Vermont Agency of Transportation

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CK'D BY GML CK'D BY JWC

6:29 am, Feb 29, 2012

RESUBMIT _____ APPROVED X

BY KMH DATE 3/14/2012

WELDING PROCEDURE SPECIFICATION (WPS) YES ( X )

PREQUALIFIED X QUALIFIED BY TESTING _____

PROCEDURE QUALIFICATION RECORD (PQR) YES ( )

Company Name: ARC Universal, Inc.

Welding Process(es): GMAW

Supporting PQR No.(s): _____

Identification # ARC WPS 5M3b

Revision 5 Date 2-14-12 By DVH

Authorized by STEVE HOWARD Date 12-5-05

Type - Manual ( ) Semi - Automatic (X)

Machine ( ) Automatic ( )

**JOINT DESIGN USED**

Type: Fillet

Single X Double Weld ( )

Backing ( ) NO (X)

Backing Material: _____

Root Opening: 0 Root Face Dimension: N/A

Groove Angle: N/A Radius (J-U): N/A

Back Gouging: YES( ) NO( ) Method: N/A

**BASE METALS**

Material Spec.: A709

Type or Grade: 50

Thickness: Groove _____ Fillet UNLIMITED

Diameter (Pipe): _____

**FILLER METALS**

AWS Specification: A5.18

AWS Classification: ER70S-6 Lincoln Superarc L-56

**SHIELDING**

Flux: _____ Gas: 98%ARGON 2%OXY

Composition

Electrode - Flux (Class): _____ Flow Rate: 25-35 cfh

Gas Cup Size: 5/8

preheat up to 3/4" - 50 degrees F 3/4" - 1 1/2"-70 degrees F

1 1/2" - 2 1/2"- 150 degrees F

over 2 1/2" - 225 degrees F

**POSITION**

Position of Groove: _____ Fillet 1F 2F

Vertical Progression: ( )

**ELECTRICAL CHARACTERISTICS**

Transfer Mode (FCAW): Short Circuiting ( )

Globular ( ) Spray (X)

Current: AC ( ) DCEP (X) DCEN ( )

Pulsed ( )

OTHER: _____

**TECHNIQUE**

Stringer or Weave Bead: STRINGER

Multi-pass or Single Pass (per side): SINGLE/MULTI

Number of Electrodes: _____

Electrode Spacing: Longitudinal NA

Lateral NA

Angle NA

Contact Tube to Work Distance: 5/8" - 3/4"

Peening: NA

Interpass Cleaning: HAND/POWER TOOLS

**POSTWELD HEAT TREATMENT**

Temp: NA

Time: NA

**WELDING PROCEDURE**

| Pass or Weld Layer(s) | S | Filler Metals | | Current | | Volts | Travel Speed | Joint Details |
|---|---|---|---|---|---|---|---|---|
| | | Class | Diameter | Type & Polarity | Amps or Wire Feed Speed | | | |
| 1 1 | 3/16" | ER70S-6 | .035" | DCEP | 180-220 | 25-27 | 7-9 |  |
| 1 1 | 1/4" | " | .035" | " | 180-220 | 25-27 | 5-6 | |
| 1 1 | 5/16" | " | .035" | " | 180-220 | 25-27 | 4-5 | |
| 1 1 | 3/8" | " | .035" | " | 180-220 | 25-27 | 3-4 | |
| 1 2+ | 7/16" | " | .035" | " | 180-220 | 25-27 | 2-3 | |
| 1 2+ | 1/2" | " | .045" | " | 270-330 | 28-30 | 2-3 | |