Specifications & Codes: NCDOT Standard Specifications/AASHTO/AWS D1.5, Section 2, 5 and 12


Filler Metal Specification: AWS A5.1 Classification: E-7018

Manufacturer: NCDOT Approved Single or Multiple Pass both Weld Horizontal

Welding Current: DC Polarity: Positive Progression: N/A

Root Treatment: Back Gouge with a grinder to sound metal prior to applying weld to the second side.

Preheat Temp: 100° minimum Interpass: 450° maximum Post Heat: N/A

<table>
<thead>
<tr>
<th>Pass Num.</th>
<th>Electrode Size</th>
<th>Welding Current</th>
<th>Travel Speed</th>
<th>Joint Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1/8”</td>
<td>90-150 Amperes</td>
<td>20-23 Volts</td>
<td>6-9 ipm</td>
</tr>
<tr>
<td>All</td>
<td>5/32”</td>
<td>120-200</td>
<td>21-24</td>
<td>6-10 ipm</td>
</tr>
</tbody>
</table>

Preheat:

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Min. Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 3/4”</td>
<td>100°</td>
</tr>
<tr>
<td>Over 3/4” to 1 1/2”</td>
<td>100°</td>
</tr>
<tr>
<td>Over 1 1/2” to 2 1/2”</td>
<td>150°</td>
</tr>
<tr>
<td>Over 2 1/2”</td>
<td>225°</td>
</tr>
</tbody>
</table>

WPS Description: Double Bevel Groove With Back Gouge

Written By: Randy Dempsey, CWI/CWE, TT IV

Signature:

WPS #: 031711023 Authorized By: Steve Walton, Metals Engineer

Revision #: 1 Signature:

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)
DOUBLE BEVEL GROOVE with Back Gouge

WPS DOUBLE BEVEL GROOVE with Back Gouge 031711023 R1
JOINT DETAIL ATTACHMENT

Joint Details

Weld Symbol definitions per AWS A2.4:2007

- Back Gouge
- Double BEVEL Groove, w/ Groove Angle
- Field Weld Symbol

Required before welding side two

45°
Illustrations for a double bevel groove with back gouge.

Typical fit-up using 1/8" electrodes to set the root opening.

Root pass after cleaning.

Inadequate back gouge.

Adequate back gouge.

Completed weld.

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)