Flux-Cored TIG rod for open root pass welding with no back purge necessary

**PREMIARC** TG-X308L [AWS A5.22 R308LT1-5]
**PREMIARC** TG-X309L [AWS A5.22 R309LT1-5]
**PREMIARC** TG-X316L [AWS A5.22 R316LT1-5]

**PREMIARC** TG-X347 [AWS A5.22 R347T1-5]
**PREMIARC** TG-X2209 [N/A]

### Features and typical fields of application

- Flux Cored TIG rod for open root pass without requiring back purging creating slag to protect the back side bead from the oxidation of weld metal.

- Compatible with conventional GTAW welding equipment with DCEN polarity and straight Argon shielding gas.

### Comparison of Time and Shielding gas Consumption

- Back shielding condition per AWS D10.12
- Welding time below includes grinding and tack welding with 50% of arc time percentage
- 50cfh for pre purging, 17cfh is for back shielding and 32cfh for welding is used for the following prediction

**Example #1:** 2” diameter pipe (root gap; 1/16” for solid wire, 5/64” for TG-X)

**Example #2:** 12” diameter pipe (root gap; 3/32” for solid wire, 7/64” for TG-X)
**Premiarc** TG-X308L [AWS A5.22 R308LT1-5]  
**Premiarc** TG-X309L [AWS A5.22 R309LT1-5]  
**Premiarc** TG-X316L [AWS A5.22 R316LT1-5]  
**Premiarc** TG-X347 [AWS A5.22 R347T1-5]  
**Premiarc** TG-X2209 [N/A]

**Typical result of weld metal test with 100%Ar**

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>Cr</th>
<th>Ni</th>
<th>Others</th>
<th>0.2%PS (psi)</th>
<th>TS (psi)</th>
<th>EL (%)</th>
<th>CVN (ft-lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG-X308L</td>
<td>0.02</td>
<td>0.80</td>
<td>1.66</td>
<td>19.6</td>
<td>10.31</td>
<td>-</td>
<td>65,250</td>
<td>92,800</td>
<td>47</td>
<td>94 at 32F</td>
</tr>
<tr>
<td>TG-X309L</td>
<td>0.02</td>
<td>0.81</td>
<td>1.52</td>
<td>24.3</td>
<td>12.62</td>
<td>-</td>
<td>76,850</td>
<td>98,600</td>
<td>32</td>
<td>80 at 32F</td>
</tr>
<tr>
<td>TG-X316L</td>
<td>0.02</td>
<td>0.87</td>
<td>1.55</td>
<td>18.9</td>
<td>12.47</td>
<td>Mo:2.3</td>
<td>63,800</td>
<td>87,000</td>
<td>38</td>
<td>88 at 32F</td>
</tr>
<tr>
<td>TG-X347</td>
<td>0.02</td>
<td>0.80</td>
<td>1.60</td>
<td>19.1</td>
<td>10.21</td>
<td>Nb:0.7</td>
<td>66,700</td>
<td>91,350</td>
<td>48</td>
<td>94 at 32F</td>
</tr>
<tr>
<td>TG-X2209</td>
<td>0.02</td>
<td>0.64</td>
<td>0.87</td>
<td>23.1</td>
<td>9.5</td>
<td>Mo:3.3 N:0.15</td>
<td>87,500</td>
<td>117,600</td>
<td>32</td>
<td>102 at -60F</td>
</tr>
</tbody>
</table>

**Recommended welding conditions and deposition rate**

<table>
<thead>
<tr>
<th>Plate Thickness</th>
<th>Root Gap</th>
<th>Welding Current (DCEN)</th>
<th>1/8” to 3/16”</th>
<th>1/4”-11/16”</th>
<th>over 3/8”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8” to 3/16”</td>
<td>5/64”</td>
<td>80 – 90A</td>
<td>90 – 105 A</td>
<td>90 – 110A</td>
<td></td>
</tr>
<tr>
<td>1/4”-11/16”</td>
<td>3/32”</td>
<td>90 – 105 A</td>
<td>90 – 110A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>over 3/8”</td>
<td>7/64”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
- Formation of key-hole during welding is the key in order to supply slag onto reverse side bead.
- Use TG-X for root pass in single side welding only not for filler or cap passes.

![groove preparation diagram]

Table shown are approximate values that will vary depending on welding conditions (WESO, Cable length etc.). Arc voltage shown are for straight CO₂ shielding gas. For 75%Ar-25%CO₂ use two volts less than shown.

**Size /Packages**

0.087” (2.2mm) diameter x 39” length in 11lbs polyethylene tube

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