

Certificate of Conformance for AWS D1.8

1. Trade designation: FRONTIARC-711
2. Size: 0.052 in. (1.3 mm)
3. Shielding gas: 100%CO₂
4. Current/Polarity: DCEP
5. Specification: AWS A5.20
6. Classification: E71T-1C/M-H8, E71T-12C/M-H8
7. Factory: Ibaraki plant, Japan
8. Test condition:

Heat input conditions	Low heat input	High heat input
Desired heat input level kJ/in. [kJ/cm]	30 [12]	79 [31]
Welding position	Flat(1G)	Vertical up (3G)
Welding Current Amp.	280	220
Arc Voltage V	29	24
Preheat temp. °F [°C]	≤ 120 [≤ 49]	250 ≤ [121 ≤]
Inter-pass temp. °F [°C]	≤ 250 [≤ 121]	450 ≤ [232 ≤]

9. Test result:

Wire diameter in. [mm]	Lot.No.	Average of Heat input kJ/in. [kJ/cm]	Layers -Passes	Tensile properties			Impact properties				
				0.2% O.S.	T.S.	EI	vE+70°F (21°C) ft-lbf [J]				
				ksi [MPa]	ksi [MPa]	(%)	1	2	3	Avg.	
0.052 [1.3]	AG8Z52 [Original]	33 [13]	7-16	74 [511]	84 [582]	30	119 [161]	122 [165]	140 [190]	127 [172]	
		79 [31]	5-6	61 [422]	75 [518]	32	140 [190]	128 [174]	140 [190]	136 [185]	
	AG8948 [Original]	30 [12]	7-18	78 [535]	86 [595]	30	128 [174]	116 [157]	132 [179]	125 [170]	
		76 [30]	5-6	59 [410]	73 [506]	32	166 [225]	172 [233]	192 [260]	176 [239]	
	AG8890 [Original]	30 [12]	7-18	76 [527]	86 [591]	29	122 [165]	109 [148]	121 [164]	117 [159]	
		79 [31]	5-6	59 [406]	73 [500]	35	161 [218]	129 [175]	124 [168]	138 [187]	
	AG2305 [Most recent]	30 [12]	7-16	80 [554]	89 [612]	29	140 [190]	156 [211]	157 [213]	151 [205]	
		79 [31]	5-7	59 [409]	72 [499]	33	237 [322]	274 [372]	258 [350]	257 [348]	
	AWS D1.8 Spec.	Low heat input	24-36 [9-14]	-	58min. [400 min.]	70min. [483 min.]	22 min.	40min. [54min.]			
		High heat input	63-95 [25-37]	-							

10. Diffusible Hydrogen Test

Condition	Lot. No.	Average(ml/100g)
As Received	AG9766	8
Exposure test (≥72hr)	AG9766	9
Note 1: Testing method: AWS A5.20		
Note 2: Exposure conditions: AWS D1.8 Annex E		

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