

Coreshield 6

Coreshield 6 is a high productivity, high deposition gasless flux cored wire. This self-shielded wire is ideal for single or multiple pass weld applications in addition to providing high deposition rates, low spatter, and good penetration. Because of its stiffer weld puddle, Coreshield 6 offers exceptional multi-pass weld stacking characteristics, produces excellent bead appearance and X-ray quality weld deposits. Coreshield 6 is run DCEP (electrode positive).

Classifications:	AWS A5.20:E70T-6, AWS A5.36:E70T6-A2-CS3, ASME SFA 5.20, ASMA SFA 5.36
Approvals:	Seismic Certified "D"
Industry or Segmentation:	Ship/Barge Building, Bridge Construction

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

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	465 MPa (67 ksi)	590 MPa (85 ksi)	26 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	-29 °C (-20 °F)	42 J (31 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Al
0.08	1.26	0.13	0.005	0.013	0.40	0.60

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
2.0 mm (5/64 in.)	275 A	22 V	381 cm/min (150 in./min)	2.9 kg/h (6.4 lb/h)	78.1 %
2.0 mm (5/64 in.)	325 A	23 V	508 cm/min (200 in./min)	3.8 kg/h (8.5 lb/h)	79.6 %
2.0 mm (5/64 in.)	390 A	24 V	762 cm/min (300 in./min)	5.5 kg/h (12.2 lb/h)	80.2 %
2.0 mm (5/64 in.)	475 A	27 V	1016 cm/min (400 in./min)	7.3 kg/h (16.3 lb/h)	80.3 %
2.0 mm (5/64 in.)	535 A	29 V	1270 cm/min (500 in./min)	9.3 kg/h (20.7 lb/h)	81.2 %
2.0 mm (5/64 in.)	600 A	31 V	1524 cm/min (600 in./min)	11.5 kg/h (25.7 lb/h)	81.7 %
2.4 mm (3/32 in.)	265 A	22 V	254 cm/min (100 in./min)	2.9 kg/h (6.1 lb/h)	78.7 %
2.4 mm (3/32 in.)	365 A	23 V	381 cm/min (150 in./min)	4.2 kg/h (9.3 lb/h)	79.8 %
2.4 mm (3/32 in.)	415 A	23 V	508 cm/min (200 in./min)	5.6 kg/h (12.5 lb/h)	80.9 %
2.4 mm (3/32 in.)	530 A	26 V	762 cm/min (300 in./min)	8.5 kg/h (19.0 lb/h)	81.8 %
2.4 mm (3/32 in.)	615 A	29 V	1016 cm/min (400 in./min)	11.6 kg/h (25.8 lb/h)	81.8 %

Recommended Welding Parameters

Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
2.4 mm (3/32 in.)	235-530 A	21-29 V	254-1016 cm/min (100-400 in./min)	38 mm (1.5 in.)

Coreshield 7

Coreshield 7 flux cored wire is a self-shielded wire designed for single or multiple pass welding of mild steel when impact toughness is not a requirement. The high deposition rate can be successfully translated into fast travel speeds. The DCEN (electrode negative) operation is characterized by a spray-like transfer and a wetting slag which make it ideal for lap and step-up fillet welds. The crumbly slag is easily removed with light scraping; the weld bead is slightly convex. The smaller diameters can be applied vertically down on 10 gauge (3.5 mm) and thicker steels. Coreshield 7 is ideally suited for structural steel applications where no seismic requirements are specified.

Classifications:	AWS A5.20:E70T-7, AWS A5.36:E70T7-Z-CS3, ASME SFA 5.20, ASME SFA 5.36
Industry or Segmentation:	Mobile Equipment, Civil Construction, Bridge Construction

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	460 MPa (67 ksi)	625 MPa (90 ksi)	26 %

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Al
0.26	0.50	0.14	0.007	0.012	1.60

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
1.6 mm (1/16 in.)	225 A	25 V	457 cm/min (180 in./min)	3.0 kg/h (6.6 lb/h)	25.4 mm (1 in.)	81 %
1.6 mm (1/16 in.)	320 A	28 V	762 cm/min (300 in./min)	4.9 kg/h (10.8 lb/h)	25.4 mm (1 in.)	80 %
1.6 mm (1/16 in.)	375 A	30 V	940 cm/min (370 in./min)	5.8 kg/h (12.8 lb/h)	25.4 mm (1 in.)	80 %
2.0 mm (5/64 in.)	275 A	26 V	368 cm/min (145 in./min)	3.3 kg/h (7.2 lb/h)	25.4 mm (1 in.)	80 %
2.0 mm (5/64 in.)	325 A	27 V	437 cm/min (172 in./min)	4.0 kg/h (8.8 lb/h)	25.4 mm (1 in.)	82 %
2.0 mm (5/64 in.)	375 A	28 V	558 cm/min (220 in./min)	5.1 kg/h (11.2 lb/h)	25.4 mm (1 in.)	84 %
2.4 mm (3/32 in.)	325 A	27 V	343 cm/min (135 in./min)	4.0 kg/h (8.8 lb/h)	31.75 mm (1.25 in.)	83 %
2.4 mm (3/32 in.)	350 A	29 V	445 cm/min (175 in./min)	4.9 kg/h (10.7 lb/h)	31.75 mm (1.25 in.)	84 %
2.4 mm (3/32 in.)	400 A	29 V	508 cm/min (200 in./min)	5.7 kg/h (12.6 lb/h)	31.75 mm (1.25 in.)	85 %

Coreshield 8

Coreshield 8 is a self-shielded flux cored wire designed to weld critical structural applications while maintaining excellent arc characteristics and high welder appeal using DCEN polarity. Coreshield 8 is tested and certified to meet the new AWS D designation requirements, making this self-shielded wire an excellent choice for demand critical welds when the AWS D1.8 Seismic Supplement is utilized

Classifications:	AWS A5.20:E71T-8 JD-H8, AWS A5.36:E71T8-A2-CS3-H8, ASME SFA 5.20, ASME SFA 5.36
Approvals:	Seismic Certified "D", ABS, BV, DB, LR, DNV-GL, CWB CSA W48 E491T-8-H8

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

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	465 MPa (67 ksi)	565 MPa (82 ksi)	24 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
As Welded	4 °C (40 °F)	85 J (65 ft-lb)
As Welded	-29 °C (-20 °F)	41 J (30 ft-lb)

Typical Weld Metal Analysis %					
C	Mn	Si	S	P	Al
0.19	0.44	0.15	0.003	0.010	0.51

Deposition Data					
Diameter	Amps	Wire Feed Speed	Deposition Rate	Efficiency	
1.6 mm (1/16 in.)	155 A	381 cm/min (150 in./min)	1.9 kg/h (4.16 lb/h)	78.6 %	
1.6 mm (1/16 in.)	180 A	470 cm/min (185 in./min)	2.3 kg/h (5.14 lb/h)	79.6 %	
1.6 mm (1/16 in.)	205 A	610 cm/min (240 in./min)	3.0 kg/h (6.60 lb/h)	78.2 %	
1.6 mm (1/16 in.)	220 A	698 cm/min (275 in./min)	3.4 kg/h (7.53 lb/h)	78.9 %	
1.8 mm (0.072 in.)	200 A	406 cm/min (160 in./min)	2.8 kg/h (6.13 lb/h)	79.4 %	
1.8 mm (0.072 in.)	225 A	483 cm/min (190 in./min)	3.3 kg/h (7.32 lb/h)	80.3 %	
2.0 mm (5/64 in.)	150 A	229 cm/min (90 in./min)	1.8 kg/h (3.96 lb/h)	80.6 %	
2.0 mm (5/64 in.)	175 A	279 cm/min (110 in./min)	2.2 kg/h (4.83 lb/h)	80.9 %	
2.0 mm (5/64 in.)	200 A	343 cm/min (135 in./min)	2.7 kg/h (5.93 lb/h)	80.4 %	

Coreshield 8-Ni1 H5

Coreshield 8-Ni1 H5 is a self-shielded flux cored wire designed to produce welds with low diffusible hydrogen and robust mechanical properties. It is welder friendly and has excellent all-position welding operability. Using DCEN polarity, it produces nice weld beads by either up-hill or down-hill welding to suit for a wider range of WPS requirements. Coreshield 8-Ni1 H5 is especially suited for making root passes or handling poor fit-up, and it features a diffusible hydrogen content lower than 5.0 ml/100g. Coreshield 8-Ni1 H5 can be ideally used in critical steel applications, such as offshore TKY joints, pipe structures, bridges, storage tanks and other applications where cold-cracking resistance is preferred.

Classifications:	AWS A5.29:E71T8-Ni1-J, AWS A5.36:E71T8-A4-Ni1, ASME SFA 5.29, ASME SFA 5.36
Industry or Segmentation:	Offshore Oil, Bridge Construction, Mobile Equipment, Civil Construction, Industrial and General Fabrication, Ship/Barge Building

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	447 MPa (65 ksi)	536 MPa (78 ksi)	30 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	-29 °C (-20 °F)	150 J (110 ft-lb)
As Welded	-40 °C (-40 °F)	146 J (108 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Al	Cu	Nb
0.02	1.4	0.35	0.008	0.008	1.00	0.04	0.01	0.008	0.75	0.04	0.003

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate
2.0 mm (5/64 in.)	120 A	20 V	127 cm/min (50 in./min)	0.83 kg/h (1.83 lb/h)
2.0 mm (5/64 in.)	170 A	21 V	190.5 cm/min (75 in./min)	1.38 kg/h (3.04 lb/h)
2.0 mm (5/64 in.)	210 A	23 V	254 cm/min (100 in./min)	1.92 kg/h (4.24 lb/h)
2.0 mm (5/64 in.)	250 A	24 V	317.5 cm/min (125 in./min)	2.35 kg/h (5.19 lb/h)
2.0 mm (5/64 in.)	280 A	25 V	381 cm/min (150 in./min)	2.83 kg/h (6.23 lb/h)

Recommended Welding Parameters

Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
2.0 mm (5/64 in.)	120-280 A	20-25 V	127-381 cm/min (50-150 in./min)	19-25.4 mm (3/4-1 in.)

Coreshield 11

Coreshield 11 is an all-position self-shielded flux cored welding wire meeting all requirements for the E71T-11 classification. Coreshield 11 is excellent for use on single or multiple pass lap, fillet and butt welds on mild steels in all welding positions. Limitations do exist for multipass welds in excess of 1/2 in (12.7 mm). It produces smooth arc action, full slag coverage, easy slag removal, and low spatter. This product should find excellent acceptance in general purpose mild steel fabrication. In structural fabrication, the product can be used where no seismic requirements are present. Coreshield 11 is run DCEN.

Classifications:	AWS A5.20:E71T-11, AWS A5.36:E71T11-Z-CS3, ASME SFA 5.20, ASME SFA 5.36
Approvals:	CWB CSA W48
Industry or Segmentation:	Civil Construction, Industrial and General Fabrication, Automotive

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

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	435 MPa (63 ksi)	620 MPa (90 ksi)	22 %

Typical Weld Metal Analysis %					
C	Mn	Si	S	P	Al
0.22	0.60	0.21	0.003	0.01	1.10

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
0.9 mm (.035 in.)	120 A	17 V	394 cm/min (155 in./min)	0.8 kg/h (1.7 lb/h)	9.5 mm (3/8 in.)	77 %
0.9 mm (.035 in.)	200 A	17 V	995 cm/min (392 in./min)	2.0 kg/h (4.5 lb/h)	9.5 mm (3/8 in.)	81 %
0.9 mm (.035 in.)	80 A	15 V	206 cm/min (81 in./min)	0.4 kg/h (0.9 lb/h)	9.5 mm (3/8 in.)	75 %
1.2 mm (.045 in.)	150 A	17 V	300 cm/min (118 in./min)	1.0 kg/h (2.1 lb/h)	12.5 mm (1/2 in.)	79 %
1.2 mm (.045 in.)	225 A	18 V	356 cm/min (140 in./min)	1.2 kg/h (2.6 lb/h)	12.5 mm (1/2 in.)	82 %
1.2 mm (.045 in.)	95 A	15 V	137 cm/min (54 in./min)	0.4 kg/h (0.9 lb/h)	12.5 mm (1/2 in.)	74 %
1.6 mm (1/16 in.)	160 A	17 V	142 cm/min (56 in./min)	1.0 kg/h (2.1 lb/h)	16 mm (5/8 in.)	78 %
1.6 mm (1/16 in.)	200 A	18 V	193 cm/min (76 in./min)	1.3 kg/h (2.9 lb/h)	16 mm (5/8 in.)	80 %
1.6 mm (1/16 in.)	275 A	19 V	335 cm/min (132 in./min)	2.4 kg/h (5.2 lb/h)	16 mm (5/8 in.)	81 %
2.0 mm (5/64 in.)	185 A	19 V	127 cm/min (50 in./min)	1.1 kg/h (2.4 lb/h)	25 mm (1 in.)	77 %
2.0 mm (5/64 in.)	250 A	20 V	231 cm/min (91 in./min)	2.0 kg/h (4.5 lb/h)	25 mm (1 in.)	79 %
2.0 mm (5/64 in.)	300 A	21 V	343 cm/min (135 in./min)	3.0 kg/h (6.6 lb/h)	25 mm (1 in.)	81 %

Coreshield 15

Coreshield 15 is an all-position self-shielded flux cored welding wire for single pass applications. Coreshield 15 produces smooth arc action, full slag coverage, easy slag removal, and low spatter. The use of DCEN (electrode negative) current minimizes the risk of burn-through. Coreshield 15 is excellent for use on lap and fillet welds on thin gauge galvanized and mild steels in all welding positions. The availability of .030" (0.8 mm) diameter makes it possible to use this product on materials as thin as 18 gauge (1.2 mm). The wire is particularly suitable for thin gauge materials 0.030 - 3/16" (0.8-5.0 mm) in galvanized, zinc-aluminum carbon, or aluminized carbon steels. In structural fabrications, the product can be used where no seismic requirements are present.

Classifications:	AWS A5.20:E71T-14, AWS A5.36:E71T14-Z-CS3, ASME SFA 5.20, ASME SFA 5.36
Industry or Segmentation:	Civil Construction, Automotive, Industrial and General Fabrication

Typical Tensile Properties

Condition	Tensile Strength
As Welded	615 MPa (89 ksi)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Al
0.24	0.58	0.23	0.002	0.012	1.53

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
0.9 mm (.035 in.)	120 A	17 V	394 cm/min (155 in./min)	0.77 kg/h (1.7 lb/h)	9.5 mm (3/8 in.)	77 %
0.9 mm (.035 in.)	200 A	17 V	995 cm/min (392 in./min)	2.04 kg/h (4.5 lb/h)	9.5 mm (3/8 in.)	81 %
0.9 mm (.035 in.)	80 A	15 V	206 cm/min (81 in./min)	0.41 kg/h (0.9 lb/h)	9.5 mm (3/8 in.)	75 %
1.2 mm (.045 in.)	150 A	17 V	300 cm/min (118 in./min)	0.95 kg/h (2.1 lb/h)	12.5 mm (1/2 in.)	79 %
1.2 mm (.045 in.)	225 A	18 V	356 cm/min (140 in./min)	1.18 kg/h (2.6 lb/h)	12.5 mm (1/2 in.)	82 %
1.2 mm (.045 in.)	95 A	15 V	137 cm/min (54 in./min)	0.41 kg/h (0.9 lb/h)	12.5 mm (1/2 in.)	74 %
1.6 mm (1/16 in.)	160 A	17 V	142 cm/min (56 in./min)	0.95 kg/h (2.1 lb/h)	16 mm (5/8 in.)	78 %
1.6 mm (1/16 in.)	200 A	18 V	193 cm/min (76 in./min)	1.32 kg/h (2.9 lb/h)	16 mm (5/8 in.)	80 %
1.6 mm (1/16 in.)	275 A	19 V	335 cm/min (132 in./min)	2.35 kg/h (5.2 lb/h)	16 mm (5/8 in.)	81 %

Coreshield 40

Coreshield 40 is a self-shielded flux cored wire primarily designed for multiple pass, horizontal and flat position welding of low and medium carbon steels when toughness is not a requirement. The larger sizes achieve very high deposit rates for very low joining costs. The low penetration, convex fillet bead shape and ability for the slag to desulfurize the deposit make it an ideal choice when crack resistance is a primary consideration. The flat position deposits are smooth and uniform with good wetting into the side walls. The core ingredients are carefully balanced to stabilize the droplet transfer, enhance the ability to handle mill scale and easily detach the slag for quick cleaning. Coreshield 40 is designed to operate on DCEP (electrode positive) with longer electrical stickout. The longer extension increases the deposit potential by preheating the wire.

Classifications:	AWS A5.20:E70T-4, AWS A5.36:E70T4-Z-CS3, ASME SFA 5.20, ASME SFA 5.36
Industry or Segmentation:	Railcars, Industrial and General Fabrication, Civil Construction

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	430 MPa (62 ksi)	595 MPa (86 ksi)	29 %

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Al
0.20	0.30	0.30	0.007	0.012	1.30

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
2.0 mm (5/64 in.)	220 A	27 V	305 cm/min (120 in./min)	2.7 kg/h (6 lb/h)	77 %
2.0 mm (5/64 in.)	300 A	28 V	452 cm/min (178 in./min)	4.26 kg/h (9.4 lb/h)	85 %
2.0 mm (5/64 in.)	400 A	29 V	584 cm/min (230 in./min)	5.26 kg/h (11.6 lb/h)	84 %
2.4 mm (3/32 in.)	350 A	28 V	498 cm/min (196 in./min)	6.26 kg/h (13.8 lb/h)	82 %
2.4 mm (3/32 in.)	375 A	29 V	539 cm/min (212 in./min)	6.85 kg/h (15.1 lb/h)	84 %
2.4 mm (3/32 in.)	400 A	30 V	582 cm/min (229 in./min)	7.3 kg/h (116.1 lb/h)	84 %