



Fermi National Accelerator Laboratory

Technical Division-Machine Shop

Welder Procedure Qualification Record

Date
12/31/2008

Revision2 Revision Date 2/9/2009 Remarks: Add in accordance with Fermi WPS Ti-1 & add P61 & P62 to P numbers qualified
R 1-Revised to correct spelling errors & Remove WPQR from title(1/8/9).

In accordance with Fermi WPS Ti-1

Welders Name: Daniel J. Watkins	Fermi ID# 03991N	Weld Stamp # 24
WPS Number: Fermi WPS Ti-1	Test Coupon T-714091	Production Weld N/A
Welding Process/Type: GTAW/Manual	Welded in Inert Chamber @ 10PPM with 99.99% Argon	
Type of Joint Welded: Pipe Groove Weld	Joint Types Qualified: Groove and Fillet Welds	
Open Root without solid backing		
Base Metals Welded: SB-338, Grade 2	to SB-338, Grade 2	

Welder Variables (QW-350)	Actual Variables Used	Range Qualified
AWS Classification:	ERTi-2	
Filler Metal Specification (SFA)	5.16	5.16
Filler Metal F-No.	F-51	F-51 thru F-55
Filler Metal Product Form	Bare(Solid)	Bare (Solid)
Consumable Insert	No Insert Used	Without Insert Only
P- or S- Number to P- or S- Number:	P-No. 51 to P-No. 51	P-No. 51, 52, 53, 61, 62
Base Metal Thickness (inches):	0.160"	WPS Limit
Pipe Diameter (inches):	5.50"	2.875" minimum
Deposit Thickness (inches)	0.197"	0.394" maximum
Welding Position/Progression	5G	F, V, O
Backing Gas	Argon Backing Gas Used	With Backing Gas Only
GTAW-Current/Polarity	DCEN	DCEN Non-Pulsing

Machine Welding Variables (QW-360)	Actual Variables	Range Qualified
Direct/Remote Visual Control	N/A	N/A
Automatic Voltage Control	N/A	N/A
Automatic Joint Tracking	N/A	N/A
Welding Position	N/A	N/A
Consumable Insert	N/A	N/A
Backing	N/A	N/A
Single/Multiple Pass Per Side	N/A	N/A

Fillet Welds: Qualified to make fillet welds of any size on all base material thickness and pipe diameters of any size.

Notes: Welded in inert chamber with 99.99% Ultra Pure Argon @ 10 PPM Oxygen content, inverter power source, 3/32" Ceriated Tungsten with a #4 Gas Lens Cup. Joint completed in two passes. Joint configuration: 37.5 degree bevel with a 1/32" land and 1/16" root gap. 5.50" diameter pipe coupon with a 0.160 thick wall by 8" long. Slight weave on cover pass.

Guided Bend Test (QW-160) Bodycote Testing Group Test # T-714091

Visual examination results: Visual exam satisfactory per QW-302.4 and QW-194

Radiographic test results: Acceptable per QW-302.2 and QW-191

Mechanical/Radiographic tests conducted by: Alloy Weld Inspection Company, Inc. Lab Test Number 166266

Welding Test conducted by: Fermi National Accelerator Laboratory Verification Number 61308-MR

We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Boiler and Pressure Vessel Code.

Fermi National Accelerator Laboratory

Roger Hiller
Authorized Representative

2/9/2009
Date