

# KOBELCO

## FAMILIARC™

# DW-A55ESR

Rutile-based  
Flux Cored wire



### Code Data

AWS A5.20 E71T-12MJ

CWB CSA W48-06 E491T-12MJ-H8

### Outstanding Features

- Meets AWS 5.20 E71T12MJ CODE. The “J” designator guarantees an impact value of >20ft/lbs at -40 °F. DW-A55ESR exceeds this minimum even after stress relieving.
- Produces weld metal with less than 0.5%Ni. This Ni composition allows this wire to conform to the A-1 composition in QW-440, section IX in the ASME standard.
- All position welding can be achieved with excellent flat bead appearance, negligible spatter, and easy slag removal.

### Applicable and usage

- Used in welding tank and pressure vessels where stress relieving is necessary. This wire is especially useful in welding nozzle necks of carbon steel pressure vessels and where low temperature service is required.

### Typical chemistry of all weld metal

	C	Si	Mn	P	S	Ni
As welded *	0.05	0.47	1.36	0.014	0.008	0.41
Stress relieved * (1150°F×3hrs)	0.05	0.49	1.41	0.014	0.008	0.40
Stress relieved ** (1150°F×8hrs)	0.04	0.48	1.28	0.017	0.009	0.44

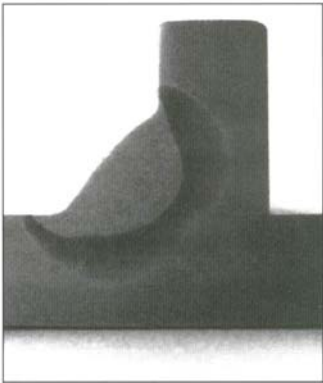
### Typical mechanical properties of all weld metal

	P.S (psi)	T.S (psi)	Elongation (%)	Impact value (ft-lbs)	
				-40 °F	-50 °F
As welded *	75,850	85,450	29	103	-
Stress relieved * (1150°F×3hrs)	68,300	81,215	31	71	-
Stress relieved ** (1150°F×8hrs)	60,600	73,900	30	102	50

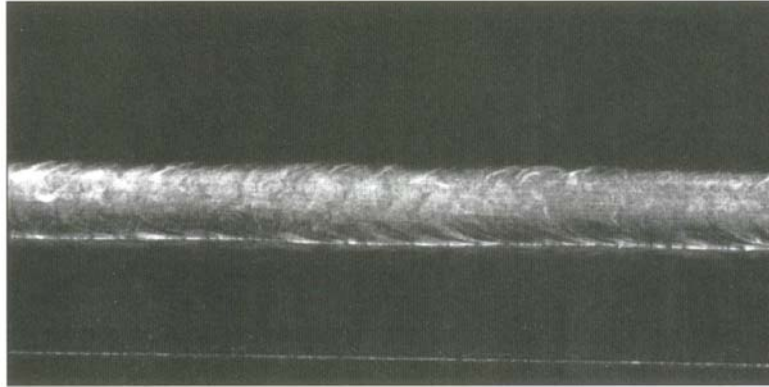
\* Welding parameters: 280A-30V, 80%Ar-20%CO<sub>2</sub>

\*\*Welding parameters:210A-27V, 75%Ar-25%CO<sub>2</sub>

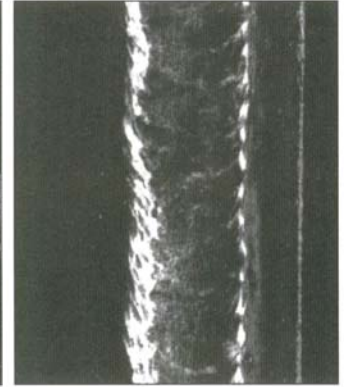
## Bead appearance and macro cross-section



Cross-section



Horizontal fillet welding: 250 amp



Vertical upward

### Recommended procedure ranges

Wire size (in.)	Wire extension from contact tip (in.)	Cup size (in.)	Shielding gas flow rate* (cubic ft/hr)
0.045	5/8-3/4	5/8	40-50
1/16"	3/4-1	5/8-3/4	40-50

\*Gas flow is measured at gas cup (Orifice) with wire in position.

**Diameters: 0.045", 1/16"**

**Spool size: 44lbs**

### Recommended welding condition and deposition rate

Wire size (in.)	Wire feeding speed (in./min)	Current (A)	Voltage (V)	Deposition rate (lbs/hr)
0.045	180	140	22-25	5.0
	200	160	23-26	6.0
	245	180	24-27	7.0
	290	200	25-28	8.0
	330	220	25-28	9.0
	380	240	26-28	10.0
	440	260	27-29	11.5
	520	280	27-29	13.0
	560	300	27-30	15.0
1/16	120	200	23-26	5.5
	190	260	24-27	8.0
	300	340	28-30	11.5
	380	380	28-31	14.0
	520	450	30-33	18.5

Tables shown are approximate values that will vary with changes in welding conditions.

\*DC-Electrode positive

\*\*Arc voltage is measured at wire feeder.