OK Flux 10.62

Agglomerated fluoride-basic flux for Submerged Arc Welding. Primarily for multi-run welding. For highest demands on impact properties, low temperature toughness, strength and CTOD-values. Especially suitable for narrow gap welding due to good slag detachability and smooth side-wall blending. The Advanced Slag Release version improves weldability with excellent slag detachability, even better side wall wetting and stronger grains which improve weld quality due to flux grain size consistency also after multiple recycling cycles. All other attributes unchanged. For Offshore constructions, pressure vessels, power generation, shipbuilding, pipe mills, civil constructions, transport industries, etc. Produces weld metals with hydrogen contents maximum 5 ml/100 g, in BlockPac (moisture protection) maximum 4 ml/100g. Operates optimally at the lower end of the voltage range. Designed for single and multi wire procedures, for butt and fillet welds. Works equally well on DC and AC current. Single layer and multi layer welding of unlimited plate thickness.

Specifications	
Classifications	EN ISO 14174 : S A FB 1 55 AC H5 EN ISO 14174 : S A FB 1 55 AC H4 only BlockPac/moisture-protection
Approvals	CE : EN 13479 DB : 51.039.07 UKCA : EN 13479

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

Diffusible Hydrogen	max 5 ml/100g weld metal (Redried flux); max 4 ml/100g in BlockPac (moisture protection)
Slag Type	Fluoride-basic
Alloy Transfer	No Silicon or Manganese alloying
Density	nom: 1.1 kg/dm3
Basicity Index	nom: 3.2

Flux_Consumption_SAW		
Volts	**DC+ Weight**	**AC Weight**
26 V	0.7 kg	0.6 kg
30 V	1.0 kg	0.9 kg
34 V	1.3 kg	1.2 kg
38 V	1.6 kg	1.4 kg

Conditions : Dimension Ø 4.0 mm , Amps 580 A , Travel Speed 55 cm/min

Classifications_SAW	Wire	Weld Metal		
Wire	**AWS/EN**	**EN - As Welded**	**AWS - As Welded**	**AWS - PWHT**
Spoolarc 81	A5.17:EM12K 14171-A:S2Si	14171-A: S 38 5 FB S2Si	A5.17: F7A8-EM12K	A5.17: F6P8-EM12K
ESAB SA10K	A5.17:EH10K 14171-B:SU10	-	A5.17: F7A6-EH10K	A5.17: F7P8-EH10K
OK Autrod 12.24	A5.23:EA2 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 46 4 FB S2Mo	A5.23: F8A6-EA2-A2	A5.23: F8P6-EA2-A2
OK Autrod 12.32	A5.17:EH12K 14171-A:S3Si	14171-A: S 46 6 FB S3Si	A5.17: F7A8-EH12K	A5.17: F7P8-EH12K
OK Autrod 12.33L	A5.23:EA3K	-	A5.23: F10A4-EA3K-G	A5.23: F9P4-EA3K-G
OK Autrod 12.34	A5.23:EA4 14171-A:S3Mo; 24598-A:S S MnMo	14171-A: S 50 4 FB S3Mo	A5.23: F8A6-EA4-A4	A5.23: F8P6-EA4-A4
OK Autrod 12.40	A5.17:EH14 14171-A:S4	14171-A: S 50 4 FB S4	A5.17: F7A6-EH14	A5.17: F7P6-EH14
OK Autrod 12.40L	A5.17:EH14 14171-B:SU41	-	A5.17: F7A6-EH14	A5.17: F7P6-EH14
OK Autrod 13.10 SC	A5.23:EB2R 24598-A:S S CrMo1	-	-	A5.23: F8P2-EB2R-B2

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Classifications_SAW	Wire	Weld Metal		
Wire	**AWS/EN**	**EN - As Welded**	**AWS - As Welded**	**AWS - PWHT**
OK Autrod 13.20 SC	A5.23:EB3R 24598-A:S S CrMo2	-	-	A5.23: F8P2-EB3R-B3
OK Autrod 13.21	A5.23:ENi1 14171-A:S2Ni1	14171-A: S 42 4 FB S2Ni1	A5.23: F7A6-ENi1-Ni1	A5.23: F7P8-ENi1-Ni1
OK Autrod 13.24	A5.23:ENi6 14171-A:S3Ni1Mo0,2	14171-A: S 50 6 FB S3Ni1Mo0,2	A5.23: F8A10-ENi6-Ni6	A5.23: F8P8-ENi6-Ni6
OK Autrod 13.27	A5.23:ENi2 14171-A:S2Ni2	14171-A: S 46 7 FB S2Ni2	A5.23: F7A10-ENi2-Ni2	A5.23: F7P10-ENi2-Ni2
OK Autrod 13.36	A5.23:EG 14171-A:S2Ni1Cu	14171-A: S 46 5 FB S2Ni1Cu	A5.23: F8A6-EG-G	-
OK Autrod 13.40	A5.23:EF3 14171-A:S3Ni1Mo; 26304-A:S3Ni1Mo; 26304-B:(SUN2M2)	26304-A: S 55 6 FB S3Ni1Mo	A5.23: F9A8-EF3-F3	A5.23: F9P8-EF3-F3
OK Autrod 13.43	A5.23:EG 26304-A:S3Ni2,5CrMo; 26304-B:(SUN4C1M3)	26304-A: S 69 6 FB S3Ni2, 5CrMo	A5.23: F11A8-EG-G	A5.23: F11P8-EG-G
OK Autrod 13.49	A5.23:ENi3 14171-A:S2Ni3	14171-A: S 46 8 FB S2Ni3	A5.23: F8A15-ENi3-Ni3	A5.23: F8P15-ENi3-Ni3
OK AutrodN 12.24	A5.23:EA2 14171-A:S2Mo; 24598-A:S S Mo	14171-A: S 46 4 FB S2Mo	A5.23: F8A6-EA2-A2	A5.23: F8P6-EA2-A2
OK AutrodN 12.32	A5.17:EH12K 14171-A:S3Si	-	-	-
OK AutrodN 13.40	A5.23:EGN 14171-A:S3Ni1Mo; 26304-A:S3Ni1Mo; 26304-B:(SUN2M2)	-	-	-
Spoolarc 29S	A5.17:EM13K	-	-	-
Spoolarc 83	A5.23:EA3K	-	-	-
Spoolarc 95	A5.23:EM2	-	-	-

Approvals_SAW												
Wire	**ABS**	**BV**	**CE**	**ClassNK**	**CWB**	**DB**	**DNV**	**GL**	**LR**	**RINA**	**UKCA**	**VdTÜV**
OK Autrod 12.24	●	-	●	-	-	-	-	-	-	-	●	●
OK Autrod 12.32	●	●	●	●	●	●	●	-	●	●	●	●
OK Autrod 12.34	●	●	●	-	-	-	●	-	●	-	●	-
OK Autrod 12.40	-	-	-	-	-	-	●	-	-	-	-	-
OK Autrod 13.10 SC	-	-	●	-	-	●	-	-	-	-	●	●
OK Autrod 13.20 SC	-	-	●	-	-	-	-	-	-	-	●	●
OK Autrod 13.24	●	●	●	-	-	-	●	-	●	-	●	-
OK Autrod 13.27	●	●	●	-	-	●	●	-	●	●	●	●
OK Autrod 13.36	-	-	●	-	-	-	-	-	-	-	●	-
OK Autrod 13.40	●	●	●	-	-	-	●	-	●	-	●	●
OK Autrod 13.43	●	●	●	-	-	-	●	-	●	-	●	-
OK Tubrod 15.27S	●	-	●	-	-	-	●	●	●	-	-	-
Spoolarc 81	●	-	-	-	●	-	-	-	-	-	-	-

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Typical Weld Metal Analysis %									
C	**Mn**	**Si**	**S**	**P**	**Ni**	**Cr**	**Mo**	**V**	**Al**
Spoolarc 81 AC, 580 A, 29 V									
0.10	0.95	0.27	-	-	-	-	-	-	-
Spoolarc 81 DC+, 580 A, 29 V									
0.07	1.0	0.30	-	-	-	-	-	-	-
Spoolarc U515 Stress Relieved 1 hr. @ 1275°F									
0.08	0.83	0.31	0.006	0.015	0.07	1.40	0.51	0.008	0.020
ESAB SA10K DC+ 550A, 29V									
0.08	1.45	0.25	-	-	-	-	-	-	-
OK Autrod 12.24 DC+, 580A, 29V									
0.07	1.0	0.22	-	-	-	-	0.5	-	-
OK Autrod 12.32 AC, 580A, 29V									
0.11	1.5	0.3	-	-	-	-	-	-	-
OK Autrod 12.32 DC+, 580A, 29V									
0.10	1.6	0.35	-	-	-	-	-	-	-
OK Autrod 12.33L									
0.06	1.70	0.75	-	-	-	-	0.40	-	-
OK Autrod 12.34 AC, 580A, 29V									
0.13	1.4	0.18	-	-	-	-	0.5	-	-
OK Autrod 12.34 DC+, 580A, 29V									
0.10	1.45	0.21	-	-	-	-	0.5	-	-
OK Autrod 12.40 AC, 580A, 29V									
0.12	1.85	0.10	-	-	-	-	-	-	-
OK Autrod 12.40 DC+, 580A, 29V									
0.08	1.9	0.12	-	-	-	-	-	-	-
OK Autrod 12.40L DC+ 550A, 29V									
0.09	1.75	0.15	-	-	-	-	-	-	-
OK Autrod 13.10 SC AC, 580A, 29V									
0.10	0.7	0.20	-	-	-	1.1	0.5	-	-
OK Autrod 13.10 SC DC+, 580A, 29V									
0.08	0.7	0.22	-	-	-	1.1	0.5	-	-
OK Autrod 13.20 SC AC, 580A, 29V									
0.09	0.60	0.20	-	-	-	2.2	1.0	-	-
OK Autrod 13.20 SC DC+, 580A, 29V									
0.08	0.60	0.20	-	-	-	2.2	0.95	-	-
OK Autrod 13.21 AC, 580A, 29V									
0.08	0.95	0.22	-	-	0.9	-	-	-	-
OK Autrod 13.21 DC+, 580A, 29V									
0.06	1.0	0.25	-	-	0.9	-	-	-	-
OK Autrod 13.24 AC, 580A, 29V									
0.10	1.3	0.25	-	-	0.9	-	0.2	-	-
OK Autrod 13.24 DC+, 580A, 29V									
0.08	1.4	0.30	-	-	0.9	-	0.2	-	-
OK Autrod 13.27 AC, 580A, 29V									
0.08	0.95	0.22	-	-	2.1	-	-	-	-
OK Autrod 13.27 DC+, 580A, 29V									
0.06	1.0	0.25	-	-	2.1	-	-	-	-

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Typical Weld Metal Analysis %									
C	**Mn**	**Si**	**S**	**P**	**Ni**	**Cr**	**Mo**	**V**	**Al**
OK Autrod 13.36 AC, 580A, 29V									
0.10	0.9	0.3	-	-	0.7	3	-	-	-
OK Autrod 13.36 DC+, 525A, 29V									
0.08	1.0	0.3	-	-	0.7	0.3	-	-	-
OK Autrod 13.40 AC, 580A, 29V									
0.10	1.45	0.23	-	-	0.9	-	0.5	-	-
OK Autrod 13.40 DC+, 580A, 29V									
0.07	1.50	0.26	-	-	0.9	-	0.5	-	-
OK Autrod 13.43 AC, 580A, 29V									
0.12	1.45	0.22	-	-	2.2	0.6	0.5	-	-
OK Autrod 13.43 DC+, 580A, 29V									
0.11	1.5	0.25	-	-	2.2	0.6	0.5	-	-
OK Autrod 13.49 AC, 580A, 29V									
0.08	0.95	0.20	-	-	3.1	-	-	-	-
OK Autrod 13.49 DC+, 580A, 29V									
0.06	1.0	0.25	-	-	3.1	-	-	-	-
Spoolarc 120									
0.07	1.55	0.31	0.006	0.013	2.32	0.34	0.48	0.008	-
Spoolarc 29S As-Welded									
0.076	1.031	0.387	0.006	0.016	0.067	0.068	0.016	0.007	0.014
Spoolarc 44 As Welded									
0.07	1.78	0.20	0.007	0.014	0.60	0.044	0.46	0.007	0.018
Spoolarc 44 Stress Relieved 1 hr. @ 1150°F									
0.07	1.73	0.18	0.007	0.014	0.59	0.044	0.46	0.007	0.018
Spoolarc 53 As Welded									
0.08	1.50	0.23	0.005	0.013	-	-	-	-	-
Spoolarc 53 Stress Relieved 1 hr. @ 1150°F									
0.07	1.60	0.47	0.007	0.014	0.021	0.041	0.014	0.004	0.022
Spoolarc 71 As Welded									
0.08	1.21	0.59	0.006	0.012	0.017	0.028	0.010	0.005	0.020
Spoolarc 71 Stress Relieved 1 hr. @ 1150°F									
0.08	1.21	0.59	0.006	0.012	0.017	0.028	0.010	0.005	0.020
Spoolarc 75									
0.07	1.02	0.65	0.004	0.020	0.95	0.04	0.01	-	0.021
Spoolarc 81									
0.09	0.97	0.18	0.009	0.011	-	-	-	-	-
Spoolarc 83 As Welded									
0.07	1.79	0.76	0.007	0.015	0.07	0.08	0.47	0.008	0.021
Spoolarc 83 Stress Relieved 1 hr. @ 1150°F									
0.07	1.79	0.76	0.007	0.015	0.07	0.08	0.47	0.008	0.021
Spoolarc 86 Stress Relieved 1 hr. @ 1150°F									
0.08	1.33	0.75	0.006	0.008	-	-	-	-	-
Spoolarc 95 As Welded									
0.06	1.55	0.32	0.003	0.008	1.74	0.15	0.38	-	-
Spoolarc ENi4 As Welded									
0.08	0.94	0.21	0.002	0.013	1.68	0.05	0.13	-	-
Spoolarc ENi4 Stress Relieved 1 hr. @ 1150°F									

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Typical Weld Metal Analysis %									
C	**Mn**	**Si**	**S**	**P**	**Ni**	**Cr**	**Mo**	**V**	**Al**
0.08	0.94	0.21	0.002	0.013	1.68	0.05	0.13	-	-

Typical Weld Metal Analysis %			
Cu	**Nb**	**Ti**	**Co**
Spoolarc U515 Stress Relieved 1 hr. @ 1275°F			
0.140	0.004	0.007	0.010
OK Autrod 13.36 AC, 580A, 29V			
0.4	-	-	-
OK Autrod 13.36 DC+, 525A, 29V			
0.4	-	-	-
Spoolarc 120			
0.030	-	0.010	-
Spoolarc 29S As-Welded			
0.149	-	0.004	0.007
Spoolarc 44 As Welded			
0.041	0.004	0.006	0.007
Spoolarc 44 Stress Relieved 1 hr. @ 1150°F			
0.044	0.004	0.005	0.007
Spoolarc 53 As Welded			
0.080	-	-	-
Spoolarc 53 Stress Relieved 1 hr. @ 1150°F			
0.066	0.002	0.010	0.005
Spoolarc 71 As Welded			
0.083	0.002	0.019	0.004
Spoolarc 71 Stress Relieved 1 hr. @ 1150°F			
0.083	0.002	0.019	0.004
Spoolarc 75			
0.090	-	-	-
Spoolarc 81			
0.140	-	-	-
Spoolarc 83 As Welded			
0.120	0.003	0.011	0.036
Spoolarc 83 Stress Relieved 1 hr. @ 1150°F			
0.120	0.003	0.011	0.036
Spoolarc 86 Stress Relieved 1 hr. @ 1150°F			
0.010	-	-	-
Spoolarc 95 As Welded			
0.170	-	-	-
Spoolarc ENi4 As Welded			
0.120	-	-	-
Spoolarc ENi4 Stress Relieved 1 hr. @ 1150°F			
0.120	-	-	-

SAW_Typical_Mech_Properties					
Wire	**Testing Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch Result**
Spoolarc 81	As Welded AWS DC+	410 MPa	500 MPa	33 %	170 J @ 0 °C

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SAW_Typical_Mech_Properties					
Wire	**Testing Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch Result**
					160 J @ -20 °C 90 J @ -40 °C 70 J @ -50 °C 35 J @ -62 °C
Spoolarc 81	Stress Relieved AWS DC+ (1.0 hour(s))	360 MPa	480 MPa	34 %	190 J @ 0 °C 170 J @ -20 °C 130 J @ -40 °C 75 J @ -50 °C 35 J @ -62 °C
Spoolarc 81	As Welded EN AC	430 MPa	510 MPa	29 %	180 J @ 0 °C 170 J @ -20 °C 90 J @ -40 °C 80 J @ -50 °C
Spoolarc U515	Stress Relieved	563 MPa	649 MPa	27 %	109 J @ -29 °C
ESAB SA10K	As Welded DC+	490 MPa	570 MPa	28 %	100 J @ -29 °C 55 J @ -40 °C 40 J @ -51 °C
ESAB SA10K	PWHT DC+ (15 hour (s))	410 MPa	510 MPa	37 %	210 J @ -40 °C 180 J @ -51 °C 105 J @ -62 °C
ESAB SA10K	PWHT DC+ (1 hour (s))	450 MPa	540 MPa	30 %	110 J @ -29 °C 80 J @ -40 °C 35 J @ -51 °C 30 J @ -62 °C
ESAB SA10K	PWHT DC+ (5 hour (s))	410 MPa	520 MPa	35 %	200 J @ -40 °C 140 J @ -51 °C 40 J @ -62 °C
ESAB SA10K	PWHT DC+ (19 hour (s))	410 MPa	500 MPa	38 %	200 J @ -51 °C 150 J @ -62 °C
ESAB SA10K	PWHT DC+ (22 hour (s))	410 MPa	500 MPa	36 %	205 J @ -51 °C 150 J @ -62 °C
ESAB SA10K	PWHT DC+ (10 hour (s))	410 MPa	510 MPa	36 %	230 J @ -40 °C 170 J @ -51 °C 100 J @ -62 °C
OK Autrod 12.24	As Welded EN AC	520 MPa	600 MPa	24 %	150 J @ 20 °C 125 J @ 0 °C 100 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.24	As Welded AWS DC+	500 MPa	580 MPa	25 %	140 J @ 20 °C 115 J @ 0 °C 80 J @ -20 °C 60 J @ -40 °C 45 J @ -51 °C
OK Autrod 12.24	Stress Relieved AWS DC+ (1.0 hour(s))	510 MPa	580 MPa	30 %	140 J @ 20 °C 100 J @ 0 °C 75 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.32	As Welded EN AC	520 MPa	600 MPa	26 %	175 J @ 20 °C 170 J @ 0 °C 110 J @ -30 °C

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SAW_Typical_Mech_Properties					
Wire	**Testing Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch Result**
					90 J @ -40 °C 60 J @ -60 °C
OK Autrod 12.32	As Welded AWS DC+	475 MPa	560 MPa	28 %	175 J @ 20 °C 150 J @ 0 °C 130 J @ -30 °C 110 J @ -40 °C 70 J @ -62 °C
OK Autrod 12.32	Stress Relieved AWS DC+ (1.0 hour(s))	410 MPa	510 MPa	28 %	175 J @ 20 °C 165 J @ 0 °C 140 J @ -30 °C 110 J @ -40 °C 60 J @ -62 °C
OK Autrod 12.33L	As Welded DC+	660 MPa	740 MPa	25 %	45 J @ -29 °C 30 J @ -40 °C
OK Autrod 12.33L	PWHT DC+ (1 hour (s))	620 MPa	690 MPa	26 %	50 J @ -29 °C 30 J @ -40 °C
OK Autrod 12.34	Stress Relieved AWS DC+ (1.0 hour(s))	540 MPa	620 MPa	29 %	165 J @ 20 °C 150 J @ 0 °C 120 J @ -20 °C 70 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.34	As Welded EN AC	560 MPa	630 MPa	25 %	160 J @ 20 °C 150 J @ 0 °C 130 J @ -20 °C 100 J @ -40 °C 55 J @ -51 °C
OK Autrod 12.34	As Welded AWS DC+	540 MPa	620 MPa	24 %	170 J @ 20 °C 160 J @ 0 °C 140 J @ -20 °C 115 J @ -40 °C 45 J @ -51 °C
OK Autrod 12.40	As Welded AWS DC+	530 MPa	620 MPa	26 %	140 J @ 20 °C 110 J @ 0 °C 80 J @ -20 °C 50 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.40	As Welded EN AC	550 MPa	630 MPa	22 %	150 J @ 20 °C 105 J @ 0 °C 70 J @ -20 °C 55 J @ -40 °C 40 J @ -51 °C
OK Autrod 12.40	Stress Relieved AWS DC+ (1.0 hour(s))	460 MPa	560 MPa	26 %	140 J @ 20 °C 110 J @ 0 °C 70 J @ -20 °C 45 J @ -40 °C 35 J @ -51 °C
OK Autrod 12.40L	PWHT DC+ (1 hour (s))	450 MPa	550 MPa	28 %	110 J @ -29 °C 90 J @ -40 °C 50 J @ -51 °C
OK Autrod 12.40L	As Welded DC+	520 MPa	610 MPa	26 %	100 J @ -29 °C 85 J @ -40 °C 40 J @ -51 °C
OK Autrod 13.10 SC	Stress Relieved EN	430 MPa	560 MPa	26 %	140 J @ 20 °C

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SAW_Typical_Mech_Properties					
Wire	**Testing Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch Result**
	DC+ (15.0 hour(s))				
OK Autrod 13.10 SC	Stress Relieved EN DC+ (1.0 hour(s))	510 MPa	605 MPa	25 %	200 J @ 20 °C
OK Autrod 13.10 SC	Stress Relieved AWS DC+ (1.0 hour(s))	500 MPa	610 MPa	26 %	110 J @ -18 °C 80 J @ -29 °C
OK Autrod 13.20 SC	Stress Relieved AWS DC+ (1.0 hour(s))	525 MPa	620 MPa	25 %	120 J @ -18 °C 80 J @ -29 °C
OK Autrod 13.20 SC	Stress Relieved EN DC+ (0.5 hour(s))	515 MPa	620 MPa	24 %	180 J @ 20 °C 150 J @ 0 °C
OK Autrod 13.20 SC	Stress Relieved EN DC+ (1.0 hour(s))	500 MPa	615 MPa	25 %	200 J @ 20 °C 130 J @ -20 °C
OK Autrod 13.21	As Welded AWS DC+	470 MPa	560 MPa	28 %	195 J @ 20 °C 185 J @ 0 °C 160 J @ -20 °C 70 J @ -40 °C 60 J @ -51 °C
OK Autrod 13.21	As Welded EN AC	520 MPa	595 MPa	24 %	170 J @ 20 °C 165 J @ 0 °C 150 J @ -20 °C 70 J @ -40 °C 50 J @ -51 °C
OK Autrod 13.21	Stress Relieved AWS DC+ (1.0 hour(s))	435 MPa	540 MPa	30 %	190 J @ 20 °C 180 J @ 0 °C 160 J @ -20 °C 110 J @ -40 °C 70 J @ -51 °C 60 J @ -62 °C
OK Autrod 13.24	As Welded AWS DC+	530 MPa	620 MPa	25 %	120 J @ -40 °C 110 J @ -50 °C 70 J @ -60 °C 50 J @ -73 °C
OK Autrod 13.24	As Welded EN AC	560 MPa	640 MPa	23 %	130 J @ -40 °C 120 J @ -50 °C 80 J @ -60 °C
OK Autrod 13.24	Stress Relieved AWS DC+ (1.0 hour(s))	500 MPa	590 MPa	27 %	120 J @ -40 °C 100 J @ -50 °C 65 J @ -62 °C
OK Autrod 13.27	Stress Relieved AWS DC+ (1.0 hour(s))	460 MPa	570 MPa	28 %	150 J @ -20 °C 100 J @ -40 °C 90 J @ -60 °C 40 J @ -73 °C
OK Autrod 13.27	As Welded EN AC	520 MPa	605 MPa	27 %	150 J @ -20 °C 120 J @ -40 °C 80 J @ -60 °C 60 J @ -70 °C
OK Autrod 13.27	As Welded AWS DC+	460 MPa	570 MPa	28 %	140 J @ -20 °C 110 J @ -40 °C 80 J @ -60 °C 50 J @ -73 °C
OK Autrod 13.36	As Welded EN AC	550 MPa	620 MPa	25 %	110 J @ -40 °C 90 J @ -50 °C
OK Autrod 13.36	As Welded AWS DC+	500 MPa	590 MPa	27 %	70 J @ -40 °C

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SAW_Typical_Mech_Properties					
Wire	**Testing Condition**	**Yield Strength**	**Tensile Strength**	**Elongation**	**Charpy V-Notch Result**
					60 J @ -51 °C
OK Autrod 13.40	As Welded EN AC	660 MPa	730 MPa	24 %	110 J @ -40 °C 90 J @ -50 °C 70 J @ -60 °C
OK Autrod 13.40	As Welded AWS DC+	610 MPa	690 MPa	24 %	90 J @ -40 °C 80 J @ -50 °C 50 J @ -62 °C
OK Autrod 13.40	Stress Relieved AWS DC+ (1 hour(s))	600 MPa	680 MPa	26 %	60 J @ -40 °C 45 J @ -62 °C
OK Autrod 13.43	As Welded AWS DC+	700 MPa	800 MPa	21 %	100 J @ -20 °C 75 J @ -40 °C 65 J @ -50 °C 50 J @ -62 °C
OK Autrod 13.43	Stress Relieved AWS DC+ (1.0 hour(s))	695 MPa	790 MPa	21 %	80 J @ -20 °C 60 J @ -40 °C 50 J @ -50 °C 40 J @ -62 °C
OK Autrod 13.43	As Welded EN ISO-A AC	720 MPa	845 MPa	19 %	110 J @ -20 °C 90 J @ -40 °C 70 J @ -50 °C 60 J @ -60 °C
OK Autrod 13.49	As Welded EN AC	560 MPa	640 MPa	22 %	95 J @ -70 °C 75 J @ -80 °C 55 J @ -90 °C
OK Autrod 13.49	Stress Relieved AWS DC+ (1.0 hour(s))	510 MPa	570 MPa	29 %	95 J @ -70 °C 50 J @ -101 °C
OK Autrod 13.49	As Welded AWS DC+	500 MPa	600 MPa	27 %	95 J @ -70 °C 40 J @ -101 °C
Spoolarc 120	As Welded	758 MPa	827 MPa	21 %	90 J @ -51 °C
Spoolarc 29S	As Welded	466 MPa	553 MPa	31 %	183 J @ -40 °C 114 J @ -51 °C 74 J @ -62 °C
Spoolarc 44	As Welded	630 MPa	689 MPa	26 %	136 J @ -51 °C
Spoolarc 44	Stress Relieved	626 MPa	676 MPa	29 %	148 J @ -40 °C
Spoolarc 53	Stress Relieved	466 MPa	573 MPa	31 %	114 J @ -62 °C
Spoolarc 53	As Welded	465 MPa	553 MPa	32 %	178 J @ -62 °C
Spoolarc 71	Stress Relieved	460 MPa	573 MPa	31 %	121 J @ -51 °C
Spoolarc 71	As Welded	511 MPa	590 MPa	28 %	126 J @ -51 °C
Spoolarc 75	As Welded	-	-	-	246 J @ -29 °C 203 J @ -40 °C 163 J @ -46 °C 142 J @ -51 °C
Spoolarc 81	As Welded	442 MPa	527 MPa	31 %	80 J @ -62 °C
Spoolarc 83	As Welded	692 MPa	746 MPa	24 %	62 J @ -51 °C
Spoolarc 83	Stress Relieved	645 MPa	719 MPa	27 %	82 J @ -51 °C
Spoolarc 86	Stress Relieved	429 MPa	556 MPa	35 %	212 J @ -51 °C
Spoolarc 95	As Welded	686 MPa	758 MPa	25 %	101 J @ -51 °C
Spoolarc ENi4	As Welded	532 MPa	618 MPa	27 %	145 J @ -62 °C 109 J @ -73 °C
Spoolarc ENi4	Stress Relieved	482 MPa	580 MPa	28 %	166 J @ -62 °C 124 J @ -73 °C