

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ENCASEMENT PIPE WELDING PROCEDURE SPECIFICATION (WPS) AWS D1.1

Specifications & Codes: NCDOT Standard Specifications/AASHTO/AWS D1.1, Sections 2 thru 6

Material Specifications: ASTM A-36, A572, (A709-36, 50), (M270-GR250, 345) Unlimited Thickness

Welding Process: SMAW Manual or Semi- Automatic or Automatic: Manual

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

Manufacturer: NCDOT Approved Electrodes Single or Multiple Pass both Position of Weld Flat, Horizontal, Vertical, Overhead

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

Root Treatment: N/A

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

Pass Num.	Electrode Size	Welding Current		Travel Speed		Joint Details
		Amperes	Volts			
All	1/8" 5/32"	90-150 120-200	20-23 21-24	6-9 ipm 6-10 ipm		SEE ATTACHMENT

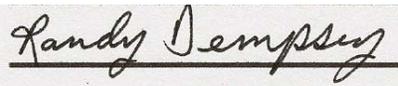
PREHEAT	
Thickness	Min. Temp.
Up to 3/4"	100°
Over 3/4" to 1 1/2"	100°
Over 1 1/2" to 2 1/2"	150°
Over 2 1/2"	225°

**COMMENTS:**

**Remove all coating, rust, dirt and mill scale within one inch of the area to be welded prior to fit-up. Remove all slag, spatter and weld discontinuities between passes. Clean the completed weld of all debris, slag and spatter.**

WPS Description: Encasement-Pipe

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

Signature: 

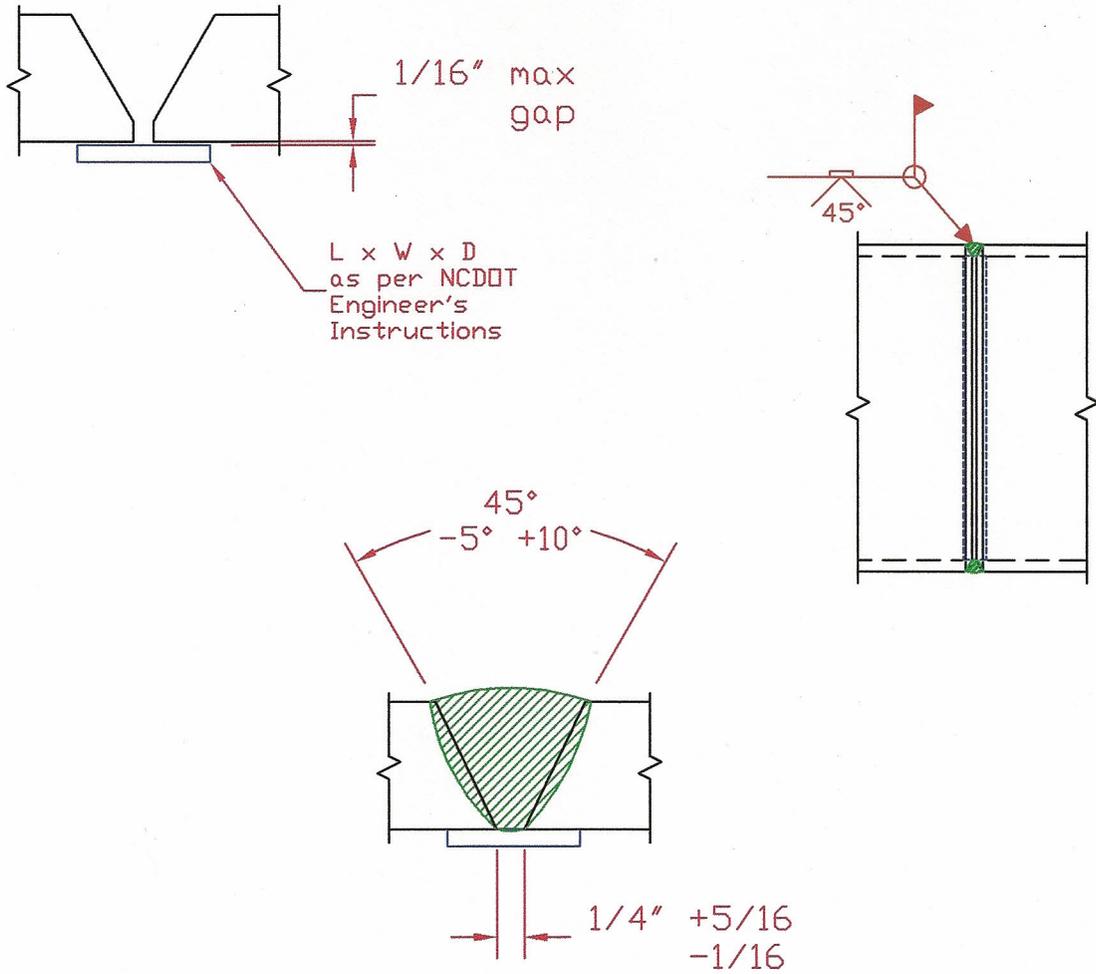
WPS #: 081109012

Authorized By: Steve Walton, Metals Engineer

Revision #: 3

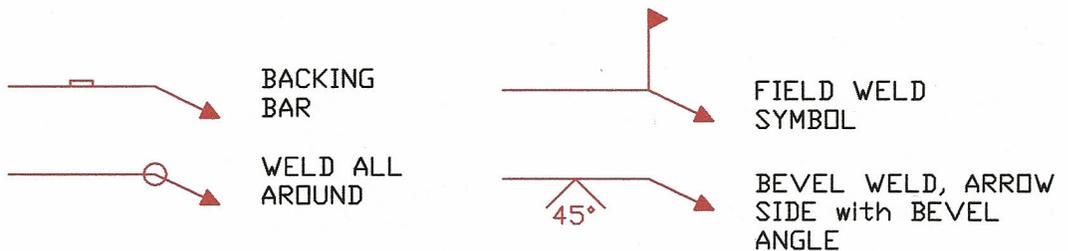
Signature: 

WPS ENCASEMENT-PIPE 081109012 R3  
JOINT DETAIL ATTACHMENT



ENCASEMENT-PIPE SPLICE DETAILS

Weld Symbol definitions per AWS A2.4:2007



## Illustrations for Encasement Pipe Welding



Unacceptable weld (interior of pipe not welded)



Acceptable weld (incomplete area cleaned and then welded)

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)