WASHINGTON ALLOY CO.

Tubular Welding Wire

For 490MPa high tensile steel

BW 799

■ Classifications

AWS A5.20 E71T-1C/1M H8, -9C/9M H8

CWB/CSA W48-06 E491T-9/9M H8

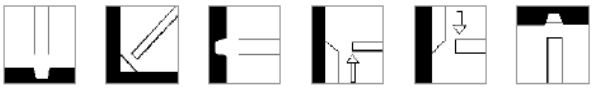
EN ISO 17632-A:2008 T46 2 P C/M 1 H10

EN ISO 17632-B:2008 T49 2 T1-1CA/MA-U H10

■ Descriptions

- It features fast-freezing slag system based upon rutile-type materials for all-positional welding.
- Typical applications include machineries, shipbuilding, offshore structures and general fabrications.
- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- It also provide excellent usability with stable arc, less spatter levels, smooth bead shape
- It is not recommended any drying treatment but, keep this product in the dry environment at specific atmoshere (- 15°C: max 60% RH, 15 - 25°C: max 50% RH, >25°C: max 40% RH)

■ Welding positions



■ Polarity & Shielding gas

- 100%CO_2 (15~25ℓ/min)
  75-85%Ar / Balance CO_2
- DCEP (DC+)

■ Typical Chemistry of all-weld-metal (%)

	C ≤0.12	Si ≤0.90	Mn ≤1.60	P ≤0.030	S ≤0.030	Ni ≤0.50	Mo ≤0.30
100%CO_2	0.03	0.40	1.20	0.013	0.012	0.015	0.012
Ar+25%CO_2	0.03	0.50	1.45	0.011	0.010	0.013	0.010

■ Typical Mechanical Properties of all-weld metal

	Y.S (Ksi) (MPa)	T.S. (MPa)	El. (%)	V-Notch Impact Values		Remark
				0°F(-20℃)	-20°F(-30℃)	
AWS A5.20	≥58(400)	70-90(520-620)	≥22		≥20ft.lbs(27J)	
100%CO_2	76.6(528)	83.3(574)	29	51.6(70)	33.2(45)	As welded
Ar+25%CO_2	81.0(558)	88.1(607)	28	62.7(85)	39.1(53)	

■ Typical Diffusible Hydrogen : (㎖/100gr. Deposited Metal)

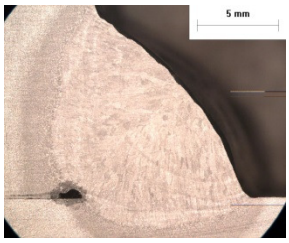
100%CO_2	75%Ar+100%CO_2	AWS A5.20 Spec.
4.5㎖/100gr.	6㎖/100gr.	≤ 8㎖/100gr. Deposited Metal

* As followed by AWS A4.3 Gas Chromatography

■ Bead appearance and Macro cross-section

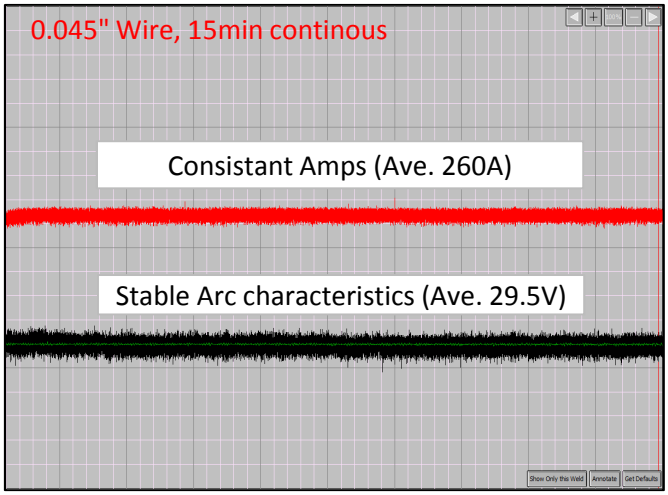
* Vertical-up welding

* H-Fillet weld



* Vertical weld

■ Excellent wire feeding and arc stability



■ Recommended welding parameters and deposition rate

Diameter Inches	(mm)	Amps	Volts	WFS (IPM)	Deposition Rate(lbs/kr)	Wire Stick-out (inches)
0.045	**1.2**	120	22-25	140	4.2	1"
		160	24-26	200	6.5	3/4"
		200	26-30	300	7.8	
		230	27-32	350	9.3	
		250	28-34	400	10.5	
0.052	**1.4**	140	23-26	120	3.7	3/4"
		180	24-27	200	5.0	
		210	26-28	250	6.5	
		250	27-32	300	8.0	
		320	30-34	420	11.5	1"
1/16	**1.6**	180	24-27	120	4.7	3/4"
		240	26-28	180	7.2	
		300	28-32	250	10.8	1"
		350	30-34	300	11.5	
		400	32-36	420	15.5	

* The upper table shown are approximately values for 100%CO_2 shielding gas at the conditions of DCEP.

* General recommendation is that mixture gas based on Ar gas can be used 1~2 volts lower than 100%CO_2

■ Standard Diameters and Packages

Dia.	(inch)	0.035	0.045	0.052	1/16
Spool	(lbs)	10, 33, 44			
Coil	(lbs)		60		
Drum	(lbs)		220, 500, 700		

■ Conformances:

Meets AWS D1.8: Structural Welding Code - Seismic Supplement