OK Autrod 16.95

Features Specifications
OK Autrod 16.95

GMAW

A continuous solid, corrosion resisting chromium-nickel-manganese wire for welding of austenitic stainless alloys of 18% Cr, 8% Ni, 7% Mn types. OK Autrod 16.95 has a general corrosion resistance similar to that of the corresponding parent metal. The higher silicon content improves the welding properties, such as wetting. The product is a modified variant of ER307, basically with a higher Mn content to make the weld less sensitive to hot cracking. 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 armourplate and heat resistant steels.
Welding current
DC(+)

Classifications	Approvals		Typical all weld metal composition, %		Typical mech. properties all weld metal
EN ISO 14343 G 18 8 Mn Werkstoffnummer ~1.4370	DB	43.039.10	C	<0,2	Yield stress, MPa 450 Tensile strength, MPa 640 Elongation, % 41 Elongation, % 41
	VdTÜV	05420	Si	<1,2	
	CE	EN 13479	Mn	6,5	
			Cr	18,5	
			Ni	8,5	

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

Diameter, mm	0,8	0,9	1,0	1,2	1,6
Arc voltage, V	15-24	15-28	15-28	15-29	23-31
Welding current, A	55-160	65-220	80-240	100-300	230-375
Wire feed, m/min	4,0-17	3,5-18	4,0-16	3,0-14	5,5-9
Deposition rate kg weld metal/hour	1,0-4,1	1,1-5,4	1,5-6,0	1,6-7,5	5,2-8,6

OK Autrod 2209

Features Specifications
OK Autrod 2209

GMAW

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 intergranularcorrosion, pitting and especially to stress corrosion. The alloy is used in a variety of applications across all industrial segments.
Welding current
DC(+)

Classifications	Approvals		Typical all weld metal composition, %		Typical mech. properties all weld metal
EN ISO 14343 G 22 9 3 NL SFA/AWS A5.9 ER2209	DNV	For duplex stainless steels	C	<0,03	Yield stress, MPa 600 Tensile strength, MPa 765 Elongation, % 28 Elongation, % 28
	GL	4462S	Si	0,5	
	VdTÜV	05387 (TL)	Mn	1,7	
	VdTÜV	06281 (FP)	Cr	22,5	
			Ni	8,5	
			Mo	3,3	
			Cu	<0,3	

Charpy V

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

Diameter, mm	0,8	1,0	1,2	1,6
Arc voltage, V	16-22	16-24	20-28	24-28
Welding current, A	50-140	80-190	180-280	230-350
Wire feed, m/min	3,4-11,0	2,9-8,4	4,9-8,5	3,2-5,5
Deposition rate kg weld metal/hour	0,8-2,6	1,0-3,2	2,6-4,6	3,0-5,2

OK Autrod 2509

Features Specifications
OK Autrod 2509

GMAW

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	Approvals	Typical all weld metal composition, %	Typical mech. properties all weld metal
EN ISO 14343 G 25 9 4 NL SFA/AWS A5.9 ER2594		C <0,02 Si 0,4 Mn 0,4 Cr 25,0 Ni 9,8 Mo 4,0 W <1,0 Cu <0,3	Yield stress, MPa 670 Tensile strength, MPa 850 Elongation, % 30 Elongation, % 30 Charpy V Test temps, °C / Impact values, J +20 / 150 -40 / 115

Diameter, mm	0,8	1,0	1,2	1,6
Arc voltage, V	16-22	16-24	20-28	24-28
Welding current, A	50-140	80-190	180-280	230-350
Wire feed, m/min	3,4-11,0	2,9-8,4	4,9-8,5	3,2-5,5
Deposition rate kg weld metal/hour	0,8-2,6	1,0-3,2	2,6-4,6	3,0-5,2

OK Autrod 308LSi

Features Specifications
OK Autrod 308LSi

GMAW

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 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(+)

Classifications	Approvals		Typical all weld metal composition, %		Typical mech. properties all weld metal
EN ISO 14343 G 19 9 LSi SFA/AWS A5.9 ER308LSi Werkstoffnummer ~1.4316	DB	43.039.01	C	<0,03	Yield stress, MPa 370 Tensile strength, MPa 620 Elongation, % 36 Elongation, % 36
	DNV	308L MS (-60ºC)	Si	0,8	
	Sepros	UNA 485178	Mn	1,8	
	VdTÜV	04267	Cr	20,3	
			Ni	10,0	
			Mo	<0,3	
			Cu	<0,3	

Charpy V

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

Diameter, mm	0,6	0,8	0,9	1,0	1,2	1,6
Arc voltage, V	-	15-24	15-28	15-28	15-29	23-29
Welding current, A	-	55-160	65-220	80-240	100-300	230-375
Wire feed, m/min	-	4,0-17,0	3,5-18,0	4,0-16,0	3,0-14,0	5,5-9,0
Deposition rate kg weld metal/hour	-	1,0-4,2	1,1-5,4	1,5-6,0	1,6-7,5	5,2-8,6

OK Autrod 309LSi

Features Specifications
OK Autrod 309LSi

GMAW

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 weldingdissimilar 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(+)

Classifications	Approvals	Typical all weld metal composition, %	Typical mech. properties all weld metal
EN ISO 14343 G 23 12 LSi SFA/AWS A5.9 ER309LSi Werkstoffnummer ~1.4332	DB 43.039.16 VdTÜV 10020	C <0,03 Si 0,8 Mn 1,8 Cr 24,0 Ni 13,0 Mo <0,3 Cu <0,3	Yield stress, MPa 440 Tensile strength, MPa 600 Elongation, % 41 Elongation, % 41 Charpy V Test temps, °C / Impact values, J +20 / 160 -60 / 130 -110 / 90

Diameter, mm	0,8	0,9	1,0	1,2	1,6
Arc voltage, V	15-24	15-28	15-28	15-29	23-31
Welding current, A	55-160	65-220	80-240	100-300	230-375
Wire feed, m/min	4,0-17,0	3,5-18,0	4,0-16,0	3,0-14,0	5,5-9,0
Deposition rate kg weld metal/hour	1,0-4,0	1,1-5,4	1,5-6,0	1,6-7,5	5,2-8,6

OK Autrod 309MoL

Features Specifications
OK Autrod 309MoL

GMAW

A continuous, solid, corrosion-resistant wire of the "309LMo" 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	Approvals		Typical all weld metal composition, %		Typical mech. properties all weld metal
EN 12072 G 23 12 2 L	RINA	Restricted availability	C	<0,02	Yield stress, MPa 400 Tensile strength, MPa 600 Elongation, % 31 Elongation, % 31
	UDT	DIN 8556	Si	0,5	
	VdTÜV	07352	Cr	22	
			Ni	15,0	
			Mo	2,8	
			Wire composition		

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

Diameter, mm	0,8	1,0	1,2	1,6
Arc voltage, V	16-22	16-24	20-28	24-28
Welding current, A	50-140	80-190	180-280	230-350
Wire feed, m/min	3,4-11,0	2,9-8,4	4,9-8,5	3,2-5,5
Deposition rate kg weld metal/hour	0,8-2,6	1,0-3,2	2,7-4,6	3,0-5,2

OK Autrod 316LSi

Features Specifications
OK Autrod 316LSi

GMAW

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(+)

Classifications	Approvals		Typical all weld metal composition, %		Typical mech. properties all weld metal	
EN ISO 14343 G 19 12 3 LSi SFA/AWS A5.9 ER316LSi Werkstoffnummer ~1.4430	DB	43.039.05	C	0,2	Yield stress, MPa 440 Tensile strength, MPa 620 Elongation, % 37 Elongation, % 37	
	DNV	316L MS (-120ºC)	C	0,030		
	VdTÜV	04268	Si	0,8		
	CE	EN 13479	Si	0,825		
	CWB	AWS A5.9 (item no ending with A)	Mn	1,8		
			Mn	1,9		
			Cr	18,5		
			P	0,030		
			Ni	12		
			S	0,012		
			Cr	19		
			Mo	2,7		
			Cu	0,1		
			Ni	12		
			Mo	2,75		
			P	0,015		
			Cu	0,3		
			S	0,015		
			N	0,08		
			Wire composition			

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

Diameter, mm	**0,6**	**0,8**	**0,9**	**1,0**	**1,2**	**1,6**
Arc voltage, V	-	12-24	15-28	15-28	15-29	23-31
Welding current, A	-	55-160	65-220	80-240	100-300	230-375
Wire feed, m/min	-	4,0-17,0	3,5-18,0	4,0-16,0	3,0-14,0	5,5-9,0
Deposition rate kg weld metal/hour	-	1,0-4,1	1,1-5,4	1,5-6,0	1,6-7,5	5,2-8,6

OK Autrod 410NiMo

Features Specifications
OK Autrod 410NiMo

GMAW

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

Classifications	Approvals	Typical all weld metal composition, %		Typical mech. properties all weld metal
EN ISO 14343 G 13 4		C	<0,05	Yield stress, MPa 600 Tensile strength, MPa 840 Elongation, % 17 Elongation, % 17
		Si	0,4	
		Mn	0,7	
		Cr	12,3	
		Ni	4,5	
		Mo	0,7	
		Cu	<0,3	

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

Diameter, mm	0,8	0,9	1,0	1,2	1,6
Arc voltage, V	16-22	-	16-24	20-28	24-28
Welding current, A	50-140	-	80-190	180-280	230-350
Wire feed, m/min	3,4-11,0	3,0-10	2,9-8,4	4,9-8,5	3,2-5,5
Deposition rate kg weld metal/hour	0,8-2,6	0,9-3,0	1,1-3,1	2,6-4,6	3,0-5,2

OK Autrod 430LNb

Features Specifications
OK Autrod 430LNb

GMAW

A ferritic, stainless, solid wire with a low carbon content, 18% Cr and stabilised with Nb, for weld-ing 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	Approvals	Typical all weld metal composition, %		Typical mech. properties all weld metal
EN ISO 14343 G 18 L Nb Werkstoffnummer ~1.4511		C	<0,03	Yield stress, MPa 275 Tensile strength, MPa 420 Elongation, % 26 Elongation, % 26
		Si	0,5	
		Mn	0,5	
		Cr	18,2	

Diameter, mm	0,9	1,0	1,2
Arc voltage, V	-	18-28	-
Welding current, A	-	100-260	-
Wire feed, m/min	3,5-18,0	4,0-16,0	3,0-14,0
Deposition rate kg weld metal/hour	1,1-5,4	1,5-6,0	1,6-7,5