NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
3G-4G PLATE CERTIFICATION TEST (BRIDGE WELDER)
WELDING PROCEDURE SPECIFICATION (WPS) AWS D1.5

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

Material Specifications: ASTM A-36, 3/8” Thickness


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

Manufacturer: NCDOT Approved Electrodes Single or Multiple Pass Multiple Position of Weld Vertical & Overhead

Welding Current: DC Polarity: Positive Progression: Vertical – up

Root Treatment: N/A

Preheat Temp: 50° minimum Interpass: 450° maximum Post Heat: N/A

### Joint Details

<table>
<thead>
<tr>
<th>Pass Num.</th>
<th>Electrode Size</th>
<th>Welding Current Amperes</th>
<th>Volts</th>
<th>Travel Speed</th>
<th>SEE ATTACHMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1/8”</td>
<td>90-150</td>
<td>20-23</td>
<td>6-9 ipm</td>
<td></td>
</tr>
</tbody>
</table>

**PREHEAT**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Min. Temp.</th>
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<tbody>
<tr>
<td>Up to 3/4”</td>
<td>50°</td>
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</table>

**COMMENTS:**

- The backing bar must be in close contact with the test material.
- Remove all rust and mill scale within one inch of the area to be welded prior to fit-up. Remove all slag and spatter between passes. Clean the completed weld of all debris, slag and spatter.
- Fill the groove to the full cross section of the member.

WPS Description 3G-4G Plate Certification Test

Written By: Randy Dempsey, CWI/CWE, Transportation Technician IV

Signature: [Signature]

WPS #: 040209009

Authorized By: Steve Walton, Metals Engineer

Signature: [Signature]
WPS 3G-4G PLATE CERTIFICATION TEST 040209009 R3
JOINT DETAIL ATTACHMENT

3G-4G GROOVE WELD
JOINT DETAILS

Weld Symbol definitions per AWS A2.4:2007

BACKING BAR
BEVEL WELD, ARROW SIDE with BEVEL ANGLE & ROOT OPENING
Illustrations for 3G-4G Plate Certification (Bridge Welder)

Coupon Fit-up.

Completed weld.

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)