

## 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 CO<sub>2</sub> or argon mixtures. The argon-CO<sub>2</sub> 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.

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

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

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Reduction in Area	Elongation
<b>75% Ar - 25% CO<sub>2</sub></b>				
As Welded	565 MPa (82 ksi)	620 MPa (90 ksi)	68 %	27 %
<b>100% CO<sub>2</sub></b>				
As Welded	550 MPa (80 ksi)	605 MPa (88 ksi)	67 %	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>100% CO<sub>2</sub></b>		
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)
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-18 °C (0 °F)	69 J (63 ft-lb)
As Welded	-29 °C (-20 °F)	64 J (47 ft-lb)
As Welded	-40 °C (-40 °F)	54 J (40 ft-lb)
As Welded	-51 °C (-60 °F)	37 J (27 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
0.05	0.90	0.30	0.010	0.012	2.20

### Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Deposition Efficiency %
1.2 mm (.045 in.)	150 A	28 V	508 cm/min (200 in./min)	1.91 kg/h (4.2 lb/h)	-	86 %
1.2 mm (.045 in.)	210 A	29 V	762 cm/min (300 in./min)	86 kg/h (6.3 lb/h)	-	86 %
1.2 mm (.045 in.)	250 A	30 V	1016 cm/min (400 in./min)	3.86 kg/h (8.5 lb/h)	-	87 %
1.2 mm (.045 in.)	290 A	33 V	1270 cm/min (500 in./min)	4.85 kg/h (10.7 lb/h)	-	87 %
1.2 mm (.045 in.)	330 A	34 V	1524 cm/min (600 in./min)	5.76 kg/h (12.7 lb/h)	-	87 %
1.4 mm (.052 in.)	155 A	25 V	381 cm/min (150 in./min)	2 kg/h (4.4 lb/h)	-	87 %
1.4 mm (.052 in.)	245 A	28 V	635 cm/min (250 in./min)	3.31 kg/h (7.3 lb/h)	-	86 %

## Dual Shield 8000-NI2

Deposition Data						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Deposition Efficiency %
1.4 mm (.052 in.)	310 A	33 V	889 cm/min (350 in./min)	4.63 kg/h (10.2 lb/h)	-	85 %
1.4 mm (.052 in.)	360 A	36 V	1143 cm/min (450 in./min)	6.03 kg/h (13.3 lb/h)	-	85 %
1.4 mm (.052 in.)	430 A	37 V	1524 cm/min (600 in./min)	7.98 kg/h (17.6 lb/h)	-	87 %
1.6 mm (1/16 in.)	190 A	27 V	38 cm/min (150 in./min)	2.77 kg/h (6.1 lb/h)	-	87 %
1.6 mm (1/16 in.)	300 A	30 V	35 cm/min (250 in./min)	4.63 kg/h (10.2 lb/h)	-	87 %
1.6 mm (1/16 in.)	365 A	33 V	762 cm/min (300 in./min)	5.58 kg/h (12.3 lb/h)	-	86 %
1.6 mm (1/16 in.)	410 A	33 V	889 cm/min (350 in./min)	6.35 kg/h (14 lb/h)	-	88 %
1.6 mm (1/16 in.)	450 A	33 V	1016 cm/min (400 in./min)	7.3 kg/h (16 lb/h)	-	87 %
1.6 mm (1/16 in.)	500 A	39 V	1270 cm/min (500 in./min)	9.11 kg/h (20.1 lb/h)	-	87 %
<b>100% CO<sub>2</sub></b>						
1.6 mm (1/16 in.)	315 A	32 V	699 mm/min (275 in./min)	-	25 mm (1 in.)	-
1.6 mm (1/16 in.)	305 A	28 V	640 mm/min (260 in./min)	-	25 mm (1 in.)	-
1.6 mm (1/16 in.)	200 A	24 V	381 mm/min (150 in./min)	-	25 mm (1 in.)	-
1.2 mm (.045 in.)	190 A	31 V	952 mm/min (375 in./min)	-	19 mm (3/4 in.)	-
1.2 mm (.045 in.)	215 A	28 V	914 mm/min (360 in./min)	-	19 mm (3/4 in.)	-
1.2 mm (.045 in.)	140 A	23 V	445 mm/min (175 in./min)	-	19 mm (3/4 in.)	-
<b>75% Ar - 25% CO<sub>2</sub></b>						
1.6 mm (1/16 in.)	315 A	32 V	699 mm/min (275 in./min)	-	25 mm (1 in.)	-
1.6 mm (1/16 in.)	305 A	27 V	640 mm/min (260 in./min)	-	25 mm (1 in.)	-
1.6 mm (1/16 in.)	200 A	24 V	381 mm/min (150 in./min)	-	25 mm (1 in.)	-
1.2 mm (.045 in.)	225 A	29 V	952 mm/min (375 in./min)	-	19 mm (3/4 in.)	-
1.2 mm (.045 in.)	215 A	27 V	914 mm/min (360 in./min)	-	19 mm (3/4 in.)	-
1.2 mm (.045 in.)	140 A	21 V	445 mm/min (175 in./min)	-	19 mm (3/4 in.)	-