

Dual Shield II 110

Dual Shield II 110 is an all-position flux cored electrode which produces a smooth spray-like transfer, low spatter levels, low diffusible hydrogen levels, easy slag removal and good arc direction. Dual Shield II 110 was designed to join high strength steel such as HY-100 and T-1 (25.4) in the as welded or stress relieved condition using 75% Ar / 25% CO₂ shielding gas. It is well suited for joining high tensile steels that will be used in low temperatures. The weld metal analysis is similar to an E11018-M low hydrogen electrode.

Classifications:	AWS A5.29:E111T1-K3MH4, AWS A5.36:E111T1-M21A4-K3-H4, ASME SFA 5.29, ASME SFA 5.36
Approvals:	ABS , CWB CSA W48 E761T1-K3M- H4
Industry or Segmentation:	Mobile Equipment, Industrial and General Fabrication

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	760 MPa (110 ksi)	830 MPa (120 ksi)	54 %	19 %
Stress Relieved 8 hr 621 °C (1150 °F)	745 MPa (108 ksi)	800 MPa (116 ksi)	54 %	19 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
75% Ar - 25% CO₂		
As Welded	-18 °C (0 °F)	54 J (40 ft-lb)
As Welded	-29 °C (-20 °F)	49 J (36 ft-lb)
As Welded	-51 °C (-60 °F)	35 J (26 ft-lb)
Stress Relieved 8 hr 621 °C (1150 °F)	-18 °C (0 °F)	39 J (29 ft-lb)
Stress Relieved 8 hr 621 °C (1150 °F)	-29 °C (-20 °F)	37 J (27 ft-lb)
Stress Relieved 8 hr 621 °C (1150 °F)	-51 °C (-60 °F)	28 J (21 ft-lb)

Typical Weld Metal Analysis %						
C	Mn	Si	S	P	Ni	Mo
75% Ar - 25% CO₂						
0.05	1.91	0.43	0.01	0.013	1.74	0.39

Deposition Data					
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency (%)
75% Ar - 25% CO₂					
1.2 mm (.045 in.)	150 A	28 V	508 cm/min (200 in./min)	1.9 kg/h (4.2 lb/h)	86 %
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	2.8 kg/h (6.3 lb/h)	86 %
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	3.9 kg/h (8.5 lb/h)	87 %

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Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency (%)
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	4.8 kg/h (10.7 lb/h)	87 %
1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	2.0 kg/h (4.4 lb/h)	87 %
1.4 mm (.052 in.)	245 A	28 V	635 cm/min (250 in./min)	3.3 kg/h (7.3 lb/h)	86 %
1.4 mm (.052 in.)	310 A	33 V	889 cm/min (350 in./min)	4.6 kg/h (10.2 lb/h)	85 %
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	6.0 kg/h (13.3 lb/h)	85 %
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	8.0 kg/h (17.6 lb/h)	87 %
1.6 mm (1/16 in.)	300 A	30 V	35 cm/min (250 in./min)	2.8 kg/h (6.1 lb/h)	87 %
1.6 mm (1/16 in.)	365 A	33 V	762 cm/min (300 in./min)	4.6 kg/h (10.2 lb/h)	86 %
1.6 mm (1/16 in.)	410 A	33 V	889 cm/min (350 in./min)	5.5 kg/h (12.3 lb/h)	88 %

Recommended Welding Parameters

Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
75% Ar - 25% CO₂				
1.2 mm (.045 in.)	130-200 A	22-26 V	381-660 cm/min (150-260 in./min)	9.5-12.7 mm (3/8-1/2 in.)
1.2 mm (.045 in.)	200-225 A	24-27 V	660-965 cm/min (260-380 in./min)	12.7-19 mm (1/2-3/4 in.)
1.2 mm (.045 in.)	225-265 A	27-29 V	965-1321 cm/min (380-520 in./min)	19-25.4 mm (3/4-1 in.)
1.4 mm (.052 in.)	135-250 A	22-26 V	279-584 cm/min (110-230 in./min)	12.7-16 mm (1/2-5/8 in.)
1.4 mm (.052 in.)	250-295 A	25-29 V	584-864 cm/min (230-340 in./min)	16-19 mm (5/8-3/4 in.)
1.4 mm (.052 in.)	295-355 A	27-31 V	864-1194 cm/min (340-470 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	185-285 A	24-28 V	279-508 cm/min (110-200 in./min)	16-19 mm (5/8-3/4 in.)
1.6 mm (1/16 in.)	285-340 A	27-30 V	508-762 cm/min (200-300 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	340-400 A	28-32 V	762-1067 cm/min (300-420 in./min)	25.4-31.75 mm (1-1.25 in.)