

DUAL SHIELD R-70 Ultra

AWS A5.20: E70T-1C-DH8/T-1M/T-9C-DH8/T-9M

FEATURES

This flux cored welding wire produces smoother arc characteristics and lower welding fumes than many competitive flux cored wires. Dual Shield R-70 Ultra is also designed to have a greater tolerance of mill scale and surface oxides. The notch toughness in the as welded condition is also improved. Bead contour is flat to slightly convex and slag coverage is complete. Dual Shield R-70 Ultra wire is designed for flat and horizontal single or multi-pass applications on low or medium carbon steels using 100% CO₂ shielding gas. Areas of application include railcar, heavy equipment, and general fabrication.

CLASSIFICATIONS AND APPROVALS

- Seismic Certified "D"
- AWS A5.20: E70T-1C-DH8/T-1M/T-9C-DH8/T-9M
- ASME SFA 5,20
- CERTIFIED BY C.W.B.- CSA W48
- A.B.S.- 2SA,2YSA
- QPL-24403/1: MIL-70T-1C
- D.N.V.- II YMS(H15)
- L.R.- 2S,2YS(H15)

WELDING PROCESS

- FCAW (Flux Core)

INDUSTRIES

- General Fabrication
- Civil Construction
- Shipbuilding
- Mobile Machinery
- Rail Road Car

TYPICAL MECHANICAL PROPERTIES

As Welded CO ₂	
Yield Strength	70 ksi, 485 MPa
Tensile Strength	82 ksi, 565 MPa
Reduction in Area	63%
Elongation in 2"	26%

CHARPY V-NOTCH PROPERTIES

Testing Temperature 0°F (-18°C)	
As Welded CO ₂	28 ft-lb, 38 J
Testing Temperature -20°F (-29°C)	
As Welded CO ₂	25 ft-lb, 34 J

WELD METAL ANALYSIS

CO ₂	
C	0.02%
Mn	1.4%
Si	0.5%
P	0.014%
S	0.008%

DUAL SHIELD R-70 Ultra continued

DEPOSITION TABLE						
Diameter in (mm)	Amps	Volts	Wire Feed Speed ipm (cm/min)	Shielding Gas	Deposition Rate lb/hr (kg/hr)	Efficiency (%)
.045 (1.2)	145	28	200 (508)	CO ₂	3.7 (1.7)	76
	190	29	300 (762)	CO ₂	5.6 (2.5)	80
	225	29	400 (1016)	CO ₂	7.6 (3.4)	82
	255	32	500 (1270)	CO ₂	9.6 (4.4)	82
	300	33	600 (1524)	CO ₂	11.6 (5.3)	84
.052 (1.4)	140	25	150 (381)	CO ₂	3.9 (1.8)	79
	180	26	200 (508)	CO ₂	5.1 (2.3)	80
	250	34	300 (762)	CO ₂	7.4 (3.4)	80
	300	35	400 (1016)	CO ₂	10.3 (4.7)	84
	340	36	500 (1270)	CO ₂	13.4 (6.1)	85
1/16 (1.6)	390	35	600 (1524)	CO ₂	16.1 (7.3)	86
	195	26	150 (381)	CO ₂	5.0 (2.3)	78
	265	28	250 (635)	CO ₂	8.7 (4.0)	83
	325	30	300 (762)	CO ₂	10.6 (4.8)	85
	365	31	350 (889)	CO ₂	12.4 (5.6)	84
5/64 (2.0)	385	31	400 (1016)	CO ₂	14.1 (6.4)	84
	450	33	500 (1270)	CO ₂	17.7 (8.0)	85
	170	27	125 (317.5)	CO ₂	6.5 (3.0)	80
	200	27	150 (381)	CO ₂	8.0 (3.6)	83
	235	28	200 (508)	CO ₂	10.8 (4.9)	84
3/32 (2.4)	280	29	250 (635)	CO ₂	13.6 (6.2)	85
	320	30	300 (762)	CO ₂	16.2 (7.4)	84
	220	27	100 (254)	CO ₂	8.4 (3.8)	88
	290	27	150 (381)	CO ₂	12.7 (5.8)	87
	350	28	200 (508)	CO ₂	16.9 (7.6)	86
410	29	250 (635)	CO ₂	21.1 (9.6)	86	
	475	32	300 (762)	CO ₂	25.0 (11.3)	85

DUAL SHIELD R-70 Ultra continued

FULL RANGE WELDING PARAMETERS							
Gas: CO ₂ .045"				Gas: CO ₂ .052"			
WFS ipm	Volts	Amps	Tip to Work in	WFS ipm	Volts	Amps	Tip to Work in
150-260	23-26	135-205	3/8-1/2	110-230	23-26	125-235	1/2-5/8
260-380	25-27	175-230	1/2-3/4	230-340	25-29	215-290	5/8-3/4
380-520	26-30	180-265	3/4-1	340-470	29-31	250-350	3/4-1

FULL RANGE WELDING PARAMETERS							
Gas: CO ₂ 1/16"				Gas: CO ₂ 5/64"			
WFS ipm	Volts	Amps	Tip to Work in	WFS ipm	Volts	Amps	Tip to Work in
110-200	25-28	165-270	5/8-3/4	125-200	27-31	285-375	3/4-1
200-300	27-30	245-345	3/4-1	200-300	28-32	375-475	1-11/4
300-420	28-32	290-415	1-11/4				

FULL RANGE WELDING PARAMETERS			
Gas: CO ₂ 3/32"			
WFS ipm	Volts	Amps	Tip to Work in
70-200	27-30	235-500	1-1 ^{1/4}
200-275	30-34	500-630	1 ^{1/4} -1 ^{1/2}

DUAL SHIELD R-70 Ultra continued

PART NUMBER / PRODUCT INFORMATION		
Part Number	Description	UPC
242201184	DS R-70 ULT 045X33#AWS	662303000363
242202307	DS R-70 ULT 045X60#CL	662303000950
242201176	DS R-70 ULT 1/16X33#AWS	662303000356
242201168	DS R-70 ULT 1/16X60#CL	662303000349
242202323	DS R-70 ULT 1/16X600#OMP	662303076634
242202935	DS R-70 ULT 5/64X500#POP	662303068370
242200970	DS R-70 ULT 5/64X60#CL	662303000240
242200947	DS R-70 ULT 3/32X60#CL	662303000226
242201218	DS R-70 ULT 3/32X250#SPOP	662303084264
242202372	DS R-70 ULT 3/32X500#POP	662303000998
242200996	DS R-70 ULT 3/32X600#RL	662303000264
242202489	DS R-70 ULT 3/32X850#WR 29	662303076207