NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
SIP STRAP  
WELDING PROCEDURE SPECIFICATION (WPS) AWS D1.5

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

Electrodes Single or Multiple Pass: Single

Position of Weld: Flat, Horizontal

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

Root Treatment: N/A

Preheat Temp: 50° 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</td>
<td>20-23</td>
<td>SEE ATTACHMENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6-9 ipm</td>
<td></td>
<td></td>
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</tbody>
</table>

PREHEAT

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Min. Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 3/4”</td>
<td>50°</td>
</tr>
<tr>
<td>Over 3/4” to 1 1/2”</td>
<td>70°</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>

PREHEAT

WPS Description: SIP Strap

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

Signature:

Randy Dempsey

WPS #: 021510015

Authorized By: Steve Walton, Metals Engineer

Revision #: 2

Signature:

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)
WPS STEEL GIRDER with SIP STRAP 021510015 R2
JOINT DETAIL ATTACHMENT

SIP Angle

Strap

Strap

Steel Girder

NOTE: Right SIP angle not shown for clarity

as directed by the plans

STEEL GIRDER
W/SIP STRAP DETAILS

Weld Symbol definitions per AWS A2.4:2007

FIELD WELD SYMBOL

FILLET WELD, ARROW SIDE
Illustrations for welding an SIP Strap over a steel girder.

Unacceptable placement (strap needs to be in contact with flange)

Acceptable

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)