Diffusible Hydrogen - AWS A4.3

Project No.:	12015CSL-01	**Weld No.:**	12-8916 (PQ1239M38)
		Customer:	FBTS Fundacao Brasileira de Tecnologia da Soldagem
Job No.:	2012-166786		
		Address:	Rua Primeiro de marco, 23-17 Rio de Janeiro, 20010-000
Welder:	Josh Shoemaker	**Weld Date:**	August 7, 2012

FILLER METALS

Consumable Lot No.:	9770
Consumable Type:	ELBras E7018
Consumable Diameter:	3.25mm
Manufacturer:	ELBras E7018
Specification:	AWS 5.1
Classification:	E7018-1

EQUIPMENT

Power Source:	Lincoln 275
Wire Feeder:	N/A
Data Acquisition:	# 5 S/N 984
Temperature Probe:	N/A
Torch:	Tweco 200
Nozzle Diameter:	3/4-in.
Manual / Mech.:	Manual
Side Beam:	#12

WELDING PROCEDURE

Polarity:	AC
Average Current (amps):	119
Average Voltage (volts):	31.3
Avg. Wire Feed Speed (ipm):	N/A
Average Travel Speed (ipm):	14.0
Stick-Out (in.):	N/A
Shielding Gas:	None
Flow Rate (cfh):	N/A

Analytical Apparatus:	Varian Gas Chromatograph-CP 3380
Clamping Fixture:	Water Cooled
Copper Foil Used:	N/A

BASE MATERIAL

Joint Type:	Bead on plate
Plate Material:	A36 (Blue)
Heat No.:	N120440

WELDING RECORD

Relative Humidity (%): 39% Temperature (^{o}F): 79.3

Sample Number	(PQ1239M38) -1	(PQ1239M38) -2	(PQ1239M38) -3	(PQ1239M38) -4
Gas Flow Rate (cfh)	N/A	N/A	N/A	N/A
Wire Feed Speed (ipm)	N/A	N/A	N/A	N/A
Average Current (amps)	119	118	118	120
Average Voltage (volts)	30.8	30.9	31.4	31.9
Travel Speed (ipm)	14	14	14	14
Weld Time (sec)	12.9	13.2	16.4	18.2
Total Bead Length (mm)	115	121	120	121
Starting Bead Length (mm)	28	25	24	23
Run-off Bead Length (mm)	6	18	17	20
Heat Input (kJ/in.)	15.7	15.6	15.9	16.4

Note: The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under Federal Statutes including Federal Law, Title 18, Chapter 47.

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Job No.: 2012-166786
Weld No.: 12-8916 (PQ1239M38)
Customer: FBTS Fundacao Brasileira de Tecnc
Address: Rua Primeiro de marco, 23-17
Rio de Janeiro, 20010-000
Analyzed By: Diane Reef
Analysis Date: August 8, 2012

FILLER METALS

Consumable Type: ELBras E7018
Consumable Lot No.: 9770
Consumable Diameter: 3.25mm
Specification: AWS 5.1
Classification: E7018-1
Manufacturer: ELBras E7018

HYDROGEN ANALYSIS USING GAS CHROMATOGRAPH METHOD

Cold Storage Temperature (^{o}C): -196
Cold Storage Time (hrs): 1 hr
Specimen Warmed to 0°C: Yes
Hydrogen Evolution Time (hrs): 6 hrs
Evolution Temperature (^{o}C): 150
Barometric Pressure (mm-Hg): 753.364
Analysis Temperature (^{o}C): 24.7

Sample Number	(PQ1239M38) -1	(PQ1239M38) -2	(PQ1239M38) -3	(PQ1239M38) -4
Test Chamber No.	TC-24	TC-28	TC-20	TC-13
Average Plate Count	3,311	2,788	3,697	3,053
Total Hydrogen Vol. @ STP (ml)	0.11	0.09	0.13	0.10
Initial Weight (g)	199.10	199.10	199.30	199.40
Final Weight (g)	203.69	203.42	204.42	204.51
Deposit Weight (g)	4.59	4.32	5.12	5.11
Diffusible Hydrogen (mL/100 g)	2.45	2.17	2.50	1.97

Average Diffusible Hydrogen **2.3** **(ml/100 g)**
Standard Deviation of Average **0.2** **(ml/100 g)**

COMMENTS

Analyzed By: Diane M. Reef
Title: Senior Technician

Reviewed By: Kristen M. Joseph
Title: Program Manager

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