

Part III : MIG/MAG wires

Description

ESAB 70S-6 is a copper-coated, manganese silicon wire for the GMAW of unalloyed steels, such as general structural steels with a minimum tensile strength of 530 MPa, and for fine grained carbon manganese steels with a minimum yield strength of 420 MPa. ESAB 70S-6 can be welded with pure CO₂ or 80% Argon / 20% CO₂ as the shielding gas.

Welding current

DC (+)

Classifications

SFA/AWS A5.18 ER70S-6
EN 440 G3Si1

Typical all weld metal composition, %

C	Si	Mn
0.08	0.9	1.5

Typical properties of all weld metal

Yield stress, Mpa 475
Tensile strength, MPa 560
Elongation, % 24

Charpy V

Test temps, °C Impact values, J
+20 110
-20 70

Approvals

ABS 3YSA
DNV IIIYMS

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.6	5.5-13.0	30-100	15-20	0.7-1.7
0.8	3.2-13.0	60-200	18-24	0.8-3.0
0.9	3.0-12.0	70-250	18-26	0.9-3.6
1.0	2.7-15.0	80-300	18-32	1.0-5.6
1.2	2.3-15.0	120-380	18-34	1.3-8.0
1.6	3.2-12.0	225-550	28-38	3.0-9.0

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
70S6062470	0.6	15	1080
70S6082470	0.8	15	1080
70S6092470	0.9	15	1080
70S6102470	1.0	15	1080
70S6122470	1.2	15	1080
70S6162470	1.6	15	1080

Description

OK Autrod 12.51 is a copper-coated, Mn-Si-alloyed G3Si1/ER70S-6 solid wire for the GMAW of non-alloyed steels, as used in general construction, pressure vessel fabrication and shipbuilding. The wire has carefully controlled wire chemistry and a unique surface technology providing superior weld-metal quality at high wire feed speeds and at high welding currents. The wire can be used with both Ar/CO₂ mixed gas and pure CO₂ shielding gas.

Welding current

DC (+)

Approvals

ABS	3SA, 3YSA	RS	3YMS
BV	SA3YM	Sepros	UNA 046731
CE	EN13479	VdTÜV	00899
DB	42.039.06		
DNV	III YMS		
GL	3YS		
LR	3 3YS		
PRS	3YS		

Classifications

SFA/AWS A5.18	ER70S-6
EN 440	G3Si1

Typical all weld metal composition, %

C	Si	Mn
0.08	0.63	0.94

Typical properties of all weld metal

Yield stress, Mpa	470
Tensile strength, MPa	560
Elongation, %	26

Charpy V

Test temps, °C	Impact values, J
+20	130
-20	90
-30	70

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.6	5.5-13	30-100	15-20	0.7-1.7
0.8	3.2-13	60-200	18-24	0.8-3.0
0.9	3.0-12	70-250	18-26	0.9-3.6
1.0	2.7-15	80-300	18-32	1.0-5.6
1.2	2.5-15	120-380	18-34	1.3-8.0
1.6	2.3-12	225-550	28-38	2.1-11.4

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1251087700	0.8	15	840
1251097710	0.9	18	1008
1251107700	1.0	15	840
1251127700	1.2	15	840
Marathon Pac			
125112932F	1.2	250	1000
125116940F	1.6	475	950

OK AristoRod 12.50 GMAW

ER70S-6

Description

The non-copper coated OK AristoRod 12.50 is a manganese-silicon alloyed solid wire for GMAW of unalloyed steels, such as general construction, pressure vessel, ship building and for fine-grained carbon manganese steels for the same purpose with a minimum yield strength of max 420 MPa. OK AristoRod 12.50 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 12.50 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with CO₂.

Welding current

DC (+)

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1A5008247H	0.8	15	840
1A5009247H	0.9	15	840
1A5010247H	1.0	15	840
1A5012247H	1.2	15	840
1A5014247H	1.4	15	840
1A5016247H	1.6	15	840
Marathon Pac			
1A50089300	0.8	200	800
1A50099320	0.9	250	1000
1A50109320	1.0	250	1000
1A50129320	1.2	250	1000
1A50129400	1.2	475	950
1A50149400	1.4	475	950
1A50169400	1.6	475	950
1A5016940F	1.6	475	950

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	3.2-10.0	60-200	18-24	0.8-2.5
0.9	3.0-12.0	70-240	18-26	0.8-3.3
1.0	2.7-15.0	80-300	18-32	1.0-5.5
1.2	2.5-15.0	120-380	18-35	1.3-8.0
1.4	2.3-12.0	150-420	22-36	1.6-8.7
1.6	2.3-15.0	225-550	28-38	2.1-11.4

Classifications

SFA/AWS A5.18	ER70S-6
EN 440	G3Si1
CSA W48	ER49S-6

Typical all weld metal composition, %

C	Si	Mn
0.08	0.63	0.94

Typical properties of all weld metal

Yield stress, Mpa	440
Tensile strength, MPa	540
Elongation, %	25

Charpy V

Test temps, °C	Impact values, J
+20	130
-20	90
-30	70

Approvals

ABS	3SA, 3YSA
BV	SA3YM
CE	EN 13479
CWB	CSA1048
DB	42,039,29
DNV	III YMS
GL	3YS
LR	3S, 3YS
VdTüV	10052

Description

The non-copper coated OK AristoRod 13.08 is ER80S-D2 classified, manganese-molybdenum (1.6%Mn, 0.4%Mo), solid wire for GMAW of creep resistant steels of the same type, such as pipes in pressure vessels and boilers with a working temperature of up to 500°C. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.08 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28	ER80S-D2
EN 440	G4Mo
CSA W48	ER80S-D2

Typical all weld metal composition, %

C	Si	Mn	Mo
0.07	0.5	1.6	0.4

Typical properties of all weld metal

Yield stress, Mpa	540
Tensile strength, MPa	645
Elongation, %	25

Charpy V

Test temps, °C	Impact values, J
+20	90
-29	28

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	90-300	16-22	1-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-12	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B0810771F	1.0	18	1008
1B0812771F	1.2	18	1008
1B0816771F	1.6	18	1008
Marathon Pac			
1B0812932F	1.2	250	1000

OK AristoRod 13.09 GMAW

ER80S-G

Description

The non copper coated OK AristoRod 13.09 is a low alloyed, molybdenum (0.5% Mo), solid wire for GMAW of creep resistant steels of the same type, such as pipes in pressure vessels and boilers with a working temperature of up to 500°C. OK AristoRod 13.09 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.09 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28	ER80S-G
EN 440	G2Mo
EN 12070	G MoSi

Typical all weld metal composition, %

C	Si	Mn	Mo
0.1	0.7	1.1	0.5

Typical properties of all weld metal

Yield stress, Mpa	540
Tensile strength, MPa	630
Elongation, %	25

Charpy V

Test temps, °C	Impact values, J
+20	117
-20	77
-40	57

Approvals

CE	EN 13479
DB	42.039.31
DNV	III YMS (M21)
VdTüV	10088

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-12	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B09106910	1.0	18	1008
1B0912771F	1.2	18	1008
1B0916771F	1.6	18	1008
Marathon Pac			
1B0912932F	1.2	250	1000
1B0916940F	1.6	475	950

OK AristoRod 13.12 GMAW

ER80S-G

Description

The non copper coated OK AristoRod 13.12 is a low-alloyed, chromium-molybdenum (1.1% Cr, 0.5% Mo), solid wire for GMAW creep resistant steels of similar composition and is suitable for service temperatures up to 450°C. OK AristoRod 13.12 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.12 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-12	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B1210771F	1.0	18	1008
1B1212771F	1.2	18	1008
1B1216771F	1.6	18	1008
Marathon Pac			
1B1212932F	1.2	250	1000
1B1216940F	1.6	475	950

Classifications

SFA/AWS A5.28	ER80S-G
EN 12070	G CrMo1Si
GOST 2246	08X CM A

Typical all weld metal composition, %

C	Si	Mn	P
0.1	0.7	1.0	0.010
S	Cr	Mo	
0.015	1.1	0.5	

Typical properties of all weld metal

Stress relieved 700°C 1/2hr	
Yield stress, Mpa	450
Tensile strength, MPa	580
Elongation, %	24

Charpy V

Test temps, °C	Impact values, J
+20	80
0	40
-20	30

Approvals

VdTUV	10089
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OK AristoRod 13.13 GMAW

ER100S-G

Description

The non copper coated OK AristoRod 13.13 is a low alloyed, chromium-nickel-molybdenum (0.5% Cr, 0.5% Ni, 0.2% Mo), solid wire for GMAW of high strength steels. It is also suitable when welding steels where good impact toughness is required at lower temperatures. OK AristoRod 13.13 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.13 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28 ER100S-G
EN 12534 G Mn3NiCrMo

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	Mo
0.11	0.5	1.1	0.5	0.5	0.2

Typical properties of all weld metal

Yield stress, Mpa 690
Tensile strength, MPa 770
Elongation, % 20

Charpy V

Test temps, °C	Impact values, J
0	80
-20	75
-30	65
-40	60

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1.0-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.5-12.0	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B13106910	1.0	18	1008
1B1312771F	1.2	18	1008
1B1316771F	1.6	18	1008
Marathon Pac 1B1312932F	1.2	250	1000

OK AristoRod 13.22 GMAW

ER90S-G

Description

The non copper coated OK AristoRod 13.22 is a low alloyed, chromium-molybdenum (2.6% Cr, 1.1% Mo) solid wire for GMAW of creep resistant steels of similar composition for service temperatures up to 600°C. OK AristoRod 13.22 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.22 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28 ER90S-G
EN 12070 G CrMo2Si

Typical all weld metal composition, %

C	Si	Mn	Cr	Mo
0.06	0.6	1.0	2.5	1.0

Typical properties of all weld metal

Yield stress, Mpa 750
Tensile strength, MPa 890
Elongation, % 19

Charpy V

Test temps, °C Impact values, J
+20 55
-40 30

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1.0-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-8.1	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B2210771F	1.0	18	1008
1B2212771F	1.2	18	1008
1B2216771F	1.6	18	1008
Marathon Pac			
1B2212932F	1.2	250	1000
1B2216940F	1.6	475	950

OK AristoRod 13.26

GMAW
ER80S-G

Description

The non-copper coated OK AristoRod 13.26 is a low alloyed, nickel-copper (0.8% Ni, 0.3% Cu), solid wire GMAW of weathering steels, such as COR-TEN, Patinax, Dilicor etc. The weld metal composition and mechanical properties also make this product suitable for welding high strength steels with minimum yield strength less than 470 MPa. OK AristoRod 13.26 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.26 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28 ER80S-G

Typical all weld metal composition, %

C	Si	Mn	Ni	Cu
0.1	0.8	1.4	0.8	0.3

Typical properties of all weld metal

Yield stress, Mpa	540
Tensile strength, MPa	625
Elongation, %	26

Charpy V

Test temps, °C	Impact values, J
+20	140
0	142
-20	110
-40	83
-60	50

Approvals

DB	42.039.32
DNV	III YMS (M21)
DNV	II YMS (C1)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1.0-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-8.1	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B26106910	1.0	18	1008
1B2612771F	1.2	18	1008
1B2616771F	1.6	18	1008
Marathon Pac 1B2616940F	1.6	475	950

Description

The non-copper coated OK AristoRod 13.29 is a low alloyed, chromium-nickel-molybdenum (0.3%Cr, 1.4% Ni, 0.25% Mo), solid wire for GMAW of high tensile strength steels requiring tough weld metal for critical applications. Highly suitable when high impact strength at low temperatures is required. OK AristoRod 13.29 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.29 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	2.7-14.7	80-280	18-28	1.0-5.4
1.2	2.7-12.4	120-350	20-33	1.5-6.6
1.6	3.1-8.1	225-480	26-38	3.3-11.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B2910771F	1.0	18	1008
1B2912771F	1.2	18	1008
1B2916771F	1.6	18	1008
Marathon Pac			
1B2912932F	1.2	250	1000
1B2916940F	1.6	475	950

Classifications

SFA/AWS A5.28 ER100S-G
EN 12534 G Mn3Ni1CrMo

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	Mo	V
0.06	0.6	1.6	0.3	1.4	0.25	0.07

Typical properties of all weld metal

Yield stress, Mpa 700
Tensile strength, MPa 800
Elongation, % 19

Charpy V

Test temps, °C Impact values, J
+20 100
-20 70
-30 60

Approvals

DB 42.039.33
VdTüV 10090
CE EN 13479

OK AristoRod 13.31

GMAW

ER110S-G

Description

The non copper coated OK AristoRod 13.31 is a low alloyed, chromium-nickel-molybdenum (0.3% Cr, 1.9% Ni, 0.5% Mo), solid wire for GMAW of high tensile strength steels, heat treated steels and fine grained constructional steels, such as XABO90 with a minimum yield strength less than 850MPa. OK AristoRod 13.31 is treated with ESAB's unique advanced surfaced characteristics (ASC) technology, taking MAG welding operations to new levels of performance and all round efficiency, especially in robotic and mechanised welding. The AristoRod wires are suitable for operating at high currents with maintained disturbance free wire feeding, giving a stable arc with a low amount of spatter. OK AristoRod 13.31 delivered in the unique ESAB Octagonal Marathon Pac is excellent for mechanised welding applications. The mechanical properties quoted here are welded with 80Ar/20CO₂.

Welding current

DC (+)

Classifications

SFA/AWS A5.28 ER110S-G
EN 12534 G Mn4Ni2CrMo

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	Mo
0.1	0.7	1.7	0.3	1.9	0.5

Typical properties of all weld metal

Yield stress, Mpa 850
Tensile strength, MPa 890
Elongation, % 18

Charpy V

Test temps, °C Impact values, J
0 70
-20 60
-30 50

Approvals

CE EN 13479

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.2	2.7-12.4	120-350	20-33	1.5-6.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1B3112771F	1.2	18	1008

Description

A continuous solid, corrosion-resistant, chromium-nickel wire for welding austenitic chromium-nickel alloys of the 18% Cr-8% Ni type. OK Autrod 308LSi has a good general corrosion resistance. The alloy has a low carbon content, making it particularly recommended where there is a risk of intergranular corrosion. The higher silicon content improves the welding properties such as wetting. The alloy is widely used in the chemical and food processing industries, as well as for pipes, tubes and boilers.

Welding current

DC (+)

Approvals

DB	43.039.01
DNV	308L MS (-196°C)
Sepros	UNA 485178
UDT	DIN 8556
VdTüV	04267
Ü	43.039/1

Classifications

SFA/AWS A5.9	ER308LSi
EN 12072	G 19 9 LSi
Werkstoffnummer	~1.4316

Typical all weld metal composition, %

C	Si	Mn	Cr
<0.03	0.8	1.8	20.0
Ni	Mo	Cu	
10.0	<0.3	<0.3	

Typical properties of all weld metal

Yield stress, Mpa	370
Tensile strength, MPa	620
Elongation, %	36

Charpy V

Test temps, °C	Impact values, J
+20	110
-60	90
-196	60

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate kg weld metal/hour
0.8	4.0-17.0	55-160	15-24	1.0-4.2
0.9	3.5-18.0	65-220	15-28	1.1-5.4
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-29	1.6-7.5
1.6	5.5-9.0	230-375	23-29	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1612089820	0.8	15	750
1612099820	0.9	15	750
1612109820	1.0	15	750
1612129820	1.2	15	750
1612169820	1.6	15	750

Description

A continuous, solid, corrosion-resistant, chromium-nickel wire for welding steels with a similar composition, wrought and cast steels of the 23% Cr –12% Ni types. The alloy is also used for welding buffer layers on CMn steels and welding dissimilar joints. When using the wire for buffer layers and dissimilar joints, it is necessary to control the dilution of the weld. OK Autrod 309LSi has good general corrosion resistance. The higher silicon content improves the welding properties such as wetting.

Welding current

DC (+)

Approvals

DB	43.039.16
UDT	DIN 8556
VdTÜV	
Ü	43.039/1

Classifications

SFA/AWS A5.9	ER309LSi
EN 12072	G 23 12 LSi
Werkstoffnummer	~1.4332

Typical all weld metal composition, %

C	Si	Mn	Cr
<0.03	0.8	1.8	24.0
Ni	Mo	Cu	
13.0	<0.3	<0.3	

Typical properties of all weld metal

Yield stress, Mpa	440
Tensile strength, MPa	600
Elongation, %	41

Charpy V

Test temps, °C	Impact values, J
+20	160
-60	130
-110	90

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	4.0-17.0	55-160	15-24	1.0-4.0
0.9	3.5-18.0	65-220	15-28	1.1-5.4
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-29	1.6-7.5
1.6	5.5-9.0	230-375	23-31	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1651089820	0.8	15	750
1651099820	0.9	15	750
1651109820	1.0	15	750
1651129820	1.2	15	750
1651169820	1.6	15	750

Description

A continuous, solid, corrosion-resistant wire of the 309MoL type. OK Autrod 309MoL is used for the overlay welding of unalloyed and low-alloyed steels and for welding dissimilar steels, such as 316L, to unalloyed and low-alloyed steels when Mo is essential.

Welding current

DC (+)

Classifications

EN 12072 G 23 12 2 L

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	Mo
0.01	0.45	1.8	23.0	13.3	2.8

Typical properties of all weld metal

Yield stress, Mpa	400
Tensile strength, MPa	600
Elongation, %	31

Charpy V

Test temps, °C	Impact values, J
+20	110

Approvals

RINA	Restricted availability
UDT	DIN 8556
VdTüV	07352

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	3.4-11.0	50-140	16-22	0.8-2.6
1.0	2.9-8.4	80-190	16-24	1.0-3.2
1.2	4.9-8.5	180-280	20-28	2.7-4.6
1.6	3.2-5.5	230-350	24-28	3.0-5.2

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1654109820	1.0	15	1500
1654129820	1.2	15	1500
1654169820	1.6	15	1500

Description

A continuous, solid, corrosion-resistant, chromium-nickel-molybdenum wire for welding austenitic stainless alloys of the 18% Cr –8% Ni and 18% Cr –10% Ni –3% Mo types. OK Autrod 316LSi has good general corrosion resistance; In particular, the alloy has very good resistance to corrosion in acid and chlorinated environments. The alloy has a low carbon content which makes it particularly recommended when there is a risk of intergranular corrosion. The higher silicon content improves the welding properties such as wetting. The alloy is widely used in the chemical and food processing industries, as well as in shipbuilding and various types of architectural structure.

Welding current

DC (+)

Approvals

DB	43.039.05
DNV	316L MS (-120°C)
UDT	DIN 8556
VdTÜV	04268
Ü	43.039/1

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	4.0-17.0	55-160	12-24	1.0-4.2
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-29	1.6-7.5
1.6	5.5-9.0	230-375	23-31	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1632089820	0.8	15	750
1632109820	1.0	15	750
1632129820	1.2	15	750
1632169820	1.6	15	750

Classifications

EN 12072	G 19 12 3 LSi
SFA/AWS A5.9	ER316LSi
Werkstoffnummer	~1.4430

Typical all weld metal composition, %

C	Si	Mn	Cr
0.02	0.8	1.8	18.5
Ni	Mo	Cu	
12	2.7	0.1	

Typical properties of all weld metal

Yield stress, Mpa	440
Tensile strength, MPa	620
Elongation, %	37

Charpy V

Test temps, °C	Impact values, J
+20	120
-60	95
-196	55

OK Autrod 410NiMo

GMAW

G 13 4

Description

A continuous, solid welding wire of the 12% Cr, 4.5% Ni, 0.5% Mo type. OK Autrod 410NiMo is used for welding similar martensitic and martensitic-ferritic steels in different applications, such as hydro turbines.

Welding current

DC (+)

Classifications

EN 12072 G 13 4

Typical all weld metal composition, %

C	Si	Mn	Cr
0.015	0.3	0.4	12
Ni	Mo	Cu	
4.5	0.5	<0.3	

Typical properties of all weld metal

Yield stress, Mpa	600
Tensile strength, MPa	840
Elongation, %	17

Charpy V

Test temps, °C	Impact values, J
-10	80

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	4.0-17.0	55-160	12-24	1.0-4.1
0.9	3.5-18.0	65-220	15-28	1.1-5.4
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-19	1.6-7.5
1.6	5.5-9.0	230-365	23-31	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1679089820	0.8	15	1500
1679109820	1.0	15	1500
1679129820	1.2	15	1500

Description

A ferritic, stainless, solid wire with a low carbon content, 18% Cr and stabilised with Nb, for welding similar and matching steels. OK Autrod 430 LNb has been developed and designed for the automotive industry and is used in the production of exhaust systems. The wire should be used when very good resistance to corrosion and thermal fatigue is required.

Welding current

DC (+)

Classifications

EN 12072 G Z 17 L Nb
Werkstoffnummer ~1.4511

Typical all weld metal composition, %

C	Si	Mn	Cr
<0.03	0.5	0.5	18.2

Typical properties of all weld metal

Yield stress, Mpa 275
Tensile strength, MPa 420
Elongation, % 26

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.9	3.5-18.0	65-220	15-28	1.1-5.4
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-19	1.6-7.5

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1676098820	0.9	15	750
1676109820	1.0	15	750
1676129820	1.2	15	750
Marathon Pac			
1676129320	1.2	250	500
1676169400	1.6	47	950

Description

A continuous, solid, corrosion-resistant, chromium-nickel-manganese wire for welding austenitic stainless alloys of the 18% Cr, 8% Ni, 7% Mn types. OK Autrod 16.95 has general corrosion resistance similar to that of the corresponding parent metal. The higher silicon content improves the welding properties such as wetting. When used for joining dissimilar materials, the corrosion resistance is of secondary importance. The alloy is used in a wide range of applications across the industry, such as the joining of austenitic, manganese, work-hardenable steels, as well as armour plate and heat-resistant steels.

Welding current

DC (+)

Classifications

EN 12072 G 18 8 Mn
Werkstoffnummer ~1.4370

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni
<0.2	<1.2	6.5	18.5	8.5

Typical properties of all weld metal

Yield stress, Mpa 450
Tensile strength, MPa 640
Elongation, % 41

Charpy V

Test temps, °C Impact values, J
+20 130

Approvals

DB 43.039.10
UDT DIN 8556
Ü 43.039/1
VdTÜV 05420

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	4.0-17	55-160	15-24	1.0-4.1
0.9	3.5-18	65-220	15-28	1.1-5.4
1.0	4.0-16	80-240	15-28	1.5-6.0
1.2	3.0-14	100-300	15-29	1.6-7.5
1.6	5.5-9	230-375	23-31	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1695089820	0.8	15	750
1695099820	0.9	15	750
1695109820	1.0	15	750
1695129820	1.2	15	750
1695169820	1.6	15	750

Description

A ferritic, stainless, solid wire with a content of 18% Cr and stabilised with 0.5% Ti for welding similar and matching steels. The alloy is also used for cladding on unalloyed and low-alloyed steels. OK Autrod 430Ti is also widely used in the automotive industry for the welding of manifolds, catalytic converters and exhaust pipes.

Welding current

DC (+)

Classifications

EN 12072 G Z 17 Ti
Werkstoffnummer 1.4502

Typical all weld metal composition, %

C	Si	Mn	Cr	Ti
0.1	0.9	0.4	18	0.3

Typical properties of all weld metal

Yield stress, Mpa 390
Tensile strength, MPa 600
Elongation, % 24

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	4.0-17.0	55-160	12-24	1.0-4.1
0.9	3.5-18.0	65-220	15-28	1.1-5.4
1.0	4.0-16.0	80-240	15-28	1.5-6.0
1.2	3.0-14.0	100-300	15-19	1.6-7.5
1.6	5.5-9.0	230-365	23-31	5.2-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1681109820	1.0	15	750
1681129820	1.2	15	750
1681169820	1.6	15	1500

Description

A continuous, solid, corrosion-resistant, duplex wire for welding austenitic-ferritic stainless alloys of the 22% Cr, 5% Ni, 3% Mo types. OK Autrod 2209 has high general corrosion resistance. In media containing chloride and hydrogen sulphide, the alloy has a high resistance to intergranular corrosion, pitting and especially to stress corrosion. The alloy is used in a variety of applications across all industrial segments.

Welding current

DC (+)

Classifications

SFA/AWS A5.9 ER2209
EN 12072 G 22 9 3 NL

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	Mo	N
0.01	0.6	1.6	23	9	3	0.1

Typical properties of all weld metal

Yield stress, Mpa 600
Tensile strength, MPa 765
Elongation, % 28

Charpy V

Test temps, °C	Impact values, J
+20	100
-20	85
-60	60

Approvals

DNV For duplex stainless steels
VdTUV 05387(IT)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	3.4-11.0	50-140	16-22	0.8-2.6
1.0	2.9-8.4	80-190	16-24	1.0-3.2
1.2	4.9-8.5	180-280	20-28	2.6-4.6
1.6	3.2-5.5	230-350	24-28	3.0-5.2

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1686089820	0.8	15	1500
1686109820	1.0	15	1500
1686129820	1.2	15	1500
1686169820	1.6	15	1500

Description

A continuous, solid, corrosion-resistant, "Super Duplex" wire for welding austenitic-ferritic, stainless alloys of the 25% Cr, 7% Ni, 4% Mo, low C types. OK Autrod 2509 has high intergranular-corrosion, pitting and stress-corrosion resistance. The alloy is widely used in applications in which corrosion resistance is of the utmost importance. The pulp & paper industry, offshore and gas industry are areas of interest.

Welding current

DC (+)

Classifications

EN 12072 G 25 9 4 NL

Typical all weld metal composition, %

C	Si	Mn	Cr	
0.01	0.4	0.4	25.0	
Ni	Mo	W	Cu	N
9.8	4.0	<1.0	<0.3	0.25

Typical properties of all weld metal

Yield stress, Mpa	670
Tensile strength, MPa	850
Elongation, %	30

Charpy V

Test temps, °C	Impact values, J
+20	150
-40	115

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	3.4-11.0	50-140	16-22	0.8-2.6
1.0	2.9-8.4	80-190	16-24	1.0-3.2
1.2	4.9-8.5	180-280	20-28	2.6-4.6
1.6	3.2-5.5	230-350	24-28	3.0-5.2

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1688109820	1.0	15	750
1688129820	1.2	15	750

Description

Alloy 1100 is highly resistant to chemical attack and weathering. It is a relatively soft alloy that is very formable and is used extensively in thin gauge and foil products. It has good welding characteristics and is also used as filler for welding purposes. A desirable characteristic of the alloy is the bright finishes obtained by anodising. Non-heat treatable.

Welding current

DC (+)

Classifications

SFA/AWS A5.10-92 ER 1100
EN ISO 18273 SAI 1100 Al99.0Cu

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Zn	Al
0.475	0.475	0.075	0.025	0.05	99

Typical properties of all weld metal

Yield stress, Mpa	30
Tensile strength, MPa	75
Elongation, %	35

Charpy V

Test temps, °C	Impact values, J
+20	100
-20	85
-60	60

Approvals

CWB AWS A5.10

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate kg weld metal/hour
0.8	6.6-13.0	90-175	22-24	0.6-0.9
0.9	6.4-12.0	90-170	23-25	0.9-1.5
1.2	5.5-11.0	110-220	25-27	1.0-1.7
1.6	4.8-7.1	200-300	26-30	1.4-2.5

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
180208245A	0.8	6.35	438.15
180209243A	0.9	7.26	500.94
180210243A	1.0	7.26	500.94
180212243A	1.2	7.26	500.94
180216243A	1.6	7.26	500.94
180220243A	2.0	7.26	500.94
180224243A	2.4	7.26	500.94

Description

Alloy 4043 is one of the oldest and most widely used welding and brazing alloys. 4043 can be classified as a general-purpose type filler alloy. The silicon additions result in improved fluidity (wetting action) to make the alloy a preferred choice by welders. The alloy is less sensitive to weld cracking and produces brighter, almost smut free welds. Non-heat treatable.

Welding current

DC (+)

Classifications

SFA/AWS A5.10-92 ER 4043
EN ISO i8273 SAI 4043 (AlSi5)

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Mg
5.25	0.4	0.15	0.025	0.025
Zn	Ti	Other	Al	
0.05	0.1	0.075	Bal	

Typical properties of all weld metal

Yield stress, Mpa 55
Tensile strength, MPa 165
Elongation, % 18

Approvals

U 61.039
CWB AWS A5.10
DB 61.039.05

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	6.6-13.0	90-175	22-24	0.6-0.9
0.9	6.4-12.0	90-170	23-25	0.9-1.5
1.2	5.5-11.0	110-220	25-27	1.0-2.1
1.6	4.8-7.1	200-300	26-30	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
180408245A	0.8	6.4	501
180409243A	0.9	7.3	501
180410243A	1.0	7.3	501
180412243A	1.2	7.3	501
180416243A	1.6	7.3	501
180420243A	2.0	7.3	501
180424243A	2.4	7.3	501

Description

Alloy 4047 was originally developed as a brazing alloy to take advantage of its low melting point and narrow freezing range. In addition, it has a higher silicon content than 4043, which provides increased fluidity and reduced shrinkage. The alloy produces bright and almost smut free welds. Hot cracking is significantly reduced when 4047 is used as a filler alloy. The alloy may be used in applications of sustained elevated temperatures. Non-heat treatable.

Welding current

DC (+)

Classifications

SFA/AWS A5.10-92 ER 4047
EN ISO i8273 SAI 4047 AlSi12

Typical all weld metal composition, %

Si	Fe	Cu	Mn
12	0.4	0.15	0.075
Mg	Zn	Other	Al
0.05	0.10	0.075	Bal

Typical properties of all weld metal

Yield stress, Mpa	80
Tensile strength, MPa	170
Elongation, %	12

Approvals

CWB AWS A5.10

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	6.6-13.0	90-175	22-24	0.6-0.9
0.9	6.4-12.0	90-170	23-25	0.9-1.5
1.2	5.5-11.0	110-220	25-27	1.0-2.1
1.6	4.8-7.1	200-300	26-30	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
180508245A	0.8	6.4	501
180509243A	0.9	7.3	501
180510243A	1.0	7.3	501
180512243A	1.2	7.3	501
180516243A	1.6	7.3	501
180520243A	2.0	7.3	501
180524243A	2.4	7.3	501

Description

Continuous solid wire suitable for welding aluminium alloys with up to 5% Mg and alloys where a higher tensile strength is required. The alloying element Zr produces improves resistance to hot cracking during solidification.

Welding current

DC (+)

Classifications

EN ISO 18273 S Al 5087
(AlMg4.5MnZr)

Typical all weld metal composition, %

Si	Mn	Cr	Cu	
<0.25	0.9	0.15	<0.05	
Ti	Zr	Zn	Fe	Mg
<0.15	0.15	<0.25	<0.40	4.9

Typical properties of all weld metal

Yield stress, Mpa 130
Tensile strength, MPa 280
Elongation, % 30

Approvals

DB 61.039.07
Ü 61.039
VdTÜV

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
1.0	7-14	90-210	15-26	0.9-1.8
1.2	6-13	140-260	20-29	1.1-2.4
1.6	4.5-7.5	190-350	25-30	1.5-2.5

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
181708245A	0.8	6.35	438.15
181709243A	0.9	7.26	500.94
181710243A	1.0	7.26	500.94
181712243A	1.2	7.26	500.94
181716243A	1.6	7.26	500.94
181720243A	2.0	7.26	500.94
181724243A	2.4	7.26	500.94

Description

Alloy 5183 was developed to provide the highest strengths possible in the as-welded condition of alloy AA5083 and other similar high magnesium alloys. The more common filler alloy 5356, will typically fail to meet the as-welded tensile strength specification requirements of alloy AA5083. The alloy is typically used in marine and structural applications where high strengths, high fracture toughness for impact resistance and exposure to corrosive elements are important. The alloy is not recommended for elevated temperature applications due to its susceptibility to stress corrosion cracking. Non-heat treatable.

Welding current

DC (+)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	8.9-20.0	90-140	21-23	0.6-0.9
0.9	8.9-16.0	100-170	21-23	0.9-1.5
1.2	3.8-10.2	110-220	22-25	1.0-2.1
1.6	5.1-8.1	200-300	23-28	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
181608245A	0.8	6.35	438.15
181609243A	0.9	7.26	500.94
181610243A	1.0	7.26	500.94
181612243A	1.2	7.26	500.94
181616243A	1.6	7.26	500.94
181620243A	2.0	7.26	500.94
181624243A	2.4	7.26	500.94

Classifications

SFA/AWS A5.10-92 ER 5183
EN ISO 18273 SAI 5183 (AlMg4.5Mn0.7(A))

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Mg
0.2	0.2	0.05	0.75	4.75
Cr	Zn	Ti	Other	Al
0.15	0.125	0.75	0.075	Bal

Typical properties of all weld metal

Yield stress, Mpa 140
Tensile strength, MPa 290
Elongation, % 25

Approvals

ABS ER 5183
BV WC
CWB AWS A5.10
DB 61.039.03
DNV 5183 (WC)
VdTüV 04666
LR WC/1-1
ü 61.039

Description

Alloy 5356 is the most widely used welding alloy and can be classified as a general purpose type filler alloy. Alloy 5356 is typically chosen because of its relatively high shear strength. The 5XXX alloy base material, welded with 5356, with a weld pool chemistry greater than 3% Mg and service temperatures in excess of 65°C are susceptible to stress corrosion cracking. Non-heat treatable.

Welding current

DC (+)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	8.9-20.0	90-140	21-23	0.6-0.9
0.9	8.9-16.0	100-170	21-23	0.9-1.5
1.2	3.8-10.2	110-220	22-25	1.0-2.1
1.6	5.1-8.1	200-300	23-28	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
181508245A	0.8	6.35	438.15
181509243A	0.9	7.26	500.94
181510243A	1.0	7.26	500.94
181512243A	1.2	7.26	500.94
181516243A	1.6	7.26	500.94
181520243A	2.0	7.26	500.94
181524243A	2.4	7.26	500.94

Classifications

SFA/AWS A5.10-92 ER 5356
EN ISO 18273 SAI 5356 (AlMg5Cr(A))

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Mg
0.125	0.2	0.05	0.125	5.0
Cr	Zn	Ti	Other	Al
0.125	0.05	0.13	0.075	Bal

Typical properties of all weld metal

Yield stress, Mpa 120
Tensile strength, MPa 265
Elongation, % 26

Approvals

DB 61,039.07
Ü 61,039
VdTüV 04664
CWB AWS A5.10
ABS ER 5356
BV WB
DNV 5356 (WB)
GL S AMg5
LR WB/1-1

Description

Alloy 5554 was developed as a filler alloy, primarily for alloy 5454 that is widely used in the manufacture of chemical storage tanks, automotive wheels, and in particular, those applications that may be subjected to temperatures in excess of 65°C. This combination of alloys does not become sensitive to stress corrosion cracking at elevated temperatures. Non-heat treatable.

Welding current

DC (+)

Classifications

SFA/AWS A5.10-92 ER 5554
EN ISO 18273 S Al 5554 (AlMg3Mn(A))

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Mg
0.125	0.2	0.05	0.75	2.7
Cr	Zn	Ti	Other	Al
0.125	0.125	0.125	0.075	Bal

Typical properties of all weld metal

Yield stress, Mpa 110
Tensile strength, MPa 230
Elongation, % 17

Approvals

CWB AWS A5.10

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	8.9-20.0	90-140	21-23	0.6-0.9
0.9	8.9-16.0	100-170	21-23	0.9-1.5
1.2	3.8-10.2	100-220	22-25	1.0-2.1
1.6	5.1-8.1	200-300	23-28	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
181208245A	0.8	6.35	438.15
181209243A	0.9	7.26	500.94
181210243A	1.0	7.26	500.94
181212243A	1.2	7.26	500.94
181216243A	1.6	7.26	500.94
181220243A	2.0	7.26	500.94
181224243A	2.4	7.26	500.94

Description

Alloy 5556 develop the highest as-welded strengths in fillet welds, nearly double that of 4043.

The 5XXX series of alloys offer an excellent combination of corrosion resistance, strength, toughness, workability, and weldability.

As a result, they are used in a wide variety of applications. However, this series of alloy is susceptible to stress corrosion cracking when the weld pool chemistry is greater than 3% Mg and when there is exposure to prolonged temperatures in excess of 65°C. Special alloys and temperatures are often required to overcome this problem. This is non-heat treatable.

Welding current

DC (+)

Classifications

SFA/AWS A5.10 ER5556
EN ISO 18273 S Al 5556A (AlMg5Mn)

Typical all weld metal composition, %

Si	Fe	Cu	Mn	Mg
0.125	0.2	0.05	0.8	5.25
Cr	Zn	Ti	Other	Al
0.125	0.1	0.125	0.075	Bal

Typical properties of all weld metal

Yield stress, Mpa 145
Tensile strength, MPa 295
Elongation, % 25

Approvals

CWB AWS A5.10 (item no. ending with A)
VdTÜV 05794

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	8.9-20.0	90-140	21-23	0.6-0.9
0.9	8.9-16.0	100-170	21-23	0.9-1.5
1.2	3.8-10.2	100-220	22-25	1.0-2.1
1.6	5.1-8.1	200-300	23-28	1.5-2.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
182008245A	0.8	6.35	438.15
182009243A	0.9	7.26	500.94
182010243A	1.0	7.26	500.94
182012243A	1.2	7.26	500.94
182016243A	1.6	7.26	500.94
182020243A	2.0	7.26	500.94
182024243A	2.4	7.26	500.94

Description

A continuous, solid, Ni-Cr-Mo electrode for welding high-alloyed materials of the 20Cr-25Ni type with 4-6% Mo and Ni-based alloys of a similar type. It can also be welded in combination with carbon steels. The weld metal has very good corrosion resistance over a wide range of applications in oxidising and reducing media.

Welding current

DC (+)

Classifications

SFA/AWS A5.14	ERNiCrMo-13
EN ISO 18274	S Ni 6059 (NiCr23Mo16)

Typical all weld metal composition, %

C	Si	Mn	Cr
0.002	0.03	0.15	23.0
Ni	Mo	Al	
>56.0	15.4	0.15	

Typical properties of all weld metal

Yield stress, Mpa	550
Tensile strength, MPa	800
Elongation, %	45

Charpy V

Test temps, °C	Impact values, J
-110	120

Approvals

VdTÜV 07769 (MV)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	5-18	70-190	20-27	1.3-4.5
1.0	6-13	100-200	21-27	2.3-5.1
1.2	6-10	160-280	24-30	3.4-5.6
1.6	4-8	200-350	25-32	4.0-8.0

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1981089820	0.8	15	750
1981109820	1.0	15	750
1981129820	1.2	15	750
1981169820	1.6	15	750

Description

A continuous, solid, corrosion and heat-resistant, Ni-Cr electrode for welding high-alloyed heat-resistant and corrosion-resistant materials, 9% Ni steels and similar steels with high notch toughness at low temperatures. It is also suitable for joining dissimilar metals of the types mentioned above. The weld metal has very good mechanical properties at high and low temperatures. Good resistance to pitting and stress corrosion.

Welding current

DC (+)

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	5-18	70-190	20-27	1.3-4.5
1.0	6-13	100-200	21-27	2.3-5.1
1.2	6-10	160-280	24-30	3.4-5.6
1.6	4-8	200-350	25-32	4.0-8.0

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1982089820	0.8	15	1500
1982109820	1.0	15	1500
1982129820	1.2	15	1500
1982169820	1.6	15	1500

Classifications

SFA/AWS A5.14	ERNiCrMo-3
EN ISO 18274	S Ni 6625 (NiCr22Mo9Nb)

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni	
<0.1	<0.5	<0.5	21.5	>60.0	
Mo	Cu	Al	Ti	Fe	Nb+Ta
9.0	<0.5	<0.4	<0.4	<2.0	3.5

Typical properties of all weld metal

Yield stress, Mpa	500
Tensile strength, MPa	780
Elongation, %	45

Charpy V

Test temps, °C	Impact values, J
+20	130
-105	120
-196	110

Approvals

UDT	DIN 1736
VdTÜV	10003

Description

A nickel-based, corrosion and heat-resistant, 20% Cr, 3% Mo, 2.5% Nb electrode for the GMAW of high-alloyed steel, heat-resistant steel, corrosion-resistant steel, 9% Ni and similar steels with high notch toughness at low temperatures. It is also suitable for joining dissimilar metals of the type mentioned above. OK Autrod 19.85 is usually welded with pure Ar as the shielding gas.

Welding current

DC (+)

Classifications

SFA/AWS A5.14	ERNiCr-3
EN ISO 18274	S Ni 6082 (NiCr20Mn3Nb)

Typical all weld metal composition, %

C	Si	Mn	Cr	Ni
<0.1	<0.5	3.0	20.0	>67.0
Cu	Ti	Fe	Nb+Ta	
<0.5	<0.7	<3.0	2.5	

Typical properties of all weld metal

Yield stress, Mpa	440
Tensile strength, MPa	670
Elongation, %	40

Charpy V

Test temps, °C	Impact values, J
+20	150
-196	100

Approvals

UDT	DIN 1736
VdTÜV	

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	5-18	70-190	20-27	1.3-4.5
1.0	6-13	100-200	21-27	2.3-5.1
1.2	6-10	160-280	24-30	3.4-5.6
1.6	4-8	200-350	25-32	4.0-8.0

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1985089820	0.8	15	1500
1985109820	1.0	15	1500
1985129820	1.2	15	1500
1985169820	1.6	15	1500

Description

A nickel-based electrode alloyed with 3% Ti for the GMAW of high-purity nickel (min. 99.6% Ni), ordinary wrought nickel and nickel with a reduced carbon content. OK Autrod 19.92 is usually welded with pure Ar as the shielding gas.

Welding current

DC (+)

Classifications

SFA/AWS A5.14	ERNi-1
EN ISO 18274	SNi 2061 (NiTi3)

Typical all weld metal composition, %

C	Si	Mn	Ti	Ni
0.02	0.3	0.4	3.0	Bal.

Typical properties of all weld metal

Yield stress, Mpa	300
Tensile strength, MPa	500
Elongation, %	27

Charpy V

Test temps, °C	Impact values, J
+20	190

Approvals

UDT	Din 1736
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Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	5-18	70-190	20-27	1.3-4.8
1.0	6-13	100-200	21-27	2.5-5.5
1.2	6-10	160-280	24-30	3.6-6.0
1.6	4-8	200-350	25-32	4.3-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1992109820	1.0	15	1500
1992129820	1.2	15	1500

OK Autrod 19.93

GMAW
ERNiCu-7

Description

A nickel-based electrode alloyed with about 30% Cu, 2% Ti and 1% Fe for the GMAW of base materials of the same type. It can also be used for joining these alloys to steel. OK Autrod 19.93 is usually welded with pure Ar as the shielding gas.

Welding current

DC (+)

Classifications

SFA/AWS A5.14	ERNiCu-7
DIN 1736	SG NiCu30MnTi
Werkstoff Nr.	2.4377

Typical all weld metal composition, %

C	Si	Mn	Cu	Ti	Fe	Ni
0.04	0.10	3.5	30.0	2.0	1.0	Bal.

Typical properties of all weld metal

Yield stress, Mpa	300
Tensile strength, MPa	530
Elongation, %	45

Charpy V

Test temps, °C	Impact values, J
+20	130
-20	150

Approvals

UDT

Welding Parameters

Diameter mm	Wire feed m/min	Welding Current A	Arc Voltage	Deposition rate (kg weld metal/hour arc time)
0.8	5-18	70-190	20-27	1.3-4.8
1.0	6-13	100-200	21-27	2.5-5.5
1.2	6-10	160-280	24-30	3.6-6.0
1.6	4-8	200-350	25-32	4.3-8.6

Packing/Ordering Information

Part Number	Dia mm	Carton Weight (kg)	Pallet Weight (kg)
1993109820	1.0	15	1500
1993129820	1.2	15	1500