



# BW 777 Carbon Steel Flux Cored Welding Wire

U.S. ALLOY CO.  
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Quality Management System  
in accordance with  
**ISO 9001**  
Cert # 05-R0925



## ALLOY DESCRIPTION AND APPLICATION:

BW 777 is an all position baked carbon steel flux cored spooled electrode designed for single or multi-pass welding of carbon and low alloy steels. BW 777 rutile base slag features high deposition rates, nice spray transfer, low spatter/fume generation, flat to slightly convex bead contour, with slag covering the weld bead that resist crack and blowhole issues. AWS T-12 suffix indicates that these classifications have modified formulas to improve good impact toughness and to meet the lower manganese requirements of the A-No. 1 Analysis Group in the ASME *Boiler and Pressure Vessel Code*, Section IX. They, therefore, have an accompanying decrease in tensile strength and hardness. Typical applications include bridge/structural/general fabrication, ship building/hulls, auto, offshore structures, pressure vessels and piping. Base metal of ASTM A 516, A 572 are common for these fillers as well as many other mild or carbon steel base metals.

### TYPICAL FLUX CORED WELDING PROCEDURES; DCEP OPTIMUM IN BOLD (FLAT)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout	CO <sub>2</sub> (cfh)	Deposition lbs/hr
0.045	140- <b>360</b> -400	120- <b>200</b> -250	22- <b>28</b> -34	¾"-1"	35-45	4.2-10.5
0.052	120- <b>375</b> -425	140- <b>300</b> -320	23- <b>30</b> -34	¾"-1"	40-50	3.7-11.5
1/16"	120- <b>330</b> -420	180- <b>365</b> -400	24- <b>31</b> -36	¾"-1.25"	40-50	4.7-15.5

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.  
Lower voltage about 1-2 volts for mixed gas

### TYPICAL WELD METAL CHEMISTRY (%) AND WELD METAL PROPERTIES;

	AWS Spec		BW 777			AWS Spec		BW 777	
			CO <sub>2</sub>	75% Ar /25% CO <sub>2</sub>				CO <sub>2</sub>	75% Ar /25% CO <sub>2</sub>
Carbon	0.12	0.03	0.03	0.03	Tensile Strength (ksi)	70-90 ksi	83 ksi	85.6 ksi	
Manganese	1.75	1.25	1.53	1.53	Yield Strength (ksi)	58 ksi min	78.8 ksi	80.1 ksi	
Silicon	0.90	0.45	0.55	0.55	Elongation in 2"	22 % min.	29%	28%	
Sulfur	0.03	0.010	0.009	0.009	Charpy V-notch at -20°F	20 ft·lbs min.	31.7 ft·lbs	40.6 ft·lbs	
Phosphorus	0.03	0.012	0.011	0.011	Charpy V-notch at 0°F	n/a	72.7 ft·lbs	82.8 ft·lbs	

TYPICAL Diffusible Hydrogen: Heat # 91343905 with CO<sub>2</sub> was @ 4.3 (ml/100g weld) 75% Ar / 25% CO<sub>2</sub> was @ 5.8 (ml/100g weld)

**AVAILABLE SIZES:** TCB BW 777 = Spools of .045, 1/16"

Other sizes may be available – please inquire

**SPECIFICATIONS; ANSI/AWS A5.20** E71T-1C/1M,9C/9M,12C/12M H8  
**ASME SFA A5.20** E71T-1C/1M,9C/9M,12C/12M H8

**Meets Requirements of  
AWS D1.8  
Structural Welding  
Code - Seismic**

All single values on AWS composition are maximum percentages & Total others elements 0.50

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