CODIFICATION: AWS : SFA 5.5 E9018-B3

CHARACTERISTICS AND APPLICATIONS:
Weld metal having strict control on S, P, As, Sn & Sb will improve the subzero impact property and resists temper embrittlement. Weld metal retains its mechanical properties after prolonged heat treatments. Ideal for welding steam generating equipments and reactor vessels. The weld metal displays excellent tensile strength and creep resistance. Specially applicable wherever temper embrittlement resistance is required.

TYPICAL CHEMICAL COMPOSITION OF ALL WELD METAL:

<table>
<thead>
<tr>
<th>Element</th>
<th>C</th>
<th>Mn</th>
<th>Si</th>
<th>Cr</th>
<th>Mo</th>
<th>Sb</th>
<th>As</th>
<th>S</th>
<th>P</th>
<th>Sn</th>
<th>Al</th>
<th>V</th>
<th>Ni</th>
<th>Cu</th>
<th>Ti</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>0.06</td>
<td>0.5</td>
<td>0.2</td>
<td>2.4</td>
<td>1.0</td>
<td>0.001</td>
<td>0.0035</td>
<td>0.007</td>
<td>0.007</td>
<td>0.0035</td>
<td>0.002</td>
<td>0.01</td>
<td>0.10</td>
<td>0.02</td>
<td>0.002</td>
</tr>
</tbody>
</table>

TYPICAL MECHANICAL PROPERTIES OF ALL WELD METAL:

<table>
<thead>
<tr>
<th>Condition</th>
<th>YS (MPa)</th>
<th>UTS (MPa)</th>
<th>%El (L-4d)</th>
<th>CVN Impact at minus 40°C</th>
<th>Hardness (VPN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR at 690°C/ 1 hr</td>
<td>550</td>
<td>640</td>
<td>22</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SR at 690°C/ 6 hrs</td>
<td>455</td>
<td>560</td>
<td>24</td>
<td>90</td>
<td>180</td>
</tr>
<tr>
<td>SR at 690°C/ 40 hrs</td>
<td>425</td>
<td>535</td>
<td>26</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

DIFFUSIBLE HYDROGEN CONTENT: 4 ml/100 gms of weld metal (max.).

X-FACTOR: \((10P + 5Sb + 4Sn + As) / 100 \leq 15.0\) (elements in ppm)

J-FACTOR: \((%Si + %Mn) \times (%P + %Sn) 10^4 \leq 125\)

PE: \((C + Mn + Mo + Cr/3 + Si/4) + 3.5(10P + 5Sb + 4Sn + As) < 3\)

STEP COOLING REQUIREMENT: \(CvTr54 + 2.5 \triangle CvTr54SC < 10°C\)
(Where \(CvTr54\): Transition temperature at absorbed energy of 54J of heat treated specimen. \(\triangle CvTr54SC\): Shift in 54J transition temperature due to step cooling)

CURRENT & PACKING DATA: AC/DC (+)

Size (mm) : 6.3x450 5x450 4x350 3.15x350 2.5x350
Dia x length
Current Range : 250-300 200-250 140-180 100-130 70-100
(Amps)
Qty. (Pcs. / Carton): 25 35 55 75 125

PRECAUTIONS:
● Rebake the electrodes at 300-350°C for one hour.
● Use short arc and stringer bead.