

Dual Shield 70 Ultra Plus

Dual Shield 70 Ultra Plus is an all-position wire that is uniquely designed to provide high deposition, outstanding all position performance and a fume emission rate approaching that of solid wires. It is optimized for use with 90% Ar/10% CO₂ shielding but works well with mixes ranging from 75% Ar/25% CO₂ to 95% Ar/5% CO₂. Among the outstanding features of Dual Shield 70 Ultra Plus are a very wide operating window, very high out of position deposition rates (vertical up and overhead at over 12 lb/hr), and welds that are virtually spatter free. Dual Shield 70 Ultra Plus may be used in a variety of applications including railcar, automotive, heavy equipment, and general structural steel fabrication. It is especially recommended in applications where reduction of welding fume is a priority.

Classifications:	AWS A5.20:E71T-1M-H8/T-9M-H8, AWS A5.36:E71T1-M21A4-CS1-H8, AWS A5.36:E71T1-M20A2-CS1, ASME SFA 5.20, ASME SFA 5.36, ISO 173632-B T493T1-1MA- U
Approvals:	ABS , CWB CSA W48 E491T-1M-H8
Industry or Segmentation:	Bridge Construction, Civil Construction, Railcars, Mobile Equipment, Ship/Barge Building, Industrial and General Fabrication, Steel Industry, Process, Automotive

Approvals are based on factory location. Please contact ESAB for more information.

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
75% Ar - 25% CO₂			
As Welded	525 MPa (76 ksi)	595 MPa (86 ksi)	29 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO₂		
As Welded	-18 °C (0 °F)	72 J (53 ft-lb)
As Welded	-29 °C (-20 °F)	54 J (40 ft-lb)
90% Ar - 10% CO₂		
As Welded	-18 °C (0 °F)	92 J (68 ft-lb)
As Welded	-29 °C (-20 °F)	58 J (43 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P
75% Ar - 25% CO₂				
0.04	1.2	0.6	0.012	0.016

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Deposition Data					
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
92% Ar - 8% CO2					
1.2 mm (.045 in.)	150 A	25.5 V	508 cm/min (200 in./min)	1.8 kg/h (3.9 lb/h)	84 %
1.2 mm (.045 in.)	200 A	26.5 V	762 cm/min (300 in./min)	2.7 kg/h (6.0 lb/h)	86 %
1.2 mm (.045 in.)	245 A	27.5 V	1016 cm/min (400 in./min)	3.7 kg/h (8.1 lb/h)	86 %
1.2 mm (.045 in.)	293 A	29 V	1270 cm/min (500 in./min)	4.6 kg/h (10.1 lb/h)	87 %
1.2 mm (.045 in.)	335 A	30.5 V	1524 cm/min (600 in./min)	5.5 kg/h (12.2 lb/h)	87 %
1.4 mm (.052 in.)	157 A	24 V	381 cm/min (150 in./min)	1.8 kg/h (3.9 lb/h)	86 %
1.4 mm (.052 in.)	205 A	24.5 V	508 cm/min (200 in./min)	2.5 kg/h (5.5 lb/h)	86 %
1.4 mm (.052 in.)	265 A	26 V	762 cm/min (300 in./min)	3.7 kg/h (8.2 lb/h)	86 %
1.4 mm (.052 in.)	335 A	27.5 V	1016 cm/min (400 in./min)	5.0 kg/h (11.1 lb/h)	87 %
1.4 mm (.052 in.)	365 A	29 V	1270 cm/min (500 in./min)	6.3 kg/h (13.8 lb/h)	87 %
1.4 mm (.052 in.)	465 A	31.5 V	1524 cm/min (600 in./min)	7.5 kg/h (16.6 lb/h)	87 %
1.6 mm (1/16 in.)	210 A	24.5 V	381 cm/min (150 in./min)	2.5 kg/h (5.5 lb/h)	86 %
1.6 mm (1/16 in.)	315 A	25.5 V	635 cm/min (250 in./min)	4.2 kg/h (9.2 lb/h)	86 %
1.6 mm (1/16 in.)	360 A	26.5 V	762 cm/min (300 in./min)	4.9 kg/h (10.9 lb/h)	86 %
1.6 mm (1/16 in.)	410 A	27.5 V	889 cm/min (350 in./min)	5.7 kg/h (12.7 lb/h)	86 %
1.6 mm (1/16 in.)	432 A	28.5 V	1016 cm/min (400 in./min)	6.7 kg/h (14.7 lb/h)	87 %
1.6 mm (1/16 in.)	545 A	30 V	1270 cm/min (500 in./min)	8.3 kg/h (18.3 lb/h)	87 %

Recommended Welding Parameters			
Diameter	Amps	Volts	Wire Feed Speed
75% Ar - 25% CO2			
1.2 mm (.045 in.)	150-200 A	25.5-26.5 V	508-762 cm/min (200-300 in./min)
1.2 mm (.045 in.)	245-293 A	27.5-29 V	1016-1270 cm/min (400-500 in./min)
1.2 mm (.045 in.)	335 A	30.5 V	1524 cm/min (600 in./min)
1.4 mm (.052 in.)	157-205 A	24-24.5 V	381-508 cm/min (150-200 in./min)
1.4 mm (.052 in.)	265-335 A	26-27.5 V	762-1016 cm/min (300-400 in./min)
1.4 mm (.052 in.)	365-465 A	29-31.5 V	1270-1524 cm/min (500-600 in./min)
1.6 mm (1/16 in.)	210-315 A	24.5-25.5 V	381-635 cm/min (150-250 in./min)
1.6 mm (1/16 in.)	360-410 A	26.5-27.5 V	762-889 cm/min (300-350 in./min)
1.6 mm (1/16 in.)	432-545 A	28.5-30 V	1016-1270 cm/min (400-500 in./min)