

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/T-9M AWS A5.36 : E71T1-M21A4-CS1 AWS A5.36 : E71T1-M20A2-CS1 ISO : 173632-B T493T1-1MA- U ASME SFA 5.36 ASME SFA 5.20
Approvals	CWB CSA W48 E491T-1M-H16 ABS
Industry	Automotive Bridge Construction Civil Construction Industrial and General Fabrication Mobile Equipment Process Railcars Ship/Barge Building Steel Industry

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

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Reduction in Area	Elongation
75% Ar - 25% CO₂				
As Welded	570 MPa (83 ksi)	605 MPa (88 ksi)	56 %	25 %
As Welded	525 MPa (76 ksi)	595 MPa (86 ksi)	-	29 %
100% CO₂				
As Welded	550 MPa (80 ksi)	605 MPa (88 ksi)	-	27 %

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
0.04	1.2	0.7	0.012	0.015

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Deposition 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 %

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Deposition Data					
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Deposition Efficiency %
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			
Wire Diameter	Current	Voltage	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)