

## Dual Shield 7100 Ultra

Like many other Dual Shield products, Dual Shield 7100 Ultra operates in a wider parameter range and generates less welding fumes than many similar welding wires. The low spatter levels and easy slag removal minimizes post weld cleanup. Dual Shield 7100 Ultra can be used with either 100% CO<sub>2</sub> or 75% Ar/25% CO<sub>2</sub>. This versatility in gas selection provides the fabricator greater flexibility in choosing both wire and gas. Applications include railcar and earth moving equipment, as well as general structural steel fabrication.

<b>Classifications:</b>	AWS A5.20:E71T-1C-DH8, AWS A5.20:E71T-9C-DH8, AWS A5.20:E71T-1M-DH8, AWS A5.20:E71T-9M-DH8, AWS A5.36:E71T1-C1A2-CS1-DH8, AWS A5.36:E71T1-M21-CS1-DH8, ASME SFA 5.20, ASME SFA 5.36
<b>Approvals:</b>	ABS , BV , LR , DNV-GL , CWB CSA W48; E491T-9-H8
<b>Industry or Segmentation:</b>	Civil Construction, Mobile Equipment, Ship/Barge Building, Industrial and General Fabrication, Bridge Construction, Railcars, Automotive, Process

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

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
<b>100% CO<sub>2</sub></b>			
As Welded	515 MPa (75 ksi)	585 MPa (85 ksi)	26 %
<b>75% Ar - 25% CO<sub>2</sub></b>			
As Welded	540 MPa (78 ksi)	605 MPa (88 ksi)	26 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
<b>100% CO<sub>2</sub></b>		
As Welded	-18 °C (0 °F)	58 J (43 ft-lb)
As Welded	-29 °C (-20 °F)	34 J (25 ft-lb)
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-18 °C (0 °F)	57 J (42 ft-lb)
As Welded	-29 °C (-20 °F)	47 J (35 ft-lb)

Typical Weld Metal Analysis %				
C	Mn	Si	S	P
<b>100% CO<sub>2</sub></b>				
0.02	1.3	0.5	0.013	0.010
<b>75% Ar - 25% CO<sub>2</sub></b>				
0.03	1.6	0.6	0.012	0.010

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## Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
<b>100% CO<sub>2</sub></b>					
0.9 mm (.035 in.)	105 A	24 V	635 cm/min (250 in./min)	1.3 kg/h (2.8 lb/h)	86 %
0.9 mm (.035 in.)	140 A	25 V	1016 cm/min (400 in./min)	2.1 kg/h (4.6 lb/h)	87 %
0.9 mm (.035 in.)	165 A	25.5 V	1206.5 cm/min (475 in./min)	2.5 kg/h (5.5 lb/h)	88 %
0.9 mm (.035 in.)	185 A	27 V	1397 cm/min (550 in./min)	2.9 kg/h (6.3 lb/h)	88 %
1.2 mm (.045 in.)	192 A	25.5 V	762 cm/min (300 in./min)	2.5 kg/h (5.5 lb/h)	79 %
1.2 mm (.045 in.)	230 A	27 V	1016 cm/min (400 in./min)	3.3 kg/h (7.4 lb/h)	82 %
1.2 mm (.045 in.)	275 A	28.5 V	1270 cm/min (500 in./min)	4.4 kg/h (9.6 lb/h)	83 %
1.4 mm (.052 in.)	150 A	23.5 V	381 cm/min (150 in./min)	1.6 kg/h (3.6 lb/h)	76 %
1.4 mm (.052 in.)	190 A	24 V	508 cm/min (200 in./min)	2.2 kg/h (4.9 lb/h)	78 %
1.4 mm (.052 in.)	250 A	25.5 V	762 cm/min (300 in./min)	3.5 kg/h (7.7 lb/h)	82 %
1.4 mm (.052 in.)	300 A	27 V	1016 cm/min (400 in./min)	4.7 kg/h (10.3 lb/h)	83 %
1.6 mm (1/16 in.)	195 A	24 V	381 cm/min (150 in./min)	2.5 kg/h (5.5 lb/h)	85 %
1.6 mm (1/16 in.)	290 A	25.5 V	635 cm/min (250 in./min)	4.2 kg/h (9.2 lb/h)	87 %
1.6 mm (1/16 in.)	325 A	26.5 V	762 cm/min (300 in./min)	4.9 kg/h (10.9 lb/h)	86 %
1.6 mm (1/16 in.)	352 A	27 V	889 cm/min (350 in./min)	6.0 kg/h (13.1 lb/h)	88 %
1.6 mm (1/16 in.)	382 A	28.5 V	1016 cm/min (400 in./min)	6.7 kg/h (14.7 lb/h)	87 %

## Recommended Welding Parameters

Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
<b>100% CO<sub>2</sub></b>				
0.9 mm (.035 in.)	110-135 A	23-25 V	559-838 cm/min (220-330 in./min)	9.5-12.7 mm (3/8-1/2 in.)
0.9 mm (.035 in.)	135-160 A	24-28 V	838-1118 cm/min (330-440 in./min)	12.7-16 mm (1/2-5/8 in.)
0.9 mm (.035 in.)	160-185 A	26-30 V	1118-1397 cm/min (440-550 in./min)	16-19 mm (5/8-3/4 in.)
1.2 mm (.045 in.)	135-205 A	23-26 V	381-660 cm/min (150-260 in./min)	9.5-12.7 mm (3/8-1/2 in.)
1.2 mm (.045 in.)	205-230 A	25-27 V	660-965 cm/min (260-380 in./min)	12.7-19 mm (1/2-3/4 in.)
1.2 mm (.045 in.)	230-265 A	26-30 V	965-1321 cm/min (380-520 in./min)	19-25.4 mm (3/4-1 in.)
1.4 mm (.052 in.)	125-235 A	23-26 V	279-584 cm/min (110-230 in./min)	12.7-16 mm (1/2-5/8 in.)
1.4 mm (.052 in.)	235-290 A	25-29 V	584-864 cm/min (230-340 in./min)	16-19 mm (5/8-3/4 in.)
1.4 mm (.052 in.)	290-350 A	29-31 V	864-1194 cm/min (340-470 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	165-270 A	25-28 V	279-508 cm/min (110-200 in./min)	16-19 mm (5/8-3/4 in.)
1.6 mm (1/16 in.)	270-345 A	27-30 V	508-762 cm/min (200-300 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	345-415 A	28-32 V	762-1067 cm/min (300-420 in./min)	25.4-31.75 mm (1-1.25 in.)

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Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
<b>75% Ar - 25% CO2</b>				
0.9 mm (.035 in.)	115-145 A	23-25 V	1118-1397 cm/min (440-550 in./min)	9.5-12.7 mm (3/8-1/2 in.)
0.9 mm (.035 in.)	145-165 A	24-27 V	1118-1397 cm/min (440-550 in./min)	12.7-16 mm (1/2-5/8 in.)
0.9 mm (.035 in.)	165-190 A	25-30 V	1118-1397 cm/min (440-550 in./min)	16-19 mm (5/8-3/4 in.)
1.2 mm (.045 in.)	130-200 A	22-26 V	381-660 cm/min (150-260 in./min)	9.5-12.7 mm (3/8-1/2 in.)
1.2 mm (.045 in.)	200-225 A	24-27 V	660-965 cm/min (260-380 in./min)	12.7-19 mm (1/2-3/4 in.)
1.2 mm (.045 in.)	225-265 A	27-29 V	965-1321 cm/min (380-520 in./min)	19-25.4 mm (3/4-1 in.)
1.4 mm (.052 in.)	135-250 A	22-26 V	279-584 cm/min (110-230 in./min)	12.7-16 mm (1/2-5/8 in.)
1.4 mm (.052 in.)	250-295 A	25-29 V	584-864 cm/min (230-340 in./min)	16-19 mm (5/8-3/4 in.)
1.4 mm (.052 in.)	295-355 A	27-31 V	864-1194 cm/min (340-470 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	185-285 A	24-28 V	279-508 cm/min (110-200 in./min)	16-19 mm (5/8-3/4 in.)
1.6 mm (1/16 in.)	285-340 A	27-30 V	508-762 cm/min (200-300 in./min)	19-25.4 mm (3/4-1 in.)
1.6 mm (1/16 in.)	340-400 A	28-32 V	762-1067 cm/min (300-420 in./min)	25.4-31.75 mm (1-1.25 in.)