Coreweld 88HS Ni1

Coreweld 88HS-Ni1 is recommended primarily for robotic or mechanized high speed welding of sheet steel. Welding speeds up to 90 ipm are possible when welding vertical down. The low slag level of Coreweld 88HS-Ni1 minimizes post weld clean up. For this reason, Coreweld 88HS-Ni1 gives special advantage in applications where post weld coating or painting is specified. Coreweld 88HS-Ni1 is a 1% nickel low alloy metal cored wire designed specifically for high speed welding where a clean weld surface is required. Coreweld 88HS-Ni1 deposits have very few silicon islands and almost no slag at the weld toes.

Classifications	AWS A5.28 : E80C Ni1M H4 AWS A5.36 : E80T15-M21A5-Ni1 H4 AWS A5.36 : E80T15-M20A5-Mi1-H4
Approvals	CWB CSA W48 E551C-Ni1-H4
Industry	Industrial and General Fabrication Railcars Power Poles

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

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Reduction in Area	Elongation
90% Ar - 10% CO2				
As Welded	512 MPa (74.3 ksi)	598 MPa (86.7 ksi)	58 %	26 %
75% Ar - 25% CO2				
As Welded	480 MPa (69.6 ksi)	576 MPa (83.6 ksi)	60 %	27 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO2		
As Welded	-46 °C (-50 °F)	37 J (28 ft-lb)
90% Ar - 10% CO2		
As Welded	-46 °C (-50 °F)	39 J (29 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
0.053	1.23	0.55	0.016	0.010	0.96

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Deposition Efficiency %
75% Ar - 25% CO2					
1.2 mm (.045 in.)	210 A	27 V	635 cm/min (250 in./min)	2.4 kg/h (5.2 lb/h)	94 %
1.2 mm (.045 in.)	265 A	28 V	889 cm/min (350 in./min)	3.5 kg/h (7.7 lb/h)	96 %
1.2 mm (.045 in.)	295 A	29 V	1016 cm/min (400 in./min)	4.6 kg/h (10.2 lb/h)	98 %
1.2 mm (.045 in.)	330 A	32 V	1270 cm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	99 %
1.2 mm (.045 in.)	375 A	33 V	1397 cm/min (550 in./min)	7.5 kg/h (16.5 lb/h)	99 %
1.4 mm (.052 in.)	190 A	25 V	445 cm/min (175 in./min)	2.5 kg/h (5.5 lb/h)	94 %
1.4 mm (.052 in.)	240 A	27 V	635 cm/min (250 in./min)	3.5 kg/h (7.7 lb/h)	95 %
1.4 mm (.052 in.)	255 A	28 V	762 cm/min (300 in./min)	4.9 kg/h (10.7 lb/h)	98 %
1.4 mm (.052 in.)	350 A	31 V	1016 cm/min (400 in./min)	6.2 kg/h (13.6 lb/h)	99 %
1.4 mm (.052 in.)	430 A	36 V	1334 cm/min (525 in./min)	7.5 kg/h (16.6 lb/h)	99 %
1.6 mm (1/16 in.)	240 A	26 V	381 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	91 %
1.6 mm (1/16 in.)	290 A	27 V	508 cm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	95 %

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1.6 mm (1/16 in.)	340 A	29 V	635 cm/min (250 in./min)	5.7 kg/h (12.5 lb/h)	98 %
1.6 mm (1/16 in.)	425 A	32 V	889 cm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	99 %
1.6 mm (1/16 in.)	490 A	36 V	1207 cm/min (475 in./min)	9.4 kg/h (20.7 lb/h)	99 %
90% Ar - 10% CO2					
1.2 mm (.045 in.)	180 A	23.5 V	508 cm/min (200 in./min)	2.4 kg/h (5.2 lb/h)	94 %
1.2 mm (.045 in.)	250 A	25 V	762 cm/min (300 in./min)	3.5 kg/h (7.7 lb/h)	96 %
1.2 mm (.045 in.)	300 A	27 V	1016 cm/min (400 in./min)	4.6 kg/h (10.2 lb/h)	98 %
1.2 mm (.045 in.)	375 A	29 V	1270 cm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	99 %
1.2 mm (.045 in.)	450 A	32 V	1651 cm/min (650 in./min)	7.5 kg/h (16.5 lb/h)	99 %
1.4 mm (.052 in.)	200 A	24 V	445 cm/min (175 in./min)	2.5 kg/h (5.5 lb/h)	94 %
1.4 mm (.052 in.)	260 A	25 V	635 cm/min (250 in./min)	3.5 kg/h (7.7 lb/h)	95 %
1.4 mm (.052 in.)	340 A	27 V	889 cm/min (350 in./min)	4.9 kg/h (10.7 lb/h)	98 %
1.4 mm (.052 in.)	420 A	30 V	1143 cm/min (450 in./min)	6.2 kg/h (13.6 lb/h)	99 %
1.4 mm (.052 in.)	450 A	32 V	1397 cm/min (550 in./min)	7.5 kg/h (16.6 lb/h)	99 %
1.6 mm (1/16 in.)	240 A	24 V	381 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	91 %
1.6 mm (1/16 in.)	310 A	26 V	508 cm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	95 %
1.6 mm (1/16 in.)	400 A	28 V	699 cm/min (275 in./min)	5.7 kg/h (12.5 lb/h)	98 %
1.6 mm (1/16 in.)	440 A	29 V	889 cm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	99 %
1.6 mm (1/16 in.)	515 A	33 V	1207 cm/min (475 in./min)	9.4 kg/h (20.7 lb/h)	99 %

Recommended Welding Parameters

Wire Diameter	Current	Voltage	TTW Dist.	Wire Feed Speed
75% Ar - 25% CO2				
1.6 mm (1/16 in.)	230-510 A	26-36 V	19 mm (3/4 in.)	381-1219 mm/min (150-480 in./min)
1.4 mm (.052 in.)	190-410 A	27-36 V	15.8 mm (5/8 in.)	457-1346 cm/min (180-530 in./min)
1.2 mm (.045 in.)	200-360 A	27-33 V	15.8 mm (5/8 in.)	635-1397 mm/min (250-550 in./min)

270-en_US-FactSheet_Main-01 2021-03-08