**Alloy B3® Wire & Rod**

Washington Alloy B-3® alloy is an additional member of the nickel-molybdenum family of alloys with excellent resistance to hydrochloric acid at all concentrations and temperatures. Found for welding Ni-Mo alloy such as ASTM B333, B335, B366, B564, B619, B622 and B626 as well as other nickel base alloys to their self or to steels. It also withstands sulfuric, acetic, formic and phosphoric acids, and other non-oxidizing media. B-3 alloy has a special chemistry designed to achieve a level of thermal stability greatly superior to that of its predecessors, e.g. HASTELLOY B-2 alloy. B-3 alloy has excellent resistance to pitting corrosion, to stress-corrosion cracking and to knife-line and heat-affected zone attack. The improved thermal stability of HASTELLOY B-3 alloy minimizes the problems associated with fabrication of B-2 alloy components. This is due to the reduced tendency to precipitate deleterious intermetallic phases in B-3 alloy, thereby, affording it greater ductility than B-2 alloy during and following various thermal cycling conditions. B-3 alloy is suitable for use in all applications previously requiring the use of HASTELLOY B-2 alloy. Like B-2 alloy, B-3 is not recommended for use in the presence of ferric or cupric salts as these salts may cause rapid corrosion failure. Ferric or cupric salts may develop when hydrochloric acid comes in contact with iron or copper. May also weld DIN specification of 17744 No. 2.4600 & TUV Werkstoffblatt 517.

**TYPICAL GMAW WELDING PROCEDURES; DCEP Spray Arc**

<table>
<thead>
<tr>
<th>Wire Diameter</th>
<th>Wire Speed (ipm)</th>
<th>Amps</th>
<th>Volts</th>
<th>Electrical Stick-out</th>
<th>Argon (cfh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.030</td>
<td>550-750</td>
<td>175-250</td>
<td>26-32</td>
<td>3/8-1/2&quot;</td>
<td>30-40</td>
</tr>
<tr>
<td>0.035</td>
<td>425-575</td>
<td>175-300</td>
<td>26-32</td>
<td>3/8-1/2&quot;</td>
<td>30-40</td>
</tr>
<tr>
<td>0.045</td>
<td>250-350</td>
<td>200-310</td>
<td>26-32</td>
<td>3/8-1/2&quot;</td>
<td>35-50</td>
</tr>
<tr>
<td>0.062</td>
<td>125-200</td>
<td>250-330</td>
<td>27-33</td>
<td>1/2&quot;-5/8&quot;</td>
<td>35-50</td>
</tr>
</tbody>
</table>

**TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit (cfh)**

<table>
<thead>
<tr>
<th>Wire Diameter</th>
<th>Wire Speed (ipm)</th>
<th>Amps</th>
<th>Volts</th>
<th>Electrical Stick-out</th>
<th>Argon (cfh)</th>
<th>Base thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.035</td>
<td>150-200</td>
<td>90-110</td>
<td>18-21</td>
<td>3/8-1/2&quot;</td>
<td>35-45</td>
<td>1/2&quot;-1/8&quot;</td>
</tr>
<tr>
<td>0.045</td>
<td>175-225</td>
<td>100-140</td>
<td>19-23</td>
<td>3/8-1/2&quot;</td>
<td>40-50</td>
<td>1/2&quot;-3/16&quot;</td>
</tr>
</tbody>
</table>

**TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip**

<table>
<thead>
<tr>
<th>Filler Wire Size</th>
<th>Tungsten</th>
<th>Wire Diameter</th>
<th>Volts</th>
<th>Gas Cup Size</th>
<th>Argon (cfh)</th>
<th>Base thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16&quot;</td>
<td>1/16&quot;</td>
<td>50-120</td>
<td>12</td>
<td>3/4&quot;</td>
<td>20</td>
<td>1/16-1/8&quot;</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>100-175</td>
<td>12</td>
<td>5/8&quot;</td>
<td>30</td>
<td>1/4-1/2&quot;</td>
</tr>
</tbody>
</table>

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

**AWS CHEMISTRY REQUIREMENTS (%) & TYPICAL WELD METAL STRENGTHS;**

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>0.01 max</td>
<td>0.015</td>
</tr>
<tr>
<td>Manganese</td>
<td>3.00 max</td>
<td>3.50</td>
</tr>
<tr>
<td>Iron</td>
<td>1.0-3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.03 max</td>
<td>0.10</td>
</tr>
<tr>
<td>Sulphur</td>
<td>0.01 max</td>
<td>0.10</td>
</tr>
<tr>
<td>Silicon</td>
<td>0.10 max</td>
<td>0.20</td>
</tr>
<tr>
<td>Copper</td>
<td>0.20 max</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Ni + Mo is 94.0-98.0; Ta is 0.02 max; Zr is 0.10 max

**AVAILABLE SIZES:**

TN B3 = Cut lengths of 1/16, 3/32

Other sizes available – please inquire

**SPECIFICATIONS:**

ANSI/AWS A5.14 ERNiMo-10

**EAST COAST**

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