



Rutile flux cored wire for mild steel welding applicable to post weld heat treatment with Ar-CO₂ mixed gas
AWS A5.20 E71T-12MJ

Features and typical fields of application

- 70 ksi class rutile flux cored wire suitable for post weld heat treatment (PWHT) without adverse degradation of mechanical properties while retaining acceptable mechanical properties
- Excellent impact toughness value down to -50F in the As-Welded condition and typical PWHT condition
- DW-A55ESR is designed to be used with 75-80%Ar-bal.%CO₂ shielding gas. It has a wide welding parameter range which makes this product very versatile for all position welding
- The optimized chemical design of the weld metal provides superior mechanical properties suitable for the most demanding industry specifications

Typical mechanical properties of weld metal per AWS A5.20 with typical PWHT conditions

PWHT condition	0.2% PS (psi)	TS (psi)	EL (%)	CVN (ft-Lbs)	
				-50F°	-40F°
As Welded*	75,850	85,450	29	103	93
1150°F x 3hours*	68,300	81,215	31	71	-
1020°F x 8hours**	60,600	73,900	30	102	50

* With 80%Ar-20%CO₂ shielding gas at 280A-30V

** With 75%Ar-25%CO₂ shielding gas at 210A-27V

Typical mechanical properties of weld metal per AWS A5.20 with typical PWHT conditions

PWHT condition	C	Si	Mn	P	S	Ni
As Welded*	0.05	0.47	1.36	0.014	0.008	0.41
1150°F x 3hours*	0.05	0.49	1.41	0.014	0.008	0.40
1020°F x 8hours**	0.04	0.48	1.28	0.017	0.009	0.44

* With 80%Ar-20%CO₂ shielding gas at 280A-30V

** With 75%Ar-25%CO₂ shielding gas at 210A-27V



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Recommended welding conditions and deposition rate

Wire Dia.	Wire Feed Speed (in./min)	Current (A)	Arc Voltage (V)	Deposition Rate (Lbs/hr)	Wire Stick-Out	Shielding Gas flow rate (CFH)
0.045"	140	120	23-26	4.0	5/8-3/4"	40-50
	200	160	25-28	6.0		
	290	200	27-30	8.0		
	330	220	27-30	9.0		
	400	250	28-30	10.5		
1/16"	100	180	24-27	4.5	3/4-1"	40-50
	165	240	25-28	7.0		
	190	260	26-29	8.0		
	250	300	29-31	10.0		
	300	340	30-32	11.5		

Table shown are approximate values that will vary depending on welding conditions (WESO, Cable length etc.).
Arc voltage shown are for straight CO₂ shielding gas. For 75%Ar-25%CO₂ use two volts less than shown.

Approvals

CWB, ABS

Available Products

Wire Dia.	0.045", 1/16"	Package	44Lbs spool
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DISCLAIMER

- Information in this material, such as chemical compositions and mechanical properties, is typical or an example for explaining the features and performances of our products, and it does not mean guarantee unless otherwise it is specified.
- Information contained herein is subject to change without notice. Please kindly contact Kobelco for latest information.



WARNING: This product can expose you to chemicals including Nickel and Titanium Dioxide, which are known to the State of California to cause cancer, and Chromium, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

