<tr>
<th>AS/NZS ISO 17632: (new)</th>
<th>AS/NZS 2203.1: (old)</th>
<th>AWS/ASME-SFA A5.20:</th>
</tr>
</thead>
<tbody>
<tr>
<td>B T 49 2 T1 0 C A H10</td>
<td>ETD-GCp-W502A, CM1 H10</td>
<td>E70T-1H8.</td>
</tr>
</tbody>
</table>

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Position</th>
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<tbody>
<tr>
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<td>350 – 450</td>
<td>28 – 33</td>
<td>25 – 30</td>
<td>380</td>
<td>30</td>
<td>Flat</td>
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<tr>
<td>2.4</td>
<td>400 – 550</td>
<td>28 – 33</td>
<td>25 – 35</td>
<td>450</td>
<td>30</td>
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</tr>
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<td>1.6</td>
<td>350 – 400</td>
<td>26 – 30</td>
<td>26 – 30</td>
<td>330</td>
<td>29</td>
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<td>Horizontal</td>
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<td>25 – 29</td>
<td>25 – 30</td>
<td>360</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

*These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.*

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using welding grade CO₂:
  - Yield Stress: 480 MPa
  - Tensile Strength: 560 MPa
  - Elongation: 26%
  - CVN Impact Values: 80 J at 0°C

**TYPICAL ALL WELD METAL ANALYSIS USING CO₂:**

- C: 0.04% Mn: 1.24% Si: 0.70%
- Ti: 0.035% B: 0.005%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 5-6 mls of hydrogen/100gms of deposited weld metal.

**APPROVALS:**

- LRS Grade 2S, 2YS
- ABS Grade 2YS A H10
- DNV Grade IIYMS

**Verti-Cor Ultra**

- A rutile type flux cored wire formulated exclusively for CO₂ shielding gas.
- Versatile, all positional capabilities.
- Excellent operator appeal.
- Grade 2 Shipping Society approvals.
- Low spatter and fume levels.
- Designed for the single and multi-pass welding of mild and medium strength steels in the downhand, vertical-up and overhead positions.

**Classifications:**

<table>
<thead>
<tr>
<th>AS/NZS ISO 17632: (new)</th>
<th>AS/NZS 2203.1: (old)</th>
<th>AWS/ASME-SFA A5.20:</th>
</tr>
</thead>
</table>

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>250 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>250</td>
<td>28</td>
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</tr>
<tr>
<td>1.6</td>
<td>350 – 400</td>
<td>27 – 31</td>
<td>23 – 30</td>
<td>300</td>
<td>29</td>
<td></td>
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<tr>
<td>1.2</td>
<td>230 – 280</td>
<td>26 – 30</td>
<td>20 – 25</td>
<td>230</td>
<td>27</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>310 – 360</td>
<td>26 – 30</td>
<td>25 – 30</td>
<td>270</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>170 – 220</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>190</td>
<td>24</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
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<td>24 – 28</td>
<td>15 – 20</td>
<td>210</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>160 – 210</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>215</td>
<td>26</td>
<td>Overhead</td>
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<tr>
<td>1.6</td>
<td>190 – 240</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>250</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

*These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.*

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using welding grade CO₂:
  - Yield Stress: 480 MPa
  - Tensile Strength: 560 MPa
  - Elongation: 26%
  - CVN Impact Values: 80 J at 0°C

**TYPICAL ALL WELD METAL ANALYSIS USING CO₂ SHIELDING GAS:**

- C: 0.04% Mn: 1.24% Si: 0.70%
- Ti: 0.035% B: 0.005%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 5-6 mls of hydrogen/100gms of deposited weld metal.

**APPROVALS:**

- LRS Grade 2S, 2YS
- ABS Grade 2YS A H10
- DNV Grade IIYMS

**RECOMMENDED SHIELDING GAS:**

- Welding Grade CO₂

---

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type</th>
<th>Part No</th>
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</thead>
<tbody>
<tr>
<td>1.6</td>
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<tr>
<td>2.4</td>
<td>Coil</td>
<td>720906</td>
</tr>
</tbody>
</table>

* Spool (ø300mm);
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

Verti-Cor XP

- Versatile, smooth running, general purpose, rutile type flux cored wire
- Now with Grade 3 Shipping Society approvals
- Excellent operator appeal
- All positional capabilities

**Classifications:**

<table>
<thead>
<tr>
<th>AS/NZS ISO 17632: (new)</th>
<th>B T 49 2 T1 1 CAU H10.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS/NZS 2203.1: (old)</td>
<td>ETP-GMk-W503A. CM1 H10.</td>
</tr>
<tr>
<td>AWS/ASME-SFA A5.20</td>
<td>ETP-GCk-W503A. CM1 H10.</td>
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</table>

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range</th>
<th>Voltage Range</th>
<th>Electrode Stickout (ESD)</th>
<th>Optimum</th>
<th>Amps</th>
<th>Watts</th>
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</thead>
<tbody>
<tr>
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<td>20-25</td>
<td>280</td>
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<tr>
<td>1.6</td>
<td>350-400</td>
<td>27-31</td>
<td>20-25</td>
<td>360</td>
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<td>31</td>
</tr>
<tr>
<td>2.0</td>
<td>350-400</td>
<td>27-31</td>
<td>20-25</td>
<td>360</td>
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<td>31</td>
</tr>
<tr>
<td>1.6</td>
<td>310-360</td>
<td>26-30</td>
<td>25-30</td>
<td>320</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>1.2</td>
<td>170-220</td>
<td>24-28</td>
<td>15-20</td>
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<td>24</td>
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<td>200-250</td>
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</tr>
<tr>
<td>1.6</td>
<td>150-210</td>
<td>24-28</td>
<td>15-20</td>
<td>220</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using Ar+20-25% CO2: Using CO2
  - Yield Stress 510 MPa
  - Tensile Strength 600 MPa
  - Elongation 20%
  - CVN Impact Values 50J at 0°C

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 5-8 mls of hydrogen/100gms of deposited weld metal
- "for as manufactured" product using welding grade CO2 shielding gas

**COMPARABLE CIGWELD PRODUCTS:**

- Argoshield 52 shielding gas

**PACKAGING DATA:**

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
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</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
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<td>720917</td>
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<td>1.6</td>
<td>Spool</td>
<td>15kg</td>
<td>720917</td>
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<tr>
<td>2.0</td>
<td>Spool</td>
<td>15kg</td>
<td>720917</td>
</tr>
</tbody>
</table>

Verti-Cor 3XP

- A microalloyed, rutile type flux cored wire
- Versatile, all positional capabilities
- Excellent operator appeal
- Grade 3 Shipping Society approvals
- Formulated to give smooth (low spatter) arc transfer, flat mitre fillet welds and excellent slag lift in all positions (except vertical-down), on a wide range of mild and medium strength steels

**Classifications:**

<table>
<thead>
<tr>
<th>AS/NZS ISO 17632: (new)</th>
<th>B T 49 3 T1 2 CAU H10.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS/NZS 2203.1: (old)</td>
<td>ETP-GMk-W503A. CM1 H10.</td>
</tr>
<tr>
<td>AWS/ASME-SFA A5.20</td>
<td>ETP-GCk-W503A. CM1 H10.</td>
</tr>
</tbody>
</table>

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range</th>
<th>Voltage Range</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESD)</th>
<th>Optimum</th>
<th>Amps</th>
<th>Watts</th>
</tr>
</thead>
<tbody>
<tr>
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<td>27-31</td>
<td>20-25</td>
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<td>31</td>
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</tr>
<tr>
<td>1.6</td>
<td>350-400</td>
<td>27-31</td>
<td>20-25</td>
<td>360</td>
<td>31</td>
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<td>2.0</td>
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<td>27-31</td>
<td>20-25</td>
<td>360</td>
<td>31</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>310-360</td>
<td>26-30</td>
<td>25-30</td>
<td>320</td>
<td>29</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>170-220</td>
<td>24-28</td>
<td>15-20</td>
<td>200</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>200-250</td>
<td>24-28</td>
<td>15-20</td>
<td>240</td>
<td>22</td>
<td>22</td>
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</tr>
<tr>
<td>1.6</td>
<td>150-210</td>
<td>24-28</td>
<td>15-20</td>
<td>220</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using Ar+20-25% CO2: Using CO2
  - Yield Stress 480 MPa
  - Tensile Strength 530 MPa
  - Elongation 28%
  - CVN Impact Values 40J at 0°C

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 5-8 mls of hydrogen/100gms of deposited weld metal
- "for as manufactured" product using welding grade CO2 shielding gas

**COMPARABLE CIGWELD PRODUCTS:**

- Argoshield 52 shielding gas

**PACKAGING DATA:**

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
<td>15kg</td>
<td>720917</td>
</tr>
<tr>
<td>1.6</td>
<td>Spool</td>
<td>15kg</td>
<td>720917</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

Verti-Cor 3XP H4 - Seamless

• Next generation technology flux cored wire.
• Copper coated for smooth consistent feedability and current pick up.
• Rutile, all positional capabilities producing a flat mitre fillet bead shape.
• Ultra low splatter and fume levels.
• H4 diffusible hydrogen class with a typical weldmetal of 2.2 mls of hydrogen/100 gms
• Excellent operator appeal.
• Grade 3 Shipping Society Approvals.

Classifications:
- AS/NSZ ISO 17632: (new) B T 49 3 T12.1 M A U H5.
- AS/NSZ 2203.1: (old) ETP-SMp-W503A, CM1 H5.

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>250 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>280</td>
<td>31</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>350 – 400</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>360</td>
<td>31</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.2</td>
<td>230 – 280</td>
<td>26 – 30</td>
<td>20 – 25</td>
<td>260</td>
<td>28</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>310 – 360</td>
<td>26 – 30</td>
<td>25 – 30</td>
<td>320</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>170 – 220</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>200</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>200 – 250</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>240</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>160 – 210</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>200</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>190 – 240</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>220</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Using Argon +20-25% CO2:
  - Yield Stress: 510 MPa
  - Tensile Strength: 570 MPa
  - Elongation: 30%
  - CVN:
  - Impact Values: 105J av @ 20°C

TYPICAL ALL WELD METAL ANALYSIS:
- Using Argon +20-25% CO2:
  - C: 0.05%
  - Mn: 1.25%
  - Si: 0.43%
  - P: 0.009
  - S: 0.007

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 2.2 mls of hydrogen / 100gms of deposited weld metal -
  *for “as manufactured” product using Argon +20-25% CO2

APPROVALS*:
- LRS 3S, 3YS H5
- ABS 3YSA H5
  * with Argon +20-25% CO2 shielding gas combinations.

RECOMMENDED SHIELDING GASES:
- Argon + 20-25% CO2.

Packaging Data:

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
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<td>722921</td>
</tr>
</tbody>
</table>

* Spool (ø300mm);
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

Verti-Cor 81 Ni1

- A higher strength low alloy steel, rutile type flux cored wire
- Formulated for use with Argon +20-25% CO2 shielding gases.
- Versatile, all positional capabilities.
- Excellent operator appeal.
- A Nominal 1% Nickel Steel deposit of the 550 MPa tensile class.
- Typical applications include the under matching strength fillet welding of Bisalloy 60, 70 and 80 quenched and tempered steels.

Classifications:
- AS/NZS ISO 17632: (new) B T 55 4 T1 1 M A N2 U H10.
- AS/NZS 2203.1: (old) ETP-G/Mp-W554A, Ni1 H10.
- AWS/ASME-SFA A5.29: E81T1-Ni1MH8

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Welding Positions</th>
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<tbody>
<tr>
<td>1.2</td>
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<td>20 – 25</td>
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<td>31</td>
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</tr>
<tr>
<td>1.6</td>
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<td>24 – 28</td>
<td>15 – 20</td>
<td>240</td>
<td>25</td>
<td>Flat</td>
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<tr>
<td>1.2</td>
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<td>24 – 28</td>
<td>15 – 20</td>
<td>200</td>
<td>24</td>
<td>Overhead</td>
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<tr>
<td>1.6</td>
<td>190 – 240</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>220</td>
<td>24</td>
<td>Flat</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

Verti-Cor 81 Ni2

- Higher strength, low alloy rutile type flux cored wire
- Formulated for use with Argon + 20-25% CO2 or equivalent shielding gas
- Outstanding operator appeal
- Versatile all positional capabilities
- Low fume levels

Classifications:
- AS/NZS ISO 17632: (new) B T 55 4 T1 1 M A N5 U H10.
- AS/NZS 2203.1: (old) ETP-G/Mp-W554A Ni2 H10.
- AWS/ASME-SFA A5.29: E81T1-Ni2M H8

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
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<tr>
<td>1.2</td>
<td>250 – 300</td>
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<td>1.6</td>
<td>200 – 250</td>
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</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL
MECHANICAL PROPERTIES:
Using Argon +20-25% CO2:
- Yield Stress: 590 MPa
- Tensile Strength: 660 MPa
- Elongation: 27%
- CVN Impact Values: 70J av @ -40°C

TYPICAL ALL WELD METAL ANALYSIS:
C: 0.02%  Mn: 1.16%  Si: 0.51%
Ni: 2.0%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
6-7 mls of hydrogen / 100gms of deposited weld metal *. For “as manufactured” product using Argon +20-25% CO2.

RECOMMENDED SHIELDING GASES:
Argon + 20-25% CO2 or equivalent ISO14175: M21, M24

PACKAGING DATA:
- Spool (ø300mm)


click to enlarge
Verti-Cor 81 Ni1 H4

- Copper coated for smooth consistent feedability and enhanced current pick-up
- Higher strength, low alloy, rutile type flux cored wire
- Formulated for use with either Argon + 20-25% CO₂ or CO₂ shielding gases
- Outstanding operator appeal
- Versatile, all positional capabilities
- Low fume levels
- Precision layer wound

Classifications:
- AS/NZS ISO 17632: (new) B T 55 T1 1 C A N2 U H5.
- AS/NZS 2203.1: (old) ETP-GC/Mp-W554 Ni1 H5
- AWS/ASME-SFA A5.29: E81T1-Ni1M H4; E81T1-Ni1 H4

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Optimum Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>250-300</td>
<td>27-31</td>
<td>20-25</td>
<td>280</td>
<td>30</td>
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<tr>
<td>1.6</td>
<td>350-400</td>
<td>27-31</td>
<td>25-30</td>
<td>360</td>
<td>31</td>
</tr>
<tr>
<td>2.0</td>
<td>380-460</td>
<td>28-32</td>
<td>30-35</td>
<td>400</td>
<td>33</td>
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<tr>
<td>1.2</td>
<td>230-280</td>
<td>26-30</td>
<td>20-25</td>
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<td>28</td>
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<tr>
<td>1.6</td>
<td>310-360</td>
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</tr>
<tr>
<td>2.0</td>
<td>340-420</td>
<td>27-31</td>
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<td>1.2</td>
<td>180-220</td>
<td>24-28</td>
<td>15-20</td>
<td>200</td>
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<td>1.6</td>
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<td>1.2</td>
<td>160-210</td>
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<td>24</td>
</tr>
<tr>
<td>1.6</td>
<td>190-240</td>
<td>23-27</td>
<td>15-20</td>
<td>190</td>
<td>24</td>
</tr>
<tr>
<td>2.0</td>
<td>210-270</td>
<td>23-27</td>
<td>20-25</td>
<td>240</td>
<td>24</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Using Argon +20-25% CO₂: Using CO₂:
  - Yield Stress: 540 MPa 500 MPa
  - Tensile Strength: 600 MPa 560 MPa
  - Elongation: 22% 23%
  - CVN: 85 J av @ -50°C. 75 J av @ -50°C

TYPICAL ALL WELD METAL ANALYSIS*:
- Using Argon +20-25% CO₂:
  - C: 0.06%  Mn: 1.40%  Si: 0.5%
  - Ni: 1.0%
  - Using CO₂:
  - C: 0.05%  Mn: 1.1%  Si: 0.38%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 3.0-3.5 mls of hydrogen / 100gms of deposited weld metal .
  - For “as manufactured” product using Argon +20-25% CO₂.

RECOMMENDED SHIELDING GAS:
- Argon + 20-25% CO₂ or equivalent

VERTI-COR 91 K2 H4

- Copper coated for smooth consistent feedability and enhanced current pick-up
- A higher strength low alloy steel, rutile type flux cored wire
- Formulated for use with Ar +20-25% CO₂ shielding gases.
- Versatile, all positional capabilities.
- Excellent operator appeal.
- A nominal 1.5% Nickel Steel deposit of the 620 MPa tensile class.
- Typical applications include the full strength butt welding of Bisalloy 60 or the under matching strength fillet welding of Bisalloy 70 and 80 steels.

Classifications:
- AS/NZS ISO 18276: (new) B T 62 T1 1 M A N3M1 H5
- AWS/ASME-SFA A5.29: E91T1-K2M H4

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Optimum Volts</th>
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</thead>
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<tr>
<td>1.2</td>
<td>250 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>280</td>
<td>30</td>
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<tr>
<td>1.6</td>
<td>350 – 400</td>
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<td>25 – 30</td>
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<tr>
<td>2.0</td>
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<td>30 – 35</td>
<td>400</td>
<td>33</td>
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<tr>
<td>1.2</td>
<td>230 – 280</td>
<td>26 – 30</td>
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<td>280</td>
<td>28</td>
</tr>
<tr>
<td>1.6</td>
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</tr>
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<td>340 – 420</td>
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<td>370</td>
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</tr>
<tr>
<td>1.2</td>
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<td>15 – 20</td>
<td>200</td>
<td>24</td>
</tr>
<tr>
<td>1.6</td>
<td>190 – 240</td>
<td>23 – 27</td>
<td>15 – 20</td>
<td>220</td>
<td>24</td>
</tr>
<tr>
<td>2.0</td>
<td>210 – 270</td>
<td>23 – 27</td>
<td>20 – 25</td>
<td>240</td>
<td>24</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
- Using Argon +20-25% CO₂: Using CO₂:
  - Yield Stress: 560 MPa 560 MPa
  - Tensile Strength: 660 MPa 660 MPa
  - Elongation: 23%
  - CVN: 30 J av @ -50°C

TYPICAL ALL WELD METAL ANALYSIS*:
- Using Argon +20-25% CO₂:
  - C: 0.06%  Mn: 1.30%  Si: 0.50%
  - Ti: 0.035%  B: 0.007%
  - Using CO₂:
  - C: 0.16%  Mn: 1.30%  Si: 0.50%

TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:
- 3.0-3.5 mls of hydrogen / 100gms of deposited weld metal .
  - For “as manufactured” product using Argon +20-25% CO₂.

RECOMMENDED SHIELDING GAS:
- Argon + 20-25% CO₂

COMPARABLE CIGWELD PRODUCTS:
- AlloysMelt 90 MMAW
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

**Verti-Cor 111 K3 H4**

- Copper coated for smooth consistent feedability and enhanced current pick-up
- A high strength low alloy steel, rutile type flux cored wire
- Formulated for use with Argon +20-25% CO₂ shielding gases.
- Versatile, all positional capabilities.
- A Nickel Molybdenum Steel deposit of the 760 MPa tensile class.
- Typical applications include the full strength butt welding and fillet welding of Bisalloy 80 and similar quenched and tempered steels.

**Classifications:**
AS/NZS ISO 18276: (new) B T 76 2 T1 1 M A N3M2U H5.
AS/NZS 2203.1: (old) ETP-GMip-W768A. K3 H5.
AWS/ASME-SFA A5.29: E111T1-K3M H4.

**Operating Data:**
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>250 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>280</td>
<td>31</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>350 – 400</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>360</td>
<td>31</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>230 – 280</td>
<td>26 – 30</td>
<td>20 – 25</td>
<td>260</td>
<td>28</td>
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<tr>
<td>1.6</td>
<td>310 – 360</td>
<td>26 – 30</td>
<td>25 – 30</td>
<td>320</td>
<td>29</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>170 – 220</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>200</td>
<td>24</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>200 – 250</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>240</td>
<td>25</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>160 – 210</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>200</td>
<td>24</td>
<td>Overhead</td>
</tr>
<tr>
<td>1.6</td>
<td>190 – 240</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>220</td>
<td>24</td>
<td>Flat</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

**TYPICAL ALL WELD METAL**

**MECHANICAL PROPERTIES:**
Using Argon +20-25% CO₂:
- Yield Stress: 445 MPa
- Tensile Strength: 550 MPa
- Elongation: 29%
- CVN Impact: 150 J at -40°C

**TYPICAL ALL WELD METAL ANALYSIS:**
C: 0.10% Mn: 1.25% Si: 0.32%
- Using Argon +20-25% CO₂

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**
1.5-2.0 mls of hydrogen / 100gms of deposited weld metal *.

**RECOMMENDED SHIELDING GASES:**
- Argon + 20-25% CO₂

**COMPARABLE CIGWELD PRODUCTS:**
Autocraft LW1/LW1-6 GMAW
Ferrocraft 61 MMAW

**Supre-Cor 5**

- Second generation, fully basic flux cored wire.
- Improved low temperature impact toughness to -50°C.
- Improved positional capabilities of 1.2mm and 1.6mm sizes.
- DC electrode negative operation.
- Suitable for a wide range of critical applications including the fillet and butt welding of pressure vessels, offshore oil and gas platform structures and heavy earthmoving equipment.

**Classifications:**
AS/NZS ISO 17632: (new) B T 49 5 T1 1 M A U5 H5.
AS/NZS 2203.1: (old) ETP-GCn/p-W505A. CM1 H5.

**Operating Data:**
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO₂ shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
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<th>Volts</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>250 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>280</td>
<td>29</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>350 – 400</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>350</td>
<td>30</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>230 – 280</td>
<td>26 – 30</td>
<td>20 – 25</td>
<td>250</td>
<td>27</td>
<td>HV Fillet</td>
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<tr>
<td>1.6</td>
<td>310 – 360</td>
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<td>25 – 30</td>
<td>315</td>
<td>30</td>
<td>Flat</td>
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<tr>
<td>1.2</td>
<td>170 – 220</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>140</td>
<td>21</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>200 – 250</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>N/A</td>
<td>N/A</td>
<td>Flat</td>
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<tr>
<td>1.2</td>
<td>190 – 240</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>120</td>
<td>20</td>
<td>Overhead</td>
</tr>
<tr>
<td>1.6</td>
<td>220 – 270</td>
<td>24 – 28</td>
<td>15 – 20</td>
<td>N/A</td>
<td>N/A</td>
<td>Flat</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

**TYPICAL ALL WELD METAL**

**MECHANICAL PROPERTIES:**
Using Argon +20-25% CO₂:
- Yield Stress: 420 MPa
- Tensile Strength: 530 MPa
- Elongation: 30%
- CVN Impact: 150 J at -40°C

**TYPICAL ALL WELD METAL ANALYSIS:**
C: 0.10% Mn: 1.45% Si: 0.42%
P: 0.012% S: 0.015%
- Using Argon +20-25% CO₂

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**
1.5-2.0 mls of hydrogen / 100gms of deposited weld metal *.

**APPROVALS:**
- LRS Grade 3S, 3YS H10
- ABS Grade 3SA, 3YSA H10
- DNV IIIYMS H10

**RECOMMENDED SHIELDING GASES:**
- Argon + 20-25% CO₂

**COMPARABLE CIGWELD PRODUCTS:**
Autocraft LW1/LW1-6 GMAW
Ferrocraft 61 MMAW

**Packaging Data:**
Wire Dia mm | Pack Type* | Pack Weight | Part No |
---|------------|-------------|--------|
1.2         | Spool      | 15kg        | 721381 |
1.6         | Spool      | 15kg        | 721382 |

* Spool (ø300mm)

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17
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

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### Supre-Cor XP H4

- Copper coated for smooth consistent feedability and enhanced current pick-up
- Fully basic flux cored wire
- Low temperature impact toughness to -20°C
- Available in 2.4mm size only.
- Recommended for the fillet and butt welding of heavy earthmoving and mining equipment.

**Classifications:**

- AS/NZS ISO 17632: (new) B T 49 3 T5 0 C A U H5.
- AS/NZS 2203.1: (old) ETD-GCnp-p-W503A. CM1 H5.
- AWS/ASME-SFA A5.20: E70T-5 H4, E70T-5M H4.

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Welding Positions</th>
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<tbody>
<tr>
<td>2.4</td>
<td>350-500</td>
<td>27 - 33</td>
<td>25-30</td>
<td>450</td>
<td>31</td>
<td>Flat</td>
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<tr>
<td>2.4</td>
<td>350-500</td>
<td>27 - 33</td>
<td>25-30</td>
<td>400</td>
<td>30</td>
<td>HV Fillet</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using Argon +20-25% CO2:
  - Yield Stress: 456 MPa
  - Tensile Strength: 555 MPa
  - Elongation: 29%
  - CVN Impact Values: 57J av @ -20°C

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 1.5 - 2.0 mls of hydrogen / 100gms of deposited weld metal.
- "for as manufactured" product using Argon +20-25% CO2.

**APPROVALS:**

- LRS Grade 4YSA H5.
- *with Argon +20-25% CO2 or CO2 shielding gases.

**TYPICAL ALL WELD METAL ANALYSIS:**

- C: 0.08% Mn: 1.34% Si: 0.63%
- P: 0.020% S: 0.015%

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Pack Type*</th>
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<td>720553</td>
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<td>720552A</td>
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<td>1.6</td>
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<td>230kg</td>
<td>720553A</td>
</tr>
</tbody>
</table>

* Spool (ø300mm)

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### Metal-Cor 5 H4

- Copper coated for smooth consistent feedability and enhanced current pick-up
- High efficiency metal cored wire with excellent operator appeal
- Grade 4 Shipping Society approvals
- Very low slag formation
- Outstanding low temperature impact properties
- High deposition efficiency
- High deposition rates
- Precision layer wound

**Classifications:**

- AS/NZS ISO 17632: (new) B T 49 4 T15 0 M A U H5.
- AS/NZS 2203.1: (old) ETP-GMnp-p-W504A CM1 H5 *1.2mm only
- AWS/ASME-SFA A5.18: E70C-6M H4

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

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<th>Wire Dia mm</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Volts</th>
<th>Welding Positions</th>
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<td>20-25</td>
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<td>32</td>
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<tr>
<td>1.6</td>
<td>350-450</td>
<td>29-33</td>
<td>25-30</td>
<td>400</td>
<td>32</td>
<td>Flat</td>
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<tr>
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<td>20-25</td>
<td>270</td>
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<td>HV Fillet</td>
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<tr>
<td>1.6</td>
<td>300-380</td>
<td>27-31</td>
<td>25-30</td>
<td>350</td>
<td>29</td>
<td>HV Fillet</td>
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<td>27-31</td>
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<td>1.6</td>
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<td>25-30</td>
<td>340</td>
<td>29</td>
<td>Horizontal</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:**

- Using Argon +20-25% CO2:
  - Yield Stress: 460 MPa
  - Tensile Strength: 530 MPa
  - Elongation: 32%
  - CVN Impact Values: 135J av @ -20°C

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- <3.5 mls of hydrogen / 100gms of deposited weld metal.
- *with Argon +20-25% CO2 shielding gas or equivalent

**APPROVALS:**

- LRS Grade 3S, 3YS H5.
- ABS Grade 3YSA H5.
- DNV IIIYMS H5.

**TYPICAL ALL WELD METAL ANALYSIS:**

- C: 0.07% Mn: 0.9% Si: 0.56%
- S: 0.014% P: 0.013% Ni: 0.04%
- Cr: 0.03%
- *Using Argon +20-25% CO2

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
<td>15kg</td>
<td>720552</td>
</tr>
<tr>
<td>1.6</td>
<td>Spool</td>
<td>15kg</td>
<td>720553</td>
</tr>
<tr>
<td>1.2</td>
<td>Autopak</td>
<td>230kg</td>
<td>720552A</td>
</tr>
<tr>
<td>1.6</td>
<td>Autopak</td>
<td>230kg</td>
<td>720553A</td>
</tr>
</tbody>
</table>

* Spool (ø300mm)
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

Metal-Cor XP

- Low slag, metal cored wire.
- Grade 3 Shipping Society Approvals.
- High deposition efficiency = 95%.
- High deposition rates.
- For the high productivity fillet and butt welding of mild and medium strength steels in all downhand positions.

Classifications:
AS/NZS ISO 17632: (new) B T 49 2 T15 0 M A U H5.
AS/NZS 2203.1: (old) ETD-GMn/p-W503A. CM1 H5.
AWS/ASME-SFA A5.18.

- Low slag, metal cored wire.
- Grade 3 Shipping Society Approvals.
- High deposition efficiency = 95%.
- High deposition rates.
- For the high productivity fillet and butt welding of mild and medium strength steels in all downhand positions.

Classifications:
AS/NZS ISO 17632: (new) B T 76 5 T5 0 C A N4C1M2 H5.
AS/NZS 2203.1: (old) ETD-GM/CP-W769A. K4 H5.
AWS/ASME-SFA A5.29.

- Copper coated for smooth consistent feedability and enhanced current pick-up
- Fully basic, high strength low alloy steel flux cored wire.
- Formulated for use with Argon + 20-25% CO2 or CO2 Shielding Gas only.
- Premium quality weld deposits.
- "Very low Hs" Hydrogen status.
- For the crack free full strength butt welding of Bisalloy 80 and similar quenched and tempered steels.

Classifications:
AS/NZS ISO 17632: (new) B T 76 5 T5 0 C A N4C1M2 H5.
AS/NZS 2203.1: (old) ETD-GM/CP-W769A. K4 H5.
AWS/ASME-SFA A5.29.

- Copper coated for smooth consistent feedability and enhanced current pick-up
- Fully basic, high strength low alloy steel flux cored wire.
- Formulated for use with Argon + 20-25% CO2 or CO2 Shielding Gas only.
- Premium quality weld deposits.
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Classifications:
AS/NZS ISO 17632: (new) B T 76 5 T5 0 C A N4C1M2 H5.
AS/NZS 2203.1: (old) ETD-GM/CP-W769A. K4 H5.
AWS/ASME-SFA A5.29.

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and Argon + 20-25% CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>280 – 350</td>
<td>26 – 33</td>
<td>20 – 25</td>
<td>530</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>230 – 300</td>
<td>27 – 31</td>
<td>20 – 25</td>
<td>530</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>220 – 270</td>
<td>25 – 35</td>
<td>25 – 30</td>
<td>530</td>
<td>Vertical up</td>
</tr>
<tr>
<td>2.4</td>
<td>380 – 430</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>400</td>
<td>Horizontal</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

Typical Weld Metal Mechanical Properties:
Using Argon + 20-25% CO2:
- Yield Stress: 720 MPa
- Tensile Strength: 800 MPa
- CVN Impact Values: 50J av @ -50°C

cvn values for as fabricated product using Argon + 20-25% CO2 Shielding gas.

Tensi-Cor 110TXP H4

Specifications:
- Slow, metal cored wire.
- Grade 3 Shipping Society Approvals.
- High deposition efficiency = 95%.
- High deposition rates.
- For the high productivity fillet and butt welding of mild and medium strength steels in all downhand positions.

Classifications:
AS/NZS ISO 17632: (new) B T 49 2 T15 0 M A U H5.
AS/NZS 2203.1: (old) ETD-GMn/p-W503A. CM1 H5.
AWS/ASME-SFA A5.18.

- Slow, metal cored wire.
- Grade 3 Shipping Society Approvals.
- High deposition efficiency = 95%.
- High deposition rates.
- For the high productivity fillet and butt welding of mild and medium strength steels in all downhand positions.

Classifications:
AS/NZS ISO 17632: (new) B T 76 5 T5 0 C A N4C1M2 H5.
AS/NZS 2203.1: (old) ETD-GM/CP-W769A. K4 H5.
AWS/ASME-SFA A5.29.

- Slow, metal cored wire.
- Grade 3 Shipping Society Approvals.
- High deposition efficiency = 95%.
- High deposition rates.
- For the high productivity fillet and butt welding of mild and medium strength steels in all downhand positions.

Classifications:
AS/NZS ISO 17632: (new) B T 49 2 T15 0 M A U H5.
AS/NZS 2203.1: (old) ETD-GMn/p-W503A. CM1 H5.
AWS/ASME-SFA A5.18.

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation, DC electrode positive and Argon + 20-25% CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Optimum Amps</th>
<th>Welding Positions</th>
</tr>
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<tbody>
<tr>
<td>1.6</td>
<td>300 – 350</td>
<td>28 – 32</td>
<td>25 – 35</td>
<td>530</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>300 – 350</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>530</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>220 – 270</td>
<td>25 – 30</td>
<td>25 – 30</td>
<td>530</td>
<td>Vertical up</td>
</tr>
<tr>
<td>2.4</td>
<td>380 – 430</td>
<td>27 – 31</td>
<td>25 – 30</td>
<td>400</td>
<td>Horizontal</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

Typical Weld Metal Mechanical Properties:
Using Argon + 20-25% CO2:
- Yield Stress: 460 MPa
- Tensile Strength: 575 MPa
- Elongation: 28%
- CVN Impact Values: 100J av @ 0°C, 85J av @ -20°C, 40J av @ -30°C

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
Ni: 1.90% Mo: 0.4% Cr: 0.3%

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
Ni: 1.90% Mo: 0.4% Cr: 0.3%

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
Ni: 1.90% Mo: 0.4% Cr: 0.3%

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
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Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
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Ni: 1.90% Mo: 0.4% Cr: 0.3%

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
Ni: 1.90% Mo: 0.4% Cr: 0.3%

Typical Weld Metal Analysis:
C: 0.05% Mn: 1.42% Si: 0.75%
S: 0.012% P: 0.014%

Typical Weld Metal Analysis:
C: 0.08% Mn: 1.50% Si: 0.40%
Ni: 1.90% Mo: 0.4% Cr: 0.3%
Flux Cored Welding Wires for Mild Steel, Low Alloy Steels & Cast Iron

**Nicone 55**

- Composite Nickel-Iron Flux Cored Wire for the Joining and Repair of Cast Irons.
- Also Recommended for the Dissimilar Joining of Cast Iron to Steels.

**Classifications:**

- Meets AWS/ASME-SFA A5.15: ENiFe-CI (equivalent electrode classification).

**Operating Data:**

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>220-250</td>
<td>27 – 29</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc. Nicore 55 is a registered trademark of The Esab Group, Inc. Hanover PA 17331, USA.

**TYPICAL ALL WELD METAL ANALYSIS - USING STAINSHIELD:**

- C: 1.10%  Mn: 0.40%  Si: 0.45%  Fe: 50.0%  Balance Ni

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES - USING STAINSHIELD:**

- Tensile Strength 500 MPa
- Elongation 12%
- Hardness 200 HV

**RECOMMENDED SHIELDING GASES:**

- Argon + > 0-3% O2

**COMPARABLE CIGWELD PRODUCTS:**

- Castcraft 55

**Shield-Cor 4XP**

- Self shielded flux cored wire.
- Formulated for fast downhand fillet & butt welding applications.
- DC electrode positive operation.
- Excellent tolerance to joint misalignment or poor joint fit-up.
- Low spatter levels / easily removed slag.
- Typical applications include general fabrication and structural welding, field erection work and the outdoor repair of heavy machines and equipment.

**Classifications:**

- AS/NZS 2203.1: (old) ETD-GNp-W500A. CM2 H15.

**Operating Data:**

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESD)</th>
<th>Optimum Amps</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>300 – 400</td>
<td>27 – 30</td>
<td>60 – 70</td>
<td>400</td>
<td>30 Flat</td>
</tr>
<tr>
<td>2.8</td>
<td>350 – 450</td>
<td>28 – 32</td>
<td>60 – 70</td>
<td>450</td>
<td>31</td>
</tr>
<tr>
<td>2.4</td>
<td>280 – 330</td>
<td>27 – 30</td>
<td>60 – 70</td>
<td>370</td>
<td>28 HV Fillet</td>
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<tr>
<td>2.8</td>
<td>340 – 440</td>
<td>28 – 32</td>
<td>60 – 70</td>
<td>400</td>
<td>29</td>
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<tr>
<td>2.4</td>
<td>270 – 370</td>
<td>27 – 29</td>
<td>60 – 70</td>
<td>350</td>
<td>28 Horizontal</td>
</tr>
<tr>
<td>2.8</td>
<td>320 – 420</td>
<td>28 – 30</td>
<td>60 – 70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size and operator technique etc.

**TYPICAL ALL WELD METAL ANALYSIS:**

- C: 0.30%  Mn: 0.55%  Si: 0.10%
- Al: 1.50%  S: 0.008%  P: 0.013%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

- 10.0 - 12.0 mls of hydrogen / 100gms of deposited weld metal.
- “for as manufactured” product using the recommended E.S.O lengths.

**RECOMMENDED SHIELDING GASES:**

- Not Required.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>Coil</td>
<td>27kg</td>
<td>720907</td>
</tr>
<tr>
<td>2.8</td>
<td>Coil</td>
<td>27kg</td>
<td>720908</td>
</tr>
</tbody>
</table>

Actual weld metal mechanical properties achieved with Shield-Cor 4XP are influenced by many factors including, base metal analysis, welding parameters / heat input used, number of weld passes and run placement etc. Please consult your nearest CIGWELD branch for welding procedure recommendations.
**Shield-Cor 11**

- Self-shielded Flux Cored wire.
- Versatile, All Positional Capabilities.
- Excellent Tolerance to Joint Misalignment or Poor Joint Fit-up.
- Smooth Rippled Fillets with Good Edge Wetting.
- Ideal for Welding Thin Section Mild and Galvanised Steels.

**Classifications:**
- AS/NZS ISO 17632: (new) B T49 2 T11 1 NA.
- AS/NZS 2203.1: (old) ETPS-GNn-W500A. CM2.

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation and DC electrode positive.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>180 – 230</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>180 – 250</td>
<td>18 – 21</td>
<td>20 – 25</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.2</td>
<td>130 – 180</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>160 – 210</td>
<td>18 – 21</td>
<td>20 – 25</td>
<td>Overhead</td>
</tr>
<tr>
<td>1.2</td>
<td>130 – 180</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>160 – 210</td>
<td>18 – 21</td>
<td>20 – 25</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size and operator technique etc.

**TYPICAL ALL WELD METAL**

**MECHANICAL PROPERTIES:**
- Yield Stress 445 MPa
- Tensile Strength 620 MPa
- Elongation 22%

**TYPICAL ALL WELD METAL ANALYSIS:**
- C: 0.25%
- Mn: 0.70%
- Si: 0.40%
- Al: 1.65%
- S: 0.004%
- P: 0.007%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**
- 15.0 - 20.0 mls of hydrogen / 100gms of deposited weld metal.
- “for “as manufactured” product using the recommended E.S.O. lengths.

**RECOMMENDED SHIELDING GAS:**
- Not Required.
- Actual weld metal mechanical properties achieved with Shield-Cor 11 are influenced by many factors including, base metal analysis, welding parameters / heat input used, number of weld passes and run placement etc. Please consult your nearest CIGWELD branch for welding procedure recommendations.

**Shield-Cor 15**

- Self-shielded Flux Cored wire.
- For Single Pass applications Only.
- Versatile, All Positional Capabilities.
- Excellent Tolerance to Joint Misalignment or Poor Joint Fit-up.
- Smooth Rippled Fillets with Good Edge Wetting.
- Ideal for Welding Thin Section Mild and Galvanised Steels.

**Classifications:**
- AS/NZS ISO 17632: (new) B T49 2 T11 1 NA.
- AS/NZS 2203.1: (old) ETPS-GNn-W500A. CM2.
- AWS/ASME-SFA A5.20: E71T-GS.

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, and DC electrode positive.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>90 – 150</td>
<td>14 – 16</td>
<td>10 – 12</td>
<td>Flat</td>
</tr>
<tr>
<td>0.9</td>
<td>110 – 180</td>
<td>15 – 17</td>
<td>12 – 15</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>130 – 230</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>0.8</td>
<td>80 – 140</td>
<td>14 – 16</td>
<td>10 – 12</td>
<td>Vertical up</td>
</tr>
<tr>
<td>0.9</td>
<td>100 – 175</td>
<td>15 – 17</td>
<td>12 – 15</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.2</td>
<td>150 – 200</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>Vertical up</td>
</tr>
<tr>
<td>0.8</td>
<td>60 – 120</td>
<td>14 – 16</td>
<td>10 – 12</td>
<td>Overhead</td>
</tr>
<tr>
<td>0.9</td>
<td>80 – 150</td>
<td>15 – 17</td>
<td>12 – 15</td>
<td>Overhead</td>
</tr>
<tr>
<td>1.2</td>
<td>130 – 180</td>
<td>16 – 18</td>
<td>15 – 20</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size and operator technique etc.

**TYPICAL ALL WELD METAL**

**MECHANICAL PROPERTIES:**
- Yield Stress 430 MPa
- Tensile Strength 600 MPa
- Elongation 21%

**TYPICAL ALL WELD METAL ANALYSIS:**
- C: 0.25%
- Mn: 0.70%
- Si: 0.40%
- Al: 2.10%
- S: 0.004%
- P: 0.007%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**
- 15.0 - 20.0 mls of hydrogen / 100gms of deposited weld metal.
- “for “as manufactured” product using the recommended E.S.O. lengths.

**RECOMMENDED SHIELDING GAS:**
- Not Required.
- Actual weld metal mechanical properties achieved with Shield-Cor 15 are influenced by many factors including, base metal analysis, welding parameters / heat input used, number of weld passes and run placement etc. Please consult your nearest CIGWELD branch for welding procedure recommendations.

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>0.8</td>
<td>Handispool</td>
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<td>721923</td>
</tr>
<tr>
<td>0.9</td>
<td>Handispool</td>
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<td>721976</td>
</tr>
<tr>
<td>1.2</td>
<td>Handispool</td>
<td>4.5kg</td>
<td>721924</td>
</tr>
</tbody>
</table>

*Spool (additions)*


**Shield-Cor 8XP**

- Superior all-positional performance
- Outstanding operator appeal
- Vacuum packaged
- Excellent slag lift

**Classifications:**

AS2203.1: (old) ETP-GNn W503A CM1
AWS/ASME-SFA A5.20: E71T-8

**Operating Data:**

All welding conditions listed below are for semi-automatic operation, DC electrode negative.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>170 – 250</td>
<td>20 – 24</td>
<td>25 – 30</td>
<td>Flat</td>
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<tr>
<td>2.0</td>
<td>220 – 290</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>170 – 260</td>
<td>20 – 24</td>
<td>25 – 30</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>2.0</td>
<td>200 – 280</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>150 – 220</td>
<td>20 – 24</td>
<td>25 – 30</td>
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</tr>
<tr>
<td>2.0</td>
<td>180 – 260</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>150 – 220</td>
<td>21 – 25</td>
<td>12 – 15</td>
<td>Overhead</td>
</tr>
<tr>
<td>2.0</td>
<td>200 – 240</td>
<td>22 – 26</td>
<td>15 – 20</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size and operator technique etc.

**TYPICAL ALL WELD METAL ANALYSIS:**

Gasless wire:
- C: 0.17%
- Mn: 0.45%
- Si: 0.12%
- P: 0.01%
- S: 0.003%
- V: 0.01%
- Cu: 0.01%
- Al: 0.5%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

6–8 mls of hydrogen / 100gms of deposited weld metal.

**APPROVALS:**

LRS Grade 3S, 3YS H10.
ABS Grade 3YSA H10.

**RECOMMENDED SHIELDING GASES:**

- NOT REQUIRED

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>Spool</td>
<td>12kg</td>
<td>721304</td>
</tr>
<tr>
<td>2.0</td>
<td>Spool</td>
<td>12kg</td>
<td>721305</td>
</tr>
</tbody>
</table>

* Spool (ø300mm)

---

**Shield-Cor 8Ni**

- Excellent all-positional performance
- Very good low temperature impact toughness
- Vacuum packaged
- Excellent tolerance to poor fit up

**Classifications:**

AS/NZS ISO 17632: (new) B T49 2 TB 1 N A N2 U H10.
AS2203.1: (old) ETP-GNn W504A Ni1
AWS/ASME-SFA A5.29: E71T-8Ni

**Operating Data:**

All welding conditions recommended below are for use with semi-automatic operation, DC electrode negative.

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>170 – 250</td>
<td>20 – 24</td>
<td>25 – 30</td>
<td>Flat</td>
</tr>
<tr>
<td>2.0</td>
<td>220 – 290</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>Flat</td>
</tr>
<tr>
<td>1.6</td>
<td>170 – 260</td>
<td>20 – 24</td>
<td>25 – 30</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>2.0</td>
<td>200 – 280</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>150 – 220</td>
<td>20 – 24</td>
<td>25 – 30</td>
<td>Vertical up</td>
</tr>
<tr>
<td>2.0</td>
<td>180 – 260</td>
<td>22 – 26</td>
<td>30 – 35</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>150 – 220</td>
<td>21 – 25</td>
<td>12 – 15</td>
<td>Overhead</td>
</tr>
<tr>
<td>2.0</td>
<td>200 – 240</td>
<td>22 – 26</td>
<td>15 – 20</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size and operator technique etc.

**TYPICAL ALL WELD METAL ANALYSIS:**

Gasless wire:
- C: 0.17%
- Mn: 0.93%
- Si: 0.31%
- P: 0.08%
- S: 0.003%
- Ni: 0.87%
- Al: 0.5%

**TYPICAL DIFFUSIBLE HYDROGEN LEVELS TO AS3752:**

6–8 mls of hydrogen / 100gms of deposited weld metal.

**RECOMMENDED SHIELDING GASES:**

• NOT REQUIRED

**Packaging Data:**

<table>
<thead>
<tr>
<th>Wire Dia</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>Spool</td>
<td>12kg</td>
<td>721306</td>
</tr>
<tr>
<td>2.0</td>
<td>Spool</td>
<td>12kg</td>
<td>721307</td>
</tr>
</tbody>
</table>

* Spool (ø300mm)
Verti-Cor Flux Cored Stainless Steel Welding Wires

Verti-Cor 308LT
- Verti-Cor stainless steel flux cored wires
- 308LT-All positional capabilities
- Vacuum sealed in aluminised plastic packs
- Formulated for CO2 or Argon +20-25% CO2 shielding gases
- High deposition rate welding of stainless steel

Classifications:
AWS/ASME-SFA A5.22: E308LT1-1 (CO2)
E308LT1-4 (Ar + 20-25% CO2)

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation and DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>150 – 250</td>
<td>23 – 28</td>
<td>15 – 20</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>120 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.6</td>
<td>250 – 350</td>
<td>28 – 34</td>
<td>25 – 30</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>120 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td>HV Fillet</td>
</tr>
<tr>
<td>1.6</td>
<td>200 – 250</td>
<td>23 – 27</td>
<td>20 – 25</td>
<td></td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL
MECHANICAL PROPERTIES:
Using CO2 or Argon + 20-25% CO2
0.2% Proof Stress 410 MPa 430 MPa
Tensile Strength 550 MPa 600 MPa
Elongation 40% 35%

TYPICAL ALL WELD METAL ANALYSIS:
Using welding grade CO2:
C: 0.03% Mn: 1.4% Si: 0.60%
Cr: 23.6% Ni: 13%
P: 0.023% S:0.003%

RECOMMENDED SHIELDING GAS:
Argon + 20-25% CO2 or equivalent
ISO14175:M21
Welding grade CO2
ISO14175:C1

RECOMMENDED SHIELDING GAS:
Autocraft 308LSi GMAW wire
AWS A5.9: ER308LSi
Comweld 309L GAS/TIG rod
AWS A5.9 ER309L
Satinicrome 309Mo-17 Electrode
AWS A5.4 E309Mo-17

Packaging Data:
Wire Dia (mm) | Pack Type* | Pack Weight | Part No |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
<td>15kg</td>
<td>722889</td>
</tr>
</tbody>
</table>

Verti-Cor 309LT
- Verti-Cor stainless steel flux cored wires
- 309LT-All positional capabilities
- Vacuum sealed in aluminised plastic packs
- Formulated for CO2 or Argon +20-25% CO2 shielding gases
- High deposition rate welding of stainless steel

Classifications:
AWS/ASME-SFA A5.22: E309LT1-1 (CO2)
E309LT1-4 (Ar + 20-25% CO2)

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation and DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>180 – 220</td>
<td>27 – 30</td>
<td>15 – 20</td>
<td>Overhead</td>
</tr>
<tr>
<td>1.6</td>
<td>160 – 200</td>
<td>26 – 30</td>
<td>20 – 25</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>140 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>120 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td></td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL
MECHANICAL PROPERTIES:
Using CO2 or Argon + 20-25% CO2
0.2% Proof Stress 390 MPa 420 MPa
Tensile Strength 570 MPa 610 MPa
Elongation 43% 40%

TYPICAL ALL WELD METAL ANALYSIS:
Using welding grade CO2:
C: 0.03% Mn: 1.56% Si: 0.6%
Cr: 19.5% Ni: 10.2%
P: 0.020% S:0.003%

RECOMMENDED SHIELDING GAS:
Argon + 20-25% CO2 or equivalent
ISO14175:M21
Welding grade CO2
ISO14175:C1

RECOMMENDED SHIELDING GAS:
Autocraft 309LSi GMAW wire
AWS A5.9: ER308LSi
Comweld 309L GAS/TIG rod
AWS A5.9 ER309L
Satinicrome 309Mo-17 Electrode
AWS A5.4 E309Mo-17

Packaging Data:
Wire Dia (mm) | Pack Type* | Pack Weight | Part No |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
<td>15kg</td>
<td>722881</td>
</tr>
<tr>
<td>1.6</td>
<td>Spool</td>
<td>15kg</td>
<td>722882</td>
</tr>
</tbody>
</table>
Verti-Cor Flux Cored Stainless Steel Welding Wires

Verti-Cor 316LT

- Verti-Cor stainless steel flux cored wires
- 316LT-All positional capabilities
- Vacuum sealed in aluminised plastic packs
- Formulated for CO2 or Argon +20-25% CO2 shielding gases
- High deposition rate welding of stainless steel

Classifications:
AWS/ASME-SFA A5.22: E316LT1-1 (CO2)
E316LT1-4 (Ar + 20-25% CO2)

Operating Data:
All welding conditions recommended below are for use with semi-automatic operation and DC electrode positive and welding grade CO2 shielding gas with a flow rate of 15-20 litres/min.

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>Electrode Stickout (ESO)</th>
<th>Welding Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>150 – 200</td>
<td>23 – 28</td>
<td>15 – 20</td>
<td>Flat</td>
</tr>
<tr>
<td>1.2</td>
<td>120 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td>Vertical up</td>
</tr>
<tr>
<td>1.2</td>
<td>140 – 180</td>
<td>22 – 27</td>
<td>15 – 20</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES:
Using CO2
- 0.2% Proof Stress: 400 MPa
- Tensile Strength: 555 MPa
- Elongation: 42%

Using Argon + 20-25% CO2
- 0.2% Proof Stress: 410 MPa
- Tensile Strength: 580 MPa
- Elongation: 39%

TYPICAL ALL WELD METAL ANALYSIS:
Using welding grade CO2:
- C: 0.03%
- Mn: 1.8%
- Si: 0.75%
- Cr: 18.8%
- Ni: 11.5%
- P: 0.024%
- S: 0.002%
- Mo: 2.4%

RECOMMENDED SHIELDING GAS:
- Argon + 20-25% CO2 or equivalent
- ISO14175:M21

Welding grade CO2
- ISO14175:C1

RECOMMENDED SHIELDING GAS:
- Autocraft 316LSi GMAW wire
  - AWS A5.9: ER316LSi
- Comweld 316L GAS/TIG rod
  - AWS A5.9 ER316L
- Satincrome 316L-17 Electrode
  - AWS A5.4 E316L-17

Packaging Data:

<table>
<thead>
<tr>
<th>Wire Dia mm</th>
<th>Pack Type*</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Spool</td>
<td>15kg</td>
<td>722885</td>
</tr>
</tbody>
</table>

* Spool ø300mm

These machine settings are a guide only. Actual voltage, welding current and E.S.O. used will depend on machine characteristics, plate thickness, run size, shielding gas and operator technique etc.
Autocraft Solid Wires & Satinarc Fluxes for Submerged Arc Welding

## Autocraft SA1

- Copper coated, low carbon, low Manganese steel submerged arc wire
- Cost-effective general purpose welding with a ‘Active’ fluxes including Satinarc 15

### Classifications:

| AS1858.1: | EL12 |
| AWS/ASME-SFA A5.17: | EL12 |

### Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>CTWD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>200 – 550</td>
<td>24 – 32</td>
<td>20 – 25</td>
</tr>
<tr>
<td>2.4</td>
<td>250 – 700</td>
<td>26 – 34</td>
<td>20 – 25</td>
</tr>
<tr>
<td>3.2</td>
<td>300 – 900</td>
<td>28 – 34</td>
<td>25 – 30</td>
</tr>
<tr>
<td>4.0</td>
<td>400 – 1000</td>
<td>30 – 38</td>
<td>30 – 35</td>
</tr>
</tbody>
</table>

*Parameters are for single wire automatic applications. #CTWD = Contact Tip to Work Distance (typically 8 x wire diameter).

### TYPICAL WIRE ANALYSIS:

<table>
<thead>
<tr>
<th>Element</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.08%</td>
</tr>
<tr>
<td>Mn</td>
<td>0.50%</td>
</tr>
<tr>
<td>Si</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

### Packaging Data:

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>Coil</td>
<td>30kg</td>
<td>720582</td>
</tr>
<tr>
<td>2.4</td>
<td>Coil</td>
<td>30kg</td>
<td>720583</td>
</tr>
<tr>
<td>3.2</td>
<td>Coil</td>
<td>30kg</td>
<td>720584</td>
</tr>
<tr>
<td>4.0</td>
<td>Coil</td>
<td>30kg</td>
<td>720585</td>
</tr>
</tbody>
</table>

Other packaging options are available on indent, please contact your Thermadyne area manager.

## Autocraft SA2

- Copper coated, low carbon steel submerged arc wire
- Cost-effective high quality welding with a ‘Neutral’ or ‘Semi-Basic’ flux such as Satinarc 4.

### Classifications:

| AS1858.1: | EM12K |
| AWS/ASME-SFA A5.17: | EM12K |

### Operating Data:

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Current Range (amps)</th>
<th>Voltage Range (volts)</th>
<th>CTWD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>200 – 550</td>
<td>24 – 32</td>
<td>20 – 25</td>
</tr>
<tr>
<td>2.4</td>
<td>250 – 700</td>
<td>26 – 34</td>
<td>20 – 25</td>
</tr>
<tr>
<td>3.2</td>
<td>300 – 900</td>
<td>28 – 34</td>
<td>25 – 30</td>
</tr>
<tr>
<td>4.0</td>
<td>400 – 1000</td>
<td>30 – 38</td>
<td>30 – 35</td>
</tr>
</tbody>
</table>

*Parameters are for single wire automatic applications. #CTWD = Contact Tip to Work Distance (typically 8 x wire diameter).

### TYPICAL WIRE ANALYSIS:

<table>
<thead>
<tr>
<th>Element</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.10%</td>
</tr>
<tr>
<td>Mn</td>
<td>1.0%</td>
</tr>
<tr>
<td>Si</td>
<td>0.22%</td>
</tr>
</tbody>
</table>

### Packaging Data:

<table>
<thead>
<tr>
<th>Wire Dia (mm)</th>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>Coil</td>
<td>30kg</td>
<td>720662</td>
</tr>
<tr>
<td>2.4</td>
<td>Coil</td>
<td>30kg</td>
<td>720663</td>
</tr>
<tr>
<td>3.2</td>
<td>Coil</td>
<td>30kg</td>
<td>720664</td>
</tr>
<tr>
<td>4.0</td>
<td>Coil</td>
<td>30kg</td>
<td>720665</td>
</tr>
</tbody>
</table>

Other packaging options are available on indent, please contact your Thermadyne area manager.
**Satinarc 4**

- Semi-basic submerged arc flux
- For multi-pass butt welding applications requiring low temperature impact properties
- Recommended for use with Autocraft SA2
- Excellent slag lift in deep 'Vee' joints

**Classifications:**

- **Autocraft SA1 & Satinarc 4**
  - AWS A5.17: F6A2-EL12
  - A51858.1: EL12-FMM-W403A

- **Autocraft SA2 & Satinarc 4**
  - AWS A5.17: F8P5-EM12K
  - A51858.1: EM12K-FMM-W503A

**Packaging Data:**

<table>
<thead>
<tr>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ply paper bag</td>
<td>25kg</td>
<td>720412</td>
</tr>
</tbody>
</table>

**Satinarc 15**

- Active, general purpose submerged arc flux
- For fillet and multi-pass butt welding applications on plate less than 25mm thick
- Cost effective welding with Autocraft SA1 and Autocraft SA2 wires
- Good tolerance to rust and mill scale
- High current carrying capacity

**Classifications:**

- **Autocraft SA1 & Satinarc 15**
  - AWS A5.17: F6A2-EL12
  - A51858.1: EL12-FGH-W500A

- **Autocraft SA2 & Satinarc 15**
  - AWS A5.17: F7A2-EM12K
  - A51858.1: EM12K-FGH-W502A

**Packaging Data:**

<table>
<thead>
<tr>
<th>Pack Type</th>
<th>Pack Weight</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ply paper bag</td>
<td>25kg</td>
<td>720415</td>
</tr>
</tbody>
</table>

**Autocraft SA1/Satinarc 4:**

- **APPROVALS:**
  - Lloyd's Register of Shipping: Grade 3M
  - American Bureau of Shipping: Grade 3M

- **TYPICAL ALL WELD METAL ANALYSIS:**
  - C: 0.09% Mn: 0.65% Si: 0.30% S: 0.008% P: 0.022%

- **TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (AS WELDED):**
  - Yield Stress: 380 MPa
  - Tensile Stress: 490 MPa
  - Elongation: 32%
  - CVN Impact Values: 90J at -20°C

**Autocraft SA2/Satinarc 4:**

- **APPROVALS:**
  - Lloyd's Register of Shipping: Grade 4Y400M
  - American Bureau of Shipping: Grade 4Y400M

- **TYPICAL ALL WELD METAL ANALYSIS:**
  - C: 0.09% Mn: 1.2% Si: 0.4% S: 0.020% P: 0.030%

- **TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (AS WELDED):**
  - Yield Stress: 425 MPa
  - Tensile Stress: 520 MPa
  - Elongation: 29%
  - CVN Impact Values: 100J at -20°C

- 140J at 0°C

**FLUX CONSTITUENTS:**

- Basicity Index* = 1.6
  - SiO₂ + TiO₂: 20-25%
  - CaO + MgO: 35%
  - Al₂O₃ + MnO: 15%
  - CaF₂: 4-6%

*Basicity Index to Boniszewski

**Autocraft SA1/Satinarc 15:**

- **APPROVALS:**
  - Lloyd's Register of Shipping: Grade 3Y40M
  - American Bureau of Shipping: Grade 3Y400M

- **TYPICAL ALL WELD METAL ANALYSIS:**
  - C: 0.07% Mn: 1.70% Si: 0.85% S: 0.014% P: 0.016%

- **TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (AS WELDED):**
  - Yield Stress: 480 MPa
  - Tensile Stress: 590 MPa
  - Elongation: 28%
  - CVN Impact Values: 65J at -20°C

**Autocraft SA2/Satinarc 15:**

- **APPROVALS:**
  - Lloyd's Register of Shipping: Grade 3Y40M
  - American Bureau of Shipping: Grade 3Y400M

- **TYPICAL ALL WELD METAL ANALYSIS:**
  - C: 0.07% Mn: 1.70% Si: 0.85% S: 0.014% P: 0.020%

- **TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (AS WELDED):**
  - Yield Stress: 480 MPa
  - Tensile Stress: 590 MPa
  - Elongation: 28%
  - CVN Impact Values: 65J at -20°C

**FLUX CONSTITUENTS:**

- Basicity Index* = 0.8
  - SiO₂ + TiO₂: 22-23%
  - CaO + MgO: 15-21%
  - Al₂O₃ + MnO: 4-5%

*Basicity Index to Boniszewski
We’ve got Cutting & Welding Covered.

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- Engine Driven Welding Equipment

Welding Consumables
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- Electrodes, Rods & Fluxes
- Hardfacing Electrodes and Wires

Gas Equipment & Accessories
- Comet Gas Outlets and Regulators
- Blowpipes, Cutters and Consumables
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