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.

Specifications	
Classifications	ASME SFA 5.36 ASME SFA 5.29 AWS A5.36 : E111T1-M21A4-K3-H4 AWS A5.29 : E111T1-K3M-JH4
Approvals	ABS CWB : CSA W48 E761T1-K3M-H4

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

Typical Tensile Properties				
Condition	**Yield Strength**	**Tensile Strength**	**Elongation**	**Reduction in Area**
75% Ar - 25% CO2				
Stress Relieved 8 hour(s) 621 °C (1150 °F)	745 MPa (108 ksi)	800 MPa (116 ksi)	19 %	54 %
As Welded	760 MPa (110 ksi)	830 MPa (120 ksi)	19 %	54 %

Typical Charpy V-Notch Properties		
Condition	**Testing Temperature**	**Impact Value**
75% Ar - 25% CO2		
Stress Relieved	-51 °C (-60 °F)	28 J (21 ft-lb)
As Welded	-29 °C (-20 °F)	49 J (36 ft-lb)
Stress Relieved	-29 °C (-20 °F)	37 J (27 ft-lb)
Stress Relieved	-18 °C (0 °F)	39 J (29 ft-lb)
As Welded	-18 °C (0 °F)	54 J (40 ft-lb)
As Welded	-51 °C (-60 °F)	35 J (26 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	**Current**	**Voltage**	**Wire Feed Speed**	**Deposition Efficiency (%)**	**Deposition Rate**
75% Ar - 25% CO2					
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	85 %	6.0 kg/h (13.3 lbs/h)
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	87 %	4.8 kg/h (10.7 lbs/h)
1.4 mm (.052 in.)	310 A	33 V	889 cm/min (350 in./min)	85 %	4.6 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	86 %	2.8 kg/h (6.3 lbs/h)
1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	87 %	2.0 kg/h (4.4 lbs/h)
1.6 mm (1/16 in.)	365 A	33 V	762 cm/min (300 in./min)	86 %	4.6 kg/h (10.2 lbs/h)

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Deposition Data					
Diameter	**Current**	**Voltage**	**Wire Feed Speed**	**Deposition Efficiency (%)**	**Deposition Rate**
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	87 %	3.9 kg/h (8.5 lbs/h)
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	87 %	8.0 kg/h (17.6 lbs/h)
1.4 mm (.052 in.)	245 A	28 V	635 cm/min (250 in./min)	86 %	3.3 kg/h (7.3 lbs/h)
1.6 mm (1/16 in.)	410 A	33 V	889 cm/min (350 in./min)	88 %	5.5 kg/h (12.3 lbs/h)
1.2 mm (.045 in.)	150 A	28 V	508 cm/min (200 in./min)	86 %	1.9 kg/h (4.2 lbs/h)
1.6 mm (1/16 in.)	300 A	30 V	35 cm/min (250 in./min)	87 %	2.8 kg/h (6.1 lbs/h)

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