

Dual Shield 810X-Ni1

Dual Shield 810X-Ni1 provides outstanding operator appeal with an easily controlled arc, improved operation at both lower and higher current levels, minimal spatter and easily removed slag. Dual Shield 810X-Ni1 is designed for use with 100% CO₂. It is an excellent choice for welding on COR-TEN® steel in applications where weathering grade wires are not desirable.

Classifications:	AWS A5.29:E81T1-Ni1CD-JH8, AWS A5.36:E81T1-C1A4-Ni1-H8 ASME SFA 5.29, ASME SFA 5.36
Approvals:	Seismic Certified "D" , CWB CSA W48 E551T1-Ni1C-H8
Industry or Segmentation:	Railcars, Barges, Power Generation, Industrial and General Fabrication, Light Equipment, Heavy Equipment, Civil Construction, Bridge Construction, Ship/Barge Building

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

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
100% CO₂			
As Welded	590 MPa (86 ksi)	635 MPa (92 ksi)	29 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
100% CO₂		
As Welded	-29 °C (-20 °F)	81 J (60 ft-lb)
As Welded	-40 °C (-40 °F)	61 J (45 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
100% CO₂					
0.04	1.30	0.60	0.009	0.010	1.00

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
Vertical Up 100% CO₂					
1.2 mm (.045 in.)	140 A	23 V	483 cm/min (190 in./min)	1.5 kg/h (3.3 lb/h)	81 %
1.2 mm (.045 in.)	154 A	23 V	559 cm/min (220 in./min)	1.8 kg/h (3.9 lb/h)	81 %
1.2 mm (.045 in.)	167 A	24 V	635 cm/min (250 in./min)	2.0 kg/h (4.5 lb/h)	82 %
1.2 mm (.045 in.)	180 A	24 V	711 cm/min (280 in./min)	2.3 kg/h (5.1 lb/h)	82 %
1.2 mm (.045 in.)	193 A	25 V	787 cm/min (310 in./min)	2.5 kg/h (5.6 lb/h)	82 %
1.2 mm (.045 in.)	205 A	26 V	864 cm/min (340 in./min)	2.8 kg/h (6.2 lb/h)	83 %
1.2 mm (.045 in.)	217 A	26 V	940 cm/min (370 in./min)	3.1 kg/h (6.8 lb/h)	83 %
1.4 mm (.052 in.)	153 A	24 V	406 cm/min (160 in./min)	1.8 kg/h (4.0 lb/h)	81 %
1.4 mm (.052 in.)	159 A	24 V	432 cm/min (170 in./min)	1.8 kg/h (4.0 lb/h)	81 %
1.4 mm (.052 in.)	166 A	25 V	457 cm/min (180 in./min)	2.0 kg/h (4.5 lb/h)	81 %

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Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
1.4 mm (.052 in.)	172 A	25 V	483 cm/min (190 in./min)	2.2 kg/h (4.8 lb/h)	81 %
1.4 mm (.052 in.)	178 A	25 V	508 cm/min (200 in./min)	2.3 kg/h (5.0 lb/h)	81 %
1.4 mm (.052 in.)	184 A	25 V	533 cm/min (210 in./min)	2.4 kg/h (5.3 lb/h)	81 %
1.4 mm (.052 in.)	190 A	26 V	559 cm/min (220 in./min)	2.5 kg/h (5.5 lb/h)	81 %
1.4 mm (.052 in.)	196 A	26 V	584 cm/min (230 in./min)	2.6 kg/h (5.8 lb/h)	82 %
1.4 mm (.052 in.)	201 A	26 V	610 cm/min (240 in./min)	2.7 kg/h (6.0 lb/h)	82 %
1.4 mm (.052 in.)	207 A	26 V	635 cm/min (250 in./min)	2.9 kg/h (6.3 lb/h)	82 %
1.6 mm (1/16 in.)	187 A	24 V	356 cm/min (140 in./min)	1.9 kg/h (4.2 lb/h)	80 %
1.6 mm (1/16 in.)	205 A	25 V	406 cm/min (160 in./min)	2.2 kg/h (4.9 lb/h)	80 %
1.6 mm (1/16 in.)	223 A	25 V	457 cm/min (180 in./min)	2.5 kg/h (5.6 lb/h)	80 %
1.6 mm (1/16 in.)	240 A	25 V	508 cm/min (200 in./min)	2.9 kg/h (6.3 lb/h)	80 %
1.6 mm (1/16 in.)	257 A	26 V	559 cm/min (220 in./min)	3.2 kg/h (7.0 lb/h)	81 %
1.6 mm (1/16 in.)	273 A	26 V	610 cm/min (240 in./min)	3.5 kg/h (7.7 lb/h)	81 %
1.6 mm (1/16 in.)	289 A	26 V	660 cm/min (260 in./min)	3.8 kg/h (8.4 lb/h)	81 %

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
100% CO₂				
1.2 mm (.045 in.)	135-205 A	23-26 V	432-737 cm/min (170-290 in./min)	9.5-12.7 mm (3/8-1/2 in.)
1.2 mm (.045 in.)	175-230 A	25-27 V	737-889 cm/min (290-350 in./min)	12.7-19 mm (1/2-3/4 in.)
1.2 mm (.045 in.)	180-265 A	26-30 V	889-1397 cm/min (350-550 in./min)	19-25.4 mm (3/4-1 in.)
1.4 mm (.052 in.)	125-235 A	23-26 V	330-711 cm/min (130-280 in./min)	12.7-15.8 mm (1/2-5/8 in.)
1.4 mm (.052 in.)	215-290 A	25-29 V	711-1016 cm/min (280-400 in./min)	15.8-19 mm (5/8-3/4 in.)
1.4 mm (.052 in.)	250-350 A	29-31 V	1016-1524 cm/min (400-600 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	165-270 A	25-28 V	343-673 cm/min (135-265 in./min)	15.8-19 mm (5/8-3/4 in.)
1.6 mm (1/16 in.)	245-345 A	27-30 V	673-1016 cm/min (265-400 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	290-415 A	28-32 V	1016-1270 cm/min (400-500 in./min)	25.4-31.75 mm (1-1.25 in.)