

Dual Shield 8000-Ni2

Dual Shield 8000-Ni2 is an all-position flux cored electrode that deposits 2.5% Ni deposit with an 82 ksi (565 MPa) minimum tensile strength. Dual Shield 8000-Ni2 may be used with CO₂ or argon mixtures. The argon-CO₂ mixtures reduce spatter and further improve weldability especially for small vertical-up fillets. Dual Shield 8000-Ni2 produces superior weld metal properties which make it most desirable for such applications as shipbuilding and heavy machinery construction. The weld metal analysis is similar to an E8018-C1 low hydrogen electrode.

Specifications

Classifications	AWS A5.29 : E81T1-Ni2C-JH8/E81T1-Ni2M H8 AWS A5.36 : E81T1-C1A6-Ni2-H8 AWS A5.36 : E81T1M21A4-Ni2-H8v
Approvals	A.B.S.- 3YSA ASME SFA 5.29 AWS A5.29 : E81T1-Ni2C/Ni2M CERTIFIED BY C.W.B.- AWS A5.29 MIL-E-24403/1 : MIL-81T1-Ni2C-J/Ni2M
Industry	Mobile Equipment Industrial and General Fabrication Bridge Construction Process

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 (80 ksi)	605 MPa (88 ksi)	26 %	67 %
75% Ar - 25% CO₂				
As Welded	565 MPa (82 ksi)	620 MPa (90 ksi)	27 %	68 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
100% CO₂		
As Welded	-18 °C (0 °F)	84 J (62 ft-lb)
As Welded	-29 °C (-20 °F)	58 J (43 ft-lb)
As Welded	-40 °C (-40 °F)	53 J (39 ft-lb)
As Welded	-51 °C (-60 °F)	46 J (34 ft-lb)
75% Ar - 25% CO₂		
As Welded	-40 °C (-40 °F)	54 J (40 ft-lb)
As Welded	-18 °C (0 °F)	69 J (63 ft-lb)
As Welded	-51 °C (-60 °F)	37 J (27 ft-lb)
As Welded	-29 °C (-20 °F)	64 J (47 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
75% Ar - 25% CO₂					
0.05	1.10	0.40	0.010	0.012	2.20
100% CO₂					
0.05	0.90	0.30	0.010	0.012	2.20

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	TTW Dist.	Deposition Rate
100% CO₂						

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Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	TTW Dist.	Deposition Rate
1.4 mm (.052 in.)	430 A	37 V	1524 cm/min (600 in./min)	87 %		7.98 kg/h (17.6 lbs/h)
1.6 mm (1/16 in.)	305 A	28 V	640 m/min (260 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	450 A	33 V	1016 cm/min (400 in./min)	87 %		7.3 kg/h (16 lbs/h)
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	87 %		4.85 kg/h (10.7 lbs/h)
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	87 %		3.86 kg/h (8.5 lbs/h)
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	86 %		86 kg/h (6.3 lbs/h)
1.2 mm (.045 in.)	140 A	23 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	225 A	29 V	952 m/min (375 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	140 A	21 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
1.4 mm (.052 in.)	245 A	28 V	635 cm/min (250 in./min)	86 %		3.31 kg/h (7.3 lbs/h)
1.6 mm (1/16 in.)	500 A	39 V	1270 cm/min (500 in./min)	87 %		9.11 kg/h (20.1 lbs/h)
1.6 mm (1/16 in.)	315 A	32 V	699 m/min (275 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	300 A	30 V	35 cm/min (250 in./min)	87 %		4.63 kg/h (10.2 lbs/h)
1.6 mm (1/16 in.)	200 A	24 V	381 m/min (150 in./min)		25 mm (1 in.)	
1.4 mm (.052 in.)	310 A	33 V	889 cm/min (350 in./min)	85 %		4.63 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	215 A	27 V	914 m/min (360 in./min)		19 mm (3/4 in.)	
1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	87 %		2 kg/h (4.4 lbs/h)
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	85 %		6.03 kg/h (13.3 lbs/h)
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	87 %		2.77 kg/h (6.1 lbs/h)
1.6 mm (1/16 in.)	315 A	32 V	699 m/min (275 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	410 A	33 V	889 cm/min (350 in./min)	88 %		6.35 kg/h (14 lbs/h)
1.6 mm (1/16 in.)	305 A	27 V	640 m/min (260 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	365 A	33 V	762 cm/min (300 in./min)	86 %		5.58 kg/h (12.3 lbs/h)
1.2 mm (.045 in.)	330 A	34 V	1524 cm/min (600 in./min)	87 %		5.76 kg/h (12.7 lbs/h)
1.6 mm (1/16 in.)	200 A	24 V	381 m/min (150 in./min)		25 mm (1 in.)	

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Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	TTW Dist.	Deposition Rate
1.2 mm (.045 in.)	150 A	28 V	508 cm/min (200 in./min)	86 %		1.91 kg/h (4.2 lbs/h)
1.2 mm (.045 in.)	215 A	28 V	914 m/min (360 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	190 A	31 V	952 m/min (375 in./min)		19 mm (3/4 in.)	
1.4 mm (.052 in.)	430 A	37 V	1524 cm/min (600 in./min)	87 %		7.98 kg/h (17.6 lbs/h)
1.6 mm (1/16 in.)	305 A	28 V	640 m/min (260 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	450 A	33 V	1016 cm/min (400 in./min)	87 %		7.3 kg/h (16 lbs/h)
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	87 %		4.85 kg/h (10.7 lbs/h)
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	87 %		3.86 kg/h (8.5 lbs/h)
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	86 %		86 kg/h (6.3 lbs/h)
1.2 mm (.045 in.)	140 A	23 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	225 A	29 V	952 m/min (375 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	140 A	21 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
1.4 mm (.052 in.)	245 A	28 V	635 cm/min (250 in./min)	86 %		3.31 kg/h (7.3 lbs/h)
1.6 mm (1/16 in.)	500 A	39 V	1270 cm/min (500 in./min)	87 %		9.11 kg/h (20.1 lbs/h)
1.6 mm (1/16 in.)	315 A	32 V	699 m/min (275 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	300 A	30 V	35 cm/min (250 in./min)	87 %		4.63 kg/h (10.2 lbs/h)
1.6 mm (1/16 in.)	200 A	24 V	381 m/min (150 in./min)		25 mm (1 in.)	
1.4 mm (.052 in.)	310 A	33 V	889 cm/min (350 in./min)	85 %		4.63 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	215 A	27 V	914 m/min (360 in./min)		19 mm (3/4 in.)	
1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	87 %		2 kg/h (4.4 lbs/h)
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	85 %		6.03 kg/h (13.3 lbs/h)
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	87 %		2.77 kg/h (6.1 lbs/h)
1.6 mm (1/16 in.)	315 A	32 V	699 m/min (275 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	410 A	33 V	889 cm/min (350 in./min)	88 %		6.35 kg/h (14 lbs/h)
1.6 mm (1/16 in.)	305 A	27 V	640 m/min (260 in./min)		25 mm (1 in.)	

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Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	TTW Dist.	Deposition Rate
1.6 mm (1/16 in.)	365 A	33 V	762 cm/min (300 in./min)	86 %		5.58 kg/h (12.3 lbs/h)
1.2 mm (.045 in.)	330 A	34 V	1524 cm/min (600 in./min)	87 %		5.76 kg/h (12.7 lbs/h)
1.6 mm (1/16 in.)	200 A	24 V	381 m/min (150 in./min)		25 mm (1 in.)	
1.2 mm (.045 in.)	150 A	28 V	508 cm/min (200 in./min)	86 %		1.91 kg/h (4.2 lbs/h)
1.2 mm (.045 in.)	215 A	28 V	914 m/min (360 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	190 A	31 V	952 m/min (375 in./min)		19 mm (3/4 in.)	
75% Ar - 25% CO2						
1.4 mm (.052 in.)	430 A	37 V	1524 cm/min (600 in./min)	87 %		7.98 kg/h (17.6 lbs/h)
1.6 mm (1/16 in.)	305 A	28 V	640 m/min (260 in./min)		25 mm (1 in.)	
1.6 mm (1/16 in.)	450 A	33 V	1016 cm/min (400 in./min)	87 %		7.3 kg/h (16 lbs/h)
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	87 %		4.85 kg/h (10.7 lbs/h)
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	87 %		3.86 kg/h (8.5 lbs/h)
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	86 %		86 kg/h (6.3 lbs/h)
1.2 mm (.045 in.)	140 A	23 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	225 A	29 V	952 m/min (375 in./min)		19 mm (3/4 in.)	
1.2 mm (.045 in.)	140 A	21 V	445 m/min (175 in./min)		19 mm (3/4 in.)	
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1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	87 %		2 kg/h (4.4 lbs/h)
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	85 %		6.03 kg/h (13.3 lbs/h)
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	87 %		2.77 kg/h (6.1 lbs/h)

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