



# Fermi National Accelerator Laboratory

Technical Division-Machine Shop

## Welder Performance Qualification Record

In accordance with WPS Cajon/Orbital 003

Date  
3/11/2010

Revision:      Revision Date :      Remarks:

<b>Welders Name:</b>	Leonard Harbacek	<b>Fermi ID#</b>	12261N	<b>Weld Stamp</b>	8
<b>WPS Number:</b>	Cajon/Orbital 003	<b>Test Coupon</b>	Production Weld N/A		
<b>Welding Process/Type</b>	GTAW/Orbital		Automatic		
<b>Type of Joint Welded:</b>	Pipe Groove Weld	<b>Joint Types Qualified:</b>	Groove and Fillet Welds		
<b>Base Metals Welded:</b>	ASTM A269 316/316L		S8, Group 1		

Welder Variables (QW-350)	Actual Variables Used	Range Qualified
<b>AWS Classification:</b>		
<b>Filler Metal Specification (SFA)</b>	N/A	
<b>Filler Metal F-No.</b>	N/A	
<b>Filler Metal Product Form</b>	N/A	
<b>Consumable Insert</b>	No Insert Used	Without Insert
<b>P- or S- Number to P- or S- Number:</b>	S8, Group 1	All Qualified Materials
<b>Base Metal Thickness (inches):</b>	.049"	WPS Limits
<b>Pipe Diameter (inches):</b>	.500" Ø	Unlimited
<b>Deposit Thickness (inches)</b>	.049"	WPS Limits
<b>Welding Position/Progression</b>	5G	All
<b>Backing Gas</b>	Argon 99.9%	
<b>GTAW-Current/Polarity</b>	DCEN/Pulsing	

Machine Welding Variables (QW-360)	Actual Variables	Range Qualified
<b>Direct/Remote Visual Control</b>	N/A	N/A
<b>Automatic Voltage Control</b>	N/A	N/A
<b>Automatic Joint Tracking</b>	N/A	N/A
<b>Welding Position</b>	N/A	N/A
<b>Consumable Insert</b>	N/A	N/A
<b>Backing</b>	N/A	N/A
<b>Single/Multiple Pass Per Side</b>	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:** Qualified for all Qualified Welding Procedures using Automatic GTAW Process

ASME IX Guided Bend Test (QW-160)				ASME IX Weld Tensil (QW 150)		
<b>Face Bend #1</b>	Acceptable	<b>Root Bend #1</b>	Acceptable	<b>Specimen 001</b>	Ductile HAZ	<b>Test Reference No.</b> T002964
<b>Face Bend #2</b>	Acceptable	<b>Root Bend #2</b>	Acceptable	<b>Specimen 002</b>	Ductile WM	

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

**Radiographic test results:** N/A      **Radiographic tests conducted by:** N/A

**Mechanical Tests Conducted by:** Exova Materials Testing Laboratory

**Welding of Test Coupon conducted by:** Fermi National Accelerator Laboratory      **Verification Number** 2012010-3RH

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  Authorized Representative       Date