

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.

Specifications

Classifications	ISO : 173632-B T493T1-1MA- U ASME SFA 5.36 ASME SFA 5.20 AWS A5.36 : E71T1-M20A2-CS1 AWS A5.36 : E71T1-M21A4-CS1 AWS A5.20 : E71T-1M/T-9M
Approvals	CWB CSA W48 : E491T-1M-H16 ABS
Industry	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	Reduction in Area
100% CO₂				
As Welded	550 MPa	605 MPa	27 %	
75% Ar - 25% CO₂				
As Welded	525 MPa	595 MPa	29 %	
As Welded	570 MPa	605 MPa	25 %	56 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar / 25% CO₂		
As Welded	-29 °C	54 J
As Welded	-18 °C	72 J
90% Ar / 10% CO₂		
As Welded	-18 °C	92 J
As Welded	-29 °C	58 J

Typical Weld Metal Analysis %

C	Mn	Si	S	P
75% Ar - 25% CO₂				
0.04	1.2	0.6	0.012	0.016
100% CO₂				
0.04	1.2	0.7	0.012	0.015

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Deposition Data					
Diameter	Current	Voltage	Wire Feed Speed	Efficiency (%)	Deposition Rate
92% Ar - 8% CO ₂					
1.4 mm	157 A	24 V	381 cm/min	86 %	1.8 kg/h
1.6 mm	210 A	24.5 V	381 cm/min	86 %	2.5 kg/h
1.6 mm	545 A	30 V	1270 cm/min	87 %	8.3 kg/h
1.4 mm	205 A	24.5 V	508 cm/min	86 %	2.5 kg/h
1.4 mm	465 A	31.5 V	1524 cm/min	87 %	7.5 kg/h
1.6 mm	410 A	27.5 V	889 cm/min	86 %	5.7 kg/h
1.2 mm	335 A	30.5 V	1524 cm/min	87 %	5.5 kg/h
1.4 mm	365 A	29 V	1270 cm/min	87 %	6.3 kg/h
1.2 mm	200 A	26.5 V	762 cm/min	86 %	2.7 kg/h
1.6 mm	432 A	28.5 V	1016 cm/min	87 %	6.7 kg/h
1.2 mm	293 A	29 V	1270 cm/min	87 %	4.6 kg/h
1.4 mm	335 A	27.5 V	1016 cm/min	87 %	5.0 kg/h
1.6 mm	360 A	26.5 V	762 cm/min	86 %	4.9 kg/h
1.4 mm	265 A	26 V	762 cm/min	86 %	3.7 kg/h
1.6 mm	315 A	25.5 V	635 cm/min	86 %	4.2 kg/h
1.2 mm	150 A	25.5 V	508 cm/min	84 %	1.8 kg/h
1.2 mm	245 A	27.5 V	1016 cm/min	86 %	3.7 kg/h

Recommended Welding Parameters			
Current	Wire Diameter	Voltage	Wire Feed Speed
75% Ar - 25% CO ₂			
432-545 A	1.6 mm	28.5-30 V	1016-1270 cm/min
150-200 A	1.2 mm	25.5-26.5 V	508-762 cm/min
335 A	1.2 mm	30.5 V	1524 cm/min
360-410 A	1.6 mm	26.5-27.5 V	762-889 cm/min
245-293 A	1.2 mm	27.5-29 V	1016-1270 cm/min
265-335 A	1.4 mm	26-27.5 V	762-1016 cm/min
157-205 A	1.4 mm	24-24.5 V	381-508 cm/min
365-465 A	1.4 mm	29-31.5 V	1270-1524 cm/min
210-315 A	1.6 mm	24.5-25.5 V	381-635 cm/min