

Tailor-Made Protectivity™

STRIPS AND FLUXES FOR ELECTROSLAG AND SUBMERGED ARC WELDING



INHALT

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UTP

High-quality industrial-use welding filler metals for maintenance, repair, and overlay welding. By adding the UTP and Soudokay brands to the voestalpine Böhler Welding brand network, the UTP can look back on a proud history spanning 60 years as an innovative supplier of welding technology products. UTP is the global leader in the repair, maintenance and overlay welding segment.

With roots in Bad Krozingen (Germany), Senefte (Belgium) and Cittadella (Italy), UTP offers the world's most unique product portfolio for filler metals from its own production facilities. The Soudokay brand was established back in 1938, while the UTP brand began operations in 1953. Each of these brands therefore respectively looks back on a long history of international dimension.

By merging into the UTP brand, the collective know-how of both brands – gathered over decades in the fields of metallurgy, service and applications engineering – is now united under one umbrella. As a result, a truly unique portfolio of solutions for welding applications has been created in the fields of repair, maintenance and overlay welding.



CONNECT WITH THE EXPERTS IN PRODUCTIVE SOLUTIONS

Leveraging decades of experience with cutting-edge products.

For demanding industries, RECORD® and SOUDOTAPE are the benchmark for cladding sophisticated materials, imparting essential surface properties like corrosion resistance in pressure vessels for the petrochemical, oil & gas, and power generation sectors, as well as wear resistance for rollers in raw material processing and the steel industry.

UTP specializes in stainless steel strip electrodes designed to cover all applications with single-layer weld overlays, ensuring the highest productivity.

SOUDOTAPE strip electrodes cater to all corrosion resistance and hard-facing requirements. While competitors typically offer only NiCr-3 and NiCrMo-3 strip electrodes for nickel alloys, UTP provides the most extensive range, including all types of Nickel-Cr-Fe and Nickel-Cr-Mo alloy weld overlays such as alloy 59 and Hastelloy C276.

Width	Thickness	Weight	Inner Diameter	Outer Diameter	Number of Coils per pallets 1100x1100	
30 mm	0.5 mm	25-30 kg	300 mm	550 mm	32	
60 mm	0.5 mm	50-60 kg			16	
90 mm	0.5 mm	75-90 kg			12	

RECORD® agglomerated fluxes give exceptional weld overlay appearance with guaranteed of high productivity.

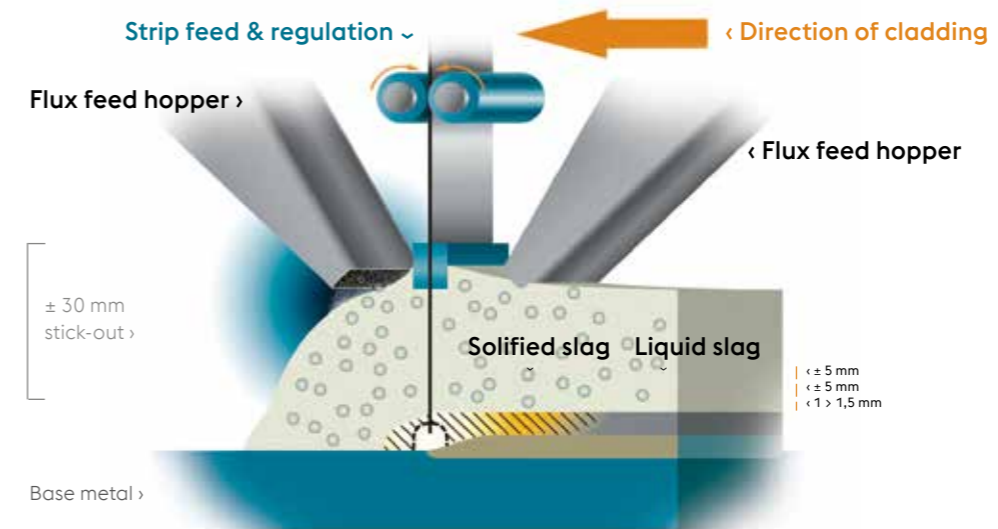
RECORD fluxes for corrosion protection applications
25kg (55lbs) metal bucket with hermetic lug-cover:



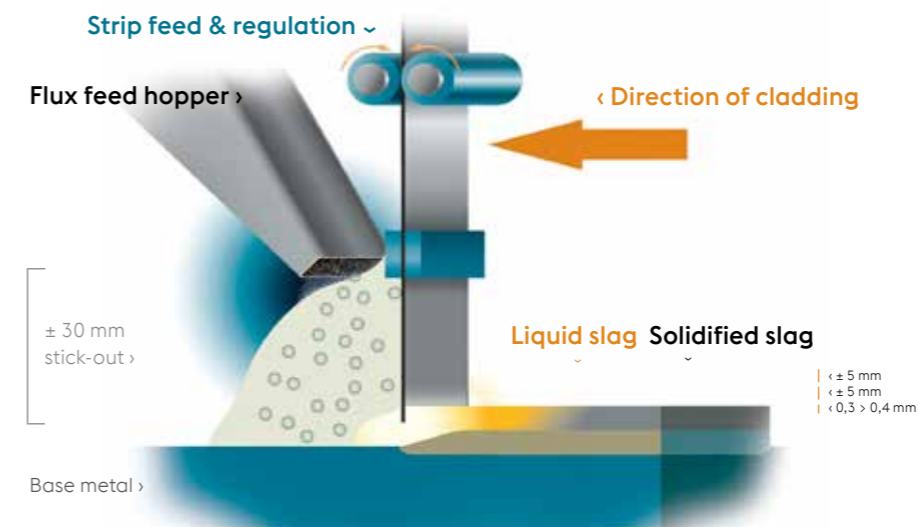
RECORD fluxes for wear protection applications
25kg (55lbs) paper bag with plastic inside liner:



For weld overlay experts, among all processes, submerged arc and, moreover, electroslag strip cladding offer the highest deposition rate with trouble free operation and the lowest dilution:



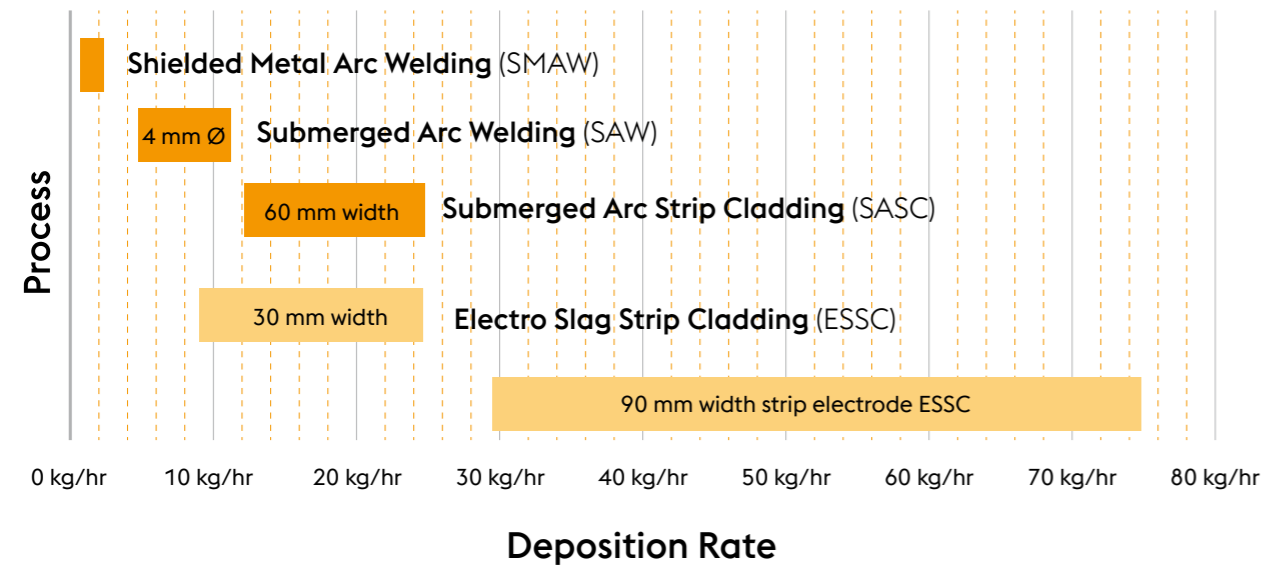
- SASC choice main benefits**
- » Arc flashes are virtually eliminated by flux blanket
 - » No spatter and fume make attractive from healthy & environmental standpoints
 - » Fully automatic operation requires minimal welder training
 - » High deposition rate



- ESSC Main benefits, in addition to SASC, are:**
- » very low penetration and dilution down to 7% typical.
 - » Single layer weld overlay with dilution compensated strip electrodes or/and RECORD single layer fluxes
 - » Highest deposition rate up to 1.5m² per hour with 90mm wide strip electrode
 - » High productivity with cladding speed up to 450mm per minute
 - » low flux consumption, fused flux to melted strip electrode ratio down to 0.5

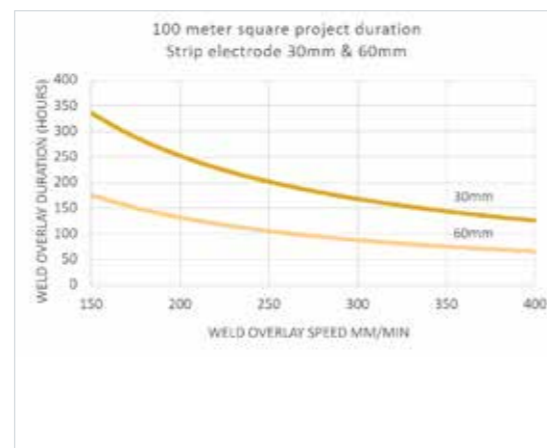
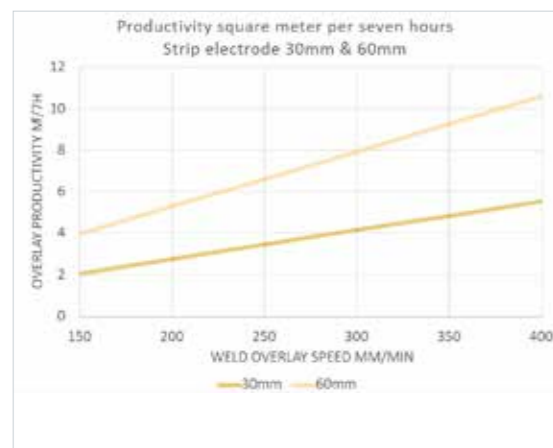
ElectroSlag Strip Cladding (ESSC) is a fusion process using heat generated into a layer of electroconductive slag producing coalescence which melts the strip electrode and the surface of the workpiece. The electroconductive slag is maintained in a molten condition by Joule's effect produced by ohmic resistance to electric current driven by the strip electrode. During the process, granular flux is added continuously to maintain an adequate slag covering over the molten weld-pool. In operation with a constant voltage power source, the strip electrode melts off while dipping only partly through the molten slag bath. ISO 4063 – 721 is a reference number for Electroslag welding with strip electrode.

STRIP CLADDING PROCESS PRODUCTIVITY



Square meter covered per seven hours of continuous overlay as a function of the weld overlay speed with 60mm and 30mm width strip electrode.

EXECUTION TIME to cover 100m² as a function of the weld overlay speed with 60mm and 30mm width strip electrode.



Process name	SASC	ESSC
Process classification according ISO 4063	122 Submerged arc welding with strip electrode	721 Electroslag welding with strip electrode
Process characteristic	Fusion with electric arc and non conductive SAW flux	Heat resistance fusion with conductive flux (no electric arc)
Bead profil control with magnets	Not mandatory	Mandatory when current intensity is above 1000A
Typical Dilution	17% to 22%	7% to 20%
Deposition rate (60mm strip electrode)	12kg/hrs to 25kg/hrs	16kg/hrs to 50kg/hrs
Process		

ESSC Strip Cladding | Cladding Current Intensity

Strip Width	Average Current	Cable Section	Bead Width	Beach Thickness*
15 mm (0,59 inch)	350 A	1 x 95 mm ²	18-19 mm (0,7-0,74 inch)	3-5 mm (0,12-0,19 inch)
20 mm (0,78 inch)	400 A	1 x 95 mm ²	23-24 mm (0,9-0,94 inch)	3-5 mm (0,12-0,19 inch)
30 mm (1,18 inch)	600 A	2 x 95 mm ²	32-37 mm (1,26-1,45 inch)	3-5 mm (0,12-0,19 inch)
60 mm (2,36 inch)	1200 A	4 x 95 mm ²	63-68 mm (2,48-2,68 inch)	3-5 mm (0,12-0,19 inch)
90 mm (3,54 inch)	1800 A	5 x 95 mm ²	93-99 mm (3,66-3,90 inch)	3-5 mm (0,12-0,19 inch)
120 mm (4,72 inch)	1200 A	5 x 120 mm ²	124-128 mm (4,88-5,04 inch)	3-5 mm (0,12-0,19 inch)

PRODUCTS

STRIP ELECTRODE: SOUDOTAPE

Alloy Group	Product Name	ASME II C	EN ISO	W.-Nr.	UNS-Nr.	Chemical Analysis (Typical) (Weight -%)										
						C	Si	Mn	Cr	Ni	Mo	Nb	Cu	Fe	Other Elements	
Mild Steel	SOUDOTAPE A	SFA 5.17 (EL8)	14171-A (S1)	1.0347	-	0.03	0.01	0.20							Rem.	
Tool Steel	SOUDOTAPE 258	SFA 5.21 "EQFe-8"	14700 B Fe8 - C0,3Cr6Mo1W1 - 55	(1.2606)	(T20812)	0.35	0.4	1.1	6.6	0.3	1.6				Rem.	1.7W
Ferritic Stainless steel	SOUDOTAPE 410L	SFA 5.9 EQ410	14343-A B 13 L	1.4009	S41080	0.03	0.4	0.4	12.7						Rem.	
	SOUDOTAPE 430L	SFA 5.9 EQ430	14343-A B 17	1.4010	S43000	0.015	0.25	0.4	16.3						Rem.	
	SOUDOTAPE 430	SFA 5.9 EQ430	14343-A B 17	1.4016	S43000	0.04	0.3	0.4	16.2						Rem.	
Martensitic Stainless steel	SOUDOTAPE 420	SFA 5.9 EQ420	14343-A "B 13 H"	1.4028	S42000	0.3	0.3	0.4	13.7						Rem.	
Austenitic Stainless steel	SOUDOTAPE 308L	SFA 5.9 EQ308L	14343-A B 19 9 L	1.4316	S30883	0.01	0.3	1.7	20.2	10.4					Rem.	0.05N
	SOUDOTAPE 22.11L	SFA 5.9 (EQ309L)	14343-A B 22 11 L	1.4829	(S30980)	0.01	0.3	1.6	21.2	11.1					Rem.	0.04N
	SOUDOTAPE 309L	SFA 5.9 EQ309L	14343-A B 23 12 L	1.4332	S30983	0.01	0.4	1.7	23.7	13.4					Rem.	0.05N
	SOUDOTAPE 316L	SFA 5.9 EQ316L	14343-A B 19 12 3 L	1.4430	S31683	0.01	0.4	1.7	18.5	12.7	2.9				Rem.	0.04N
	SOUDOTAPE 21.13.3L	SFA 5.9 (EQ309LMO)	14343-A B 21 13 3 L	(1.4459)	-	0.01	0.3	1.7	20.6	13.9	2.9				Rem.	0.04N
	SOUDOTAPE 317L	SFA 5.9 EQ317L	14343-A B 19 13 4 L	(1.4438)	(S31703)	0.01	0.4	1.4	18.8	13.6	3.5				Rem.	0.05N
	SOUDOTAPE 347	SFA 5.9 EQ347	14343-A B 19 9 Nb	1.4551	S34780	0.015	0.4	1.7	19.6	10.5		0.5			Rem.	0.04N
	SOUDOTAPE 21.11LNb	SFA 5.9 (EQ347)	14343-A B 22 12 L Nb	(1.4551)	(S34780)	0.01	0.3	1.7	21.6	11.2		0.6			Rem.	0.04N
Duplex Stainless steel	SOUDOTAPE 24.12LNb	SFA 5.9 "EQ309LNb"	14343-A B 23 12 Nb	1.4556	(S30940)	0.01	0.4	2.1	23.8	12.4		0.75			Rem.	0.05N
	SOUDOTAPE 22.6.3L	SFA 5.9 (EQ2209)	14343-A B Z 22 6 3 N L	1.4462	S32205	0.02	0.4	1.5	22.3	5.7	3.2		0.2		Rem.	0.17N
	SOUDOTAPE 22.9.3L	SFA 5.9 EQ2209	14343-A B 22 9 3 N L	(1.4462)	(S32205)	0.01	0.5	1.6	22.9	8.6	3.0				Rem.	0.15N
Super Austenitic Stainless steel	SOUDOTAPE 25.8.4L	SFA 5.9 (EQ2594)	14343-A B Z 25 8 4 N L	1.4410	S32750	0.015	0.4	0.7	25.5	7.1	4.0			0.3	Rem.	0.27N
	SOUDOTAPE 20.25.5LCu	SFA 5.9 EQ385	14343-A B 20 25 5 Cu L	1.4519	N08904	0.01	0.3	1.4	20.0	24.3	4.4			1.5	Rem.	0.06N
	SOUDOTAPE 310MM	SFA 5.9 "EQ310LMO"	14343-A B 25 22 2 N L	(1.4466)	(S31050)	0.01	0.1	4.4	25.5	22.1	2.3				Rem.	0.15N
Nickel & Nickel Copper	SOUDOTAPE 254SMo	SFA 5.9 "EQ254SMo"	14343-A B Z 20 18 7 Cu N L	1.4547	S31254	0.01	0.4	0.5	20.0	17.9	6.1			0.6	Rem.	0.2N
	SOUDOTAPE NiTi	SFA 5.14 (EQNi-1)	18274 B (Ni 2061 (NiTi3))	2.4155	N02061	0.02	0.1	0.3		Rem.					0.1	4.0Ti 0.5Al
Nickel-Fe-Cr	SOUDOTAPE 825HS	SFA 5.14 EQNiFeCr-1	18274 B Ni 8065 (NiFe30Cr21Mo3)	2.4858	N08065	0.01	0.3	0.8	22.2	42.3	3.0			2.0	Rem.	0.7Ti
Nickel-Cr-Fe	SOUDOTAPE NiCr3	SFA 5.14 EQNiCr-3	18274 B Ni 6082 (NiCr20Mn3Nb)	2.4806	N06082	0.01	0.1	3.1	20.1	Rem.		2.7			0.3	0.3Ti
	SOUDOTAPE NiCrFe7	SFA 5.14 EQNiCrFe-7	18274 B Ni 6052 (NiCr30Fe9)	(2.4642)	N06052	0.02	0.2	0.7	29.6	Rem.					9.0	0.4Ti 0.6Al
Nickel-Cr-Mo	SOUDOTAPE 625	SFA 5.14 EQNiCrMo-3	18274 B Ni 6625 (NiCr22Mo9Nb)	2.4831	N06625	0.01	0.1	0.1	22.2	Rem.	8.7	3.6			0.3	
	SOUDOTAPE NiCrMo7	SFA 5.14 EQNiCrMo-7	18274 B Ni 6455 (NiCr16Mo16Ti)	2.4611	N06455	0.005	0.05	0.05	15.9	Rem.	15.5				1.2	0.1Ti
	SOUDOTAPE NiCrMo59	SFA 5.14 EQNiCrMo-13	18274 B Ni 6059 (NiCr23Mo16)	2.4607	N06059	0.005	0.02	0.2	22.7	Rem.	15.5				0.8	
	SOUDOTAPE NiCrMo4	SFA 5.14 EQNiCrMo-4	18274 B Ni 6276 (NiCr15Mo16Fe6W4)	2.4886	N10276	0.005	0.05	0.5	16.0	Rem.	15.5				5.7	3.3W
	SOUDOTAPE NiCrMo22	SFA 5.14 EQNiCrMo-10	18274 B Ni 6022 (NiCr21Mo13Fe4W3)	2.4635	N06022	0.005	0.03	0.2	21.4	Rem.	13.6				2.4	2.7W
Cobalt alloys	SOUDOTAPE SCoCr6	SFA 5.21 "EQCCoCr-A"	14700 C Co2		R30006	1.0	0.2	0.9	31.1	2.9					2.3	4.6W
	SOUDOTAPE SCoCr21	SFA 5.21 "EQCCoCr-E"	14700 C Co1		R30021	0.25	0.2	0.5	27.0	3.0	5.0				1.5	

UTP SOLUTIONS FOR WEAR PROTECTION

RECORD FLUXES FOR ESSC AND SASC

Group	Product Name	Description	EN ISO 14174 classification	Process	Deposit Characteristic	Elements Additions	Strip Electrode
General purpose	RECORD EST 426	Universal flux for electroslag strip cladding to achieve hardfacing with stainless steel strip electrodes	ES A FB 3	ESSC	neutral	-	Stainless steel strip electrodes
	RECORD RT 159	Universal flux for submerged arc welding and in particular for hardfacing	S A CS 3	SASC	neutral	-	Low alloyed & Stainless steel strip electrodes
Low Alloy Ferritic	RECORD SMO TW	Special welding flux in combination with an unalloyed electrode to achieve 0.5% molybdenum low-alloy steel. Typical hardness 150 HB	S A CS 3	SASC	150HB	Mo	SOUDOTAPE A
	RECORD CrMo15 TW	Special welding flux in combination with unalloyed electrodes, to achieve 1.25% chromium and 0.5% molybdenum low-alloy steel, typical hardness 200 HB	S A CS 3	SASC	200HB	Cr Mo	SOUDOTAPE A
	RECORD CrMo22	Special welding flux in combination with unalloyed electrodes, to achieve with 2.25% chromium and 1.0% molybdenum low-alloy steel, typical hardness 250 HB	S A CS 3	SASC	250HB	Cr Mo	SOUDOTAPE A
	RECORD RT 350	SAW flux in combination with an unalloyed electrode, for deposition of ferritic steel with a typical hardness of 350HB	S A AB 3	SASC	350HB	Cr Mo	SOUDOTAPE A
Low alloy Martensitic	RECORD RT 600	Special welding flux in combination with an unalloyed electrode to achieve martensitic steel with a typical hardness of 55 HRC	S A AB 3	SASC	55HRc	C Cr Mo	SOUDOTAPE A
Martensitic Stainless steel	RECORD RT 152	Special welding flux for submerged arc welding to achieve hardfacing 410NiMo (S41500 - F6MN - 1.4313) martensitic stainless steel. typical hardness of 40 HRc	S A CS 3	SASC	410NiMo	Ni Mo	SOUDOTAPE 430
	RECORD RT 742	Special welding flux to achieve hardfacing martensitic stainless steel 410NiMoNbV with typical hardness of 40 HRc	S A CS 3	SASC	410NiMoNbV	C Ni Mo Nb V	SOUDOTAPE 430
	RECORD RT 162	Single-layer welding flux to achieve hardfacing 410NiMo (S41500 - F6MN - 1.4313) martensitic stainless steel. Typical hardness of 40 HRc	S A CS 3	SASC	single layer	Cr Ni Mo	SOUDOTAPE 430
	RECORD RT 168	Special welding flux for submerged arc welding to achieve hardfacing 13 6 2 L super-martensitic stainless steel. Typical hardness 35 HRc	S A CS 3	SASC	13 6 2 L	Ni Mo	SOUDOTAPE 430L
	RECORD EST 423	Special flux for electroslag strip cladding with molybdenum addition	ES A FB 3	ESSC	55HRc	Mo	SOUDOTAPE 420
	RECORD EST 452	Special flux for electroslag strip cladding to achieve hardfacing of martensitic stainless steel 410NiMo (S41500 - F6MN - 1.4313) with a typical hardness of 40 HRc	ES A FB 3	ESSC	410NiMo	Ni Mo	SOUDOTAPE 430
Austenitic Stainless steel	RECORD EST 307	Single-layer flux for electroslag strip cladding to achieve (307) - 18 8 Mn austenitic chromium-nickel stainless steel with manganese addition	ES A FB 2B	ESSC	single layer	Mn	SOUDOTAPE 309L
Cobalt alloys	RECORD EST 126	Special flux for electroslag strip cladding to achieve hardfacing with cobalt alloys.	ES A FB 4	ESSC	neutral	-	SOUDOTAPE SCoCr6 SOUDOTAPE SCoCr21

UTP STAINLESS STEEL SOLUTIONS FOR CORROSION PROTECTION

RECORD FLUXES FOR ESSC AND SASC

Group	Product Name	Description	EN ISO 14174 classification	Process	Deposit Characteristic	Elements Additions	Strip Electrode
General purpose	RECORD EST 122	Universal flux for electroslag strip cladding with stainless steel strip electrode	ES A FB 2B	ESSC	neutral	-	Stainless steel strip electrodes
General purpose	RECORD EST 136	High-speed flux for electroslag strip cladding with stainless steel strip electrodes	ES A FB 2B	ESSC	neutral	-	Stainless steel strip electrodes
General purpose	RECORD INT 101	Universal welding flux for submerged arc welding with stainless steel strip electrodes	S A AB 2B	SASC	neutral	-	Stainless steel strip electrodes
General purpose	RECORD INT 109	Special welding flux for submerged arc welding with Nb-stabilised stainless steel strip electrodes	S A CS 2B	SASC	neutral	-	Stainless steel strip electrodes
Ferritic Stainless steel	RECORD RT 179	Special flux for submerged arc strip cladding to achieve 430 (X6Cr17 - 1.4016) ferritic 16% chromium stainless steel	S A CS 3	SASC	430	Cr	SOUDOTAPE 430
Austenitic Stainless steel	RECORD EST 308-1	Single-layer flux for electroslag strip cladding to achieve 308L - 19 9 L austenitic chromium-nickel stainless steel with very low carbon content	ES A FB 2B	ESSC	single layer	Cr Ni	SOUDOTAPE 308L
Austenitic Stainless steel	RECORD EST 309-1	Single-layer flux for electroslag strip cladding to achieve 309L - 23 12 L austenitic chromium-nickel stainless steel with very low carbon content	ES A FB 2B	ESSC	single layer	Cr Ni	SOUDOTAPE 309L
Austenitic Stainless steel	RECORD EST 316-1	Single-layer flux for electroslag strip cladding to achieve 316L - 19 13 3 L austenitic chromium-nickel-molybdenum stainless steel with very low carbon content	ES A FB 2B	ESSC	single layer	Cr Ni Mo	SOUDOTAPE 316L SOUDOTAPE 21.13.3L
Austenitic Stainless steel	RECORD EST 317-1	Single-layer flux for electroslag strip cladding to achieve 317L (18 15 3 L) austenitic chromium-nickel-high molybdenum stainless steel with a very low carbon content	ES A FB 2B	ESSC	single layer	Cr Ni Mo	SOUDOTAPE 21.13.3L
Austenitic Stainless steel	RECORD EST 317-2	Special flux for electroslag strip cladding to achieve 317L (18 15 3 L) austenitic chromium-nickel-high molybdenum stainless steel with a very low carbon content	ES A FB 2B	ESSC	317L	Cr Ni Mo	SOUDOTAPE 316L
Austenitic Stainless steel	RECORD EST 136Mo	High-speed flux for electroslag strip cladding to achieve 317L (18 15 3 L) austenitic chromium-nickel-molybdenum stainless steel with very low carbon content	ES A FB 2B	ESSC	317L	Mo	SOUDOTAPE 21.13.3L
Austenitic Stainless steel	RECORD EST 347-1	Single-layer flux for electroslag strip cladding to achieve 347 (19 9 Nb) austenitic chromium-nickel stainless steel with niobium addition	ES A FB 2B	ESSC	single layer	Cr Ni	SOUDOTAPE 347
Austenitic Stainless steel	RECORD EST 347-1 HS	Single-layer high-speed flux for electroslag strip cladding to achieve 347 (19 9 Nb) austenitic chromium-nickel stainless steel with niobium addition	ES A FB 2B	ESSC	single layer	Cr Ni	SOUDOTAPE 21.11LNb SOUDOTAPE 24.12LNb
Austenitic Stainless steel	RECORD EST 130	Single-layer flux for electroslag strip cladding to achieve 318 (19 12 3 Nb) austenitic chromium-nickel-molybdenum stainless steel with niobium	ES A FB 2B	ESSC	single layer	Nb	SOUDOTAPE 21.13.3L
Duplex Stainless steel	RECORD ES 2209	Special flux for electroslag strip cladding to achieve 2209 (22 9 3 N L) austenitic-ferritic chromium-nickel-molybdenum duplex	ES A FB 2B	ESSC	2209	Cr Ni	SOUDOTAPE 22.6.3L
Duplex Stainless steel	RECORD ES 2209-1	Single-layer flux for electroslag strip cladding to achieve 2209 (22 9 3 N L) austenitic-ferritic chromium-nickel-molybdenum duplex	ES A FB 2B	ESSC	single layer	Cr Ni Mo	SOUDOTAPE 22.6.3L
Duplex Stainless steel	RECORD EST 4462-1	Single-layer flux for electroslag strip cladding to achieve 2205 (1.4462) austenitic-ferritic chromium-nickel-molybdenum duplex	ES A FB 2B	ESSC	single layer	Cr Ni Mo	SOUDOTAPE 22.6.3L SOUDOTAPE 22.9.3L
Duplex Stainless steel	RECORD INT 110	Special welding flux for submerged arc welding to achieve 2209 (22 9 3 N L) austenitic-ferritic chromium-nickel-molybdenum duplex	S A CS 2B	SASC	2209	Cr Ni Mo	SOUDOTAPE 22.6.3L
Duplex Stainless steel	RECORD ES 2507	Special flux for electroslag strip cladding to achieve 2584 (25 9 4 N L) austenitic-ferritic chromium-nickel-molybdenum SuperDuplex	ES A FB 2B	ESSC	single layer	Cr Mo Ni	SOUDOTAPE 25.8.4L
Super Austenitic Stainless steel	RECORD 13 BLFT	Special welding flux for submerged arc welding to achieve 310MoLN (X1CrNiMoN25-22-2) chromium-nickel-molybdenum-super austenitic special steel	S A AB 2B	SASC	neutral	-	SOUDOTAPE 310MM
Super Austenitic Stainless steel	RECORD EST 385-1	Single-layer flux for electroslag strip cladding to achieve 385 (20 25 5 Cu N L) chromium-nickel-molybdenum-super austenitic special steel	ES A FB 2B	ESSC	single layer	Cr Ni Mo	SOUDOTAPE 20.25.5LCu

UTP NICKEL ALLOYS AND SPECIAL SOLUTIONS FOR CORROSION PROTECTION

RECORD FLUXES FOR ESSC AND SASC

Group	Product Name	Description	EN ISO 14174 classification	Process	Deposit Characteristic	Elements Additions	Strip Electrode
General purpose	RECORD EST 825H HS	Universal flux for electroslag strip cladding suitable for high welding speed	ES A FB 2B	ESSC	neutral	-	Nickel alloys strip electrodes
General purpose	RECORD EST 259	Universal flux for electroslag strip cladding suitable for nickel-chromium-molybdenum alloys with very low carbon and low silicon content	ES A FB 2B	ESSC	neutral	-	SOUDOTAPE NiCrMo59, SOUDOTAPE NiCrMo22 SOUDOTAPE NiCrMo4, SOUDOTAPE NiCrMo7
Nickel & Nickel Copper	RECORD Ni T	Special welding flux for submerged arc welding, to achieve a pure nickel weld cladding	S A AB 2B	SASC	Ni-1	Mn	SOUDOTAPE NiTi
Nickel-Fe-Cr	RECORD EST 825-1 HS	Single-layer flux for electroslag strip cladding to achieve NiFeCr-1 (N08825) nickel-iron-chromium alloy	ES A FB 2B	ESSC	single layer	Ni Cr	SOUDOTAPE 825HS
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD ES 6625	High-speed flux for electroslag strip cladding to achieve NiCrMo-3 (N06625 - Inconel® 625 - 2.4856) nickel-chromium-molybdenum alloy with niobium	ES A FB 2B	ESSC	neutral	-	SOUDOTAPE 625
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD ES 6625-1	Single-layer flux for electroslag strip cladding to achieve NiCrMo-3 (N06625 - Inconel® 625 - 2.4856) nickel-chromium-molybdenum alloy with added niobium	ES A FB 2B	ESSC	neutral	-	SOUDOTAPE 625
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST 625-1	Special flux for electroslag strip cladding to reduce the consumption of strip electrode, to achieve NiCrMo-3 (N06625 - Inconel® 625 - 2.4856) nickel-chromium-molybdenum alloy with niobium	ES A FB 2B	ESSC	625	Cr Mo Nb	SOUDOTAPE 625
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST 625-1 LD	Special flux for electroslag strip cladding to reduce the consumption of strip electrodes, to achieve NiCrMo-3 nickel-chromium-molybdenum alloy with added niobium and a maximum iron content of 5%.	ES A FB 2B	ESSC	625	Cr Mo Nb	SOUDOTAPE 625
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST 201	Flux for electroslag strip cladding with nickel alloys.	ES A FB 2B	ESSC	neutral	-	SOUDOTAPE NiCr3
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST 236	High-speed flux for electroslag strip cladding for applications with nickel alloys	ES A FB 2B	ESSC	neutral	-	SOUDOTAPE NiCr3
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD NFT 201	Welding flux for submerged arc welding for applications with nickel alloys	S A AB 2B	SASC	neutral	-	SOUDOTAPE NiCr3 SOUDOTAPE 625
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST NiCrFe7	Special flux for electroslag strip cladding to achieve NiCrFe-14 nickel-chromium-iron alloy with niobium in combination with SOUDOTAPE NiCrFe7	ES A FB 2B	ESSC	NiCrFe-14	Cr Mo Nb Mn	SOUDOTAPE NiCrFe7
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD NFT NiCrFe7	Special welding flux for submerged arc welding to achieve NiCrFe-7 nickel-chromium-iron alloy with niobium in combination with SOUDOTAPE NiCrFe7	S A AF 2B	SASC	NiCrFe-7	Cr Mn Nb	SOUDOTAPE NiCrFe7
Nickel-Cr-Fe / Nickel-Cr-Mo	RECORD EST 276	Special flux for electroslag strip cladding to achieve NiCrMo-4 (N10276 - Hastelloy® C276) nickel-chromium-molybdenum alloy with tungsten	ES A FB 2B	ESSC	NiCrMo-4	Ni Mo	SOUDOTAPE NiCrMo4
clad restoration	RECORD EST 501	Universal flux for electroslag strip cladding to achieve restoration of clad plates	ES A FB 2B	ESSC	neutral	-	stainless steel & Nickel alloys
825 clad restoration	RECORD ES 120 HR	High productivity special flux for electroslag strip cladding to achieve nickel-chromium-iron-molybdenum with up to 15% NiCrMo-3 strip electrode saving	ES A FB 2B	ESSC	single layer	Cr Mo	SOUDOTAPE 625

UTP SOLUTION

STRIP CLADDING EQUIPMENTS



From small pipe cladding (starting dia. 150 mm) to overlaying of large surfaces, our cladding nozzles will perfectly fit your application!

Strip Cladding Head 30-ES2



Strip Cladding Head 60-ES3



ULTIMATE UTP SOLUTIONS FOR ESSC AND SASC

Model			
	30 ES 2	60 ES 3	125 ES 3
Strip electrode size	15 to 30mm	30 to 60mm	30 to 120mm
Dimensions	125 x 150 x 220mm	265 x 280 x 270mm	300 x 200 x 450mm
Net weight	4kg	10kg	22kg
Maximum current	1000A	2000A	3700A
Deposition rate	25kg/h	50kg/h	90kg/h
Purpose	Pipe-limited space	General purpose	Heavy duty
Minimal access size			
Longitudinal	220mm	380mm	550mm
Circumferential	350mm	550mm	700mm

Strip Cladding Head 125-ES3



Magnetic steering device



UTP SOLUTIONS FOR WEAR PROTECTION

LOW ALLOYS AND TOOL STEELS

Weld Deposit Group	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name		Buffer of First Layer	Hardness	Chemical Analysis (Typical) (Weight -%)							
											C	Si	Mn	Ni	Cr	Mo	W	Fe
Low alloy Ferritic	Mild Steel	-	SASC	2	SOUDOTAPE A	(EL8)	RECORD RT 159		SOUDOTAPE A	150HB	0.05	0.5	1					Rem.
	1/2Mo	1.5415	SASC	2	SOUDOTAPE A	(EL8)	RECORD S _{Mo} TW		SOUDOTAPE A	150HB	0.04	0.5	1			0.6		Rem.
	CrMo 1	1.7335	SASC	2	SOUDOTAPE A	(EL8)	RECORD CrMo15 TW		SOUDOTAPE A	200HB	0.04	0.4	0.5		1.3	0.6		Rem.
	CrMo 2	1.7380	SASC	2	SOUDOTAPE A	(EL8)	RECORD CrMo22		SOUDOTAPE A	250HB	0.08	0.4	0.2		2.2	0.9		Rem.
	CrMo 5	-	SASC	3	SOUDOTAPE A	(EL8)	RECORD RT 350		SOUDOTAPE A	350HB	0.08	0.3	0.3		5	0.9		Rem.
Low alloy Martensitic	C CrMo 5	-	SASC	3	SOUDOTAPE A	(EL8)	RECORD RT 600		SOUDOTAPE A	55HRc	0.3	0.9	0.3		5.3	0.7		Rem.
Tool steel Martensitic	C CrMoW 6	(1.2606)	SASC	3	SOUDOTAPE 258	"EQFe-8"	RECORD RT 159		SOUDOTAPE 258	50HRc	0.2	0.5	1	0.3	6.6	1.6	1.6	Rem.
	C CrMoW 6	(1.2606)	ESSC	2	SOUDOTAPE 258	"EQFe-8"	RECORD EST 426		SOUDOTAPE 258	50HRc	0.2	0.6	1	0.3	6.4	1.5	1.5	Rem.
	C CrMoW 6 3	-	ESSC	2	SOUDOTAPE 258	"EQFe-8"	RECORD EST 423		SOUDOTAPE 258	55HRc	0.2	0.6	1	0.3	6.4	3	1.5	Rem.

UTP SOLUTIONS FOR WEAR PROTECTION

HIGH ALLOYS - NICKEL ALLOY - COBALT ALLOY

Weld Deposit Group	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name		Buffer of First Layer	Hardness	Chemical Analysis (Typical) (Weight -%)											
											C	Si	Mn	Ni	Cr	Mo	Nb	W	Co	Al	V	Fe
Ferritic Stainless steel	17	1.4016	SASC	3	SOU DOTAPE 430	EQ430	RECORD RT 159		SOU DOTAPE 430	200HB	0.05	0.9	0.2		15							Rem.
	17	1.4016	ESSC	2	SOU DOTAPE 430	EQ430	RECORD EST 426		SOU DOTAPE 430	200HB	0.06	0.5	0.4		15.3							Rem.
	13	1.4000	SASC	3	SOU DOTAPE 410L	EQ410	RECORD RT 159		SOU DOTAPE 410L	200HB	0.05	0.9	0.2		11.3							Rem.
	13	1.4000	ESSC	2	SOU DOTAPE 410L	EQ410	RECORD EST 426		SOU DOTAPE 410L	200HB	0.03	0.5	0.2		11.9							Rem.
Martensitic Stainless steel	13 4 Mo	1.4313	SASC	3	SOU DOTAPE 430	EQ430	RECORD RT 152		SOU DOTAPE 430	40HRc	0.03	0.9	0.5	3.8	14	0.9						Rem.
	13 4 Mo	1.4313	SASC	1	SOU DOTAPE 430	EQ430	RECORD RT 162			40HRc	0.05	1	0.6	4	13.1	0.7						Rem.
	13 4 Mo	1.4313	ESSC	2	SOU DOTAPE 430	EQ430	RECORD EST 452		SOU DOTAPE 430	40HRc	0.05	0.4	0.3	3.3	14.1	0.4						Rem.
	13 4 2 Nb V	-	SASC	3	SOU DOTAPE 430	EQ430	RECORD RT 742		SOU DOTAPE 430	40HRc	0.1	0.9	0.3	4	13.1	1.6	0.2				0.1	Rem.
	13 H	1.4021	SASC	3	SOU DOTAPE 420	EQ420	RECORD RT 159		SOU DOTAPE 420	50HRc	0.3	0.8	0.2		12.2							Rem.
	13 H	1.4021	ESSC	2	SOU DOTAPE 420	EQ420	RECORD EST 426		SOU DOTAPE 420	50HRc	0.3	0.3	0.3		12.6							Rem.
	13 Mo H	-	ESSC	2	SOU DOTAPE 420	EQ420	RECORD EST 423		SOU DOTAPE 420	55HRc	0.3	0.2	0.2		12.8	1.8						Rem.
	13 6 2 L	-	SASC	3	SOU DOTAPE 430L	EQ430	RECORD RT 168		SOU DOTAPE 430L	35HRc	0.02	0.8	0.2	5.2	12.9	2.6						Rem.
Nickel-Cr-Mo	NiCr-15Mo15Fe6W4	2.4819	ESSC	2	SOU DOTAPE NiCrMo4	EQNiCrMo-4	RECORD EST 259		SOU DOTAPE NiCrMo59		0.01	0.4	0.5	Rem.	15.8	15.3		3	0.4	0.1		6.8
	NiCr-15Mo15Fe6W4	2.4819	ESSC	2	SOU DOTAPE NiCrMo4	EQNiCrMo-4	RECORD EST 276		SOU DOTAPE NiCrMo59		0.01	0.4	0.3	Rem.	15.7	15.7		3	0.4	0.1		6.5
Cobalt Alloy	Co1	-	ESSC	2	SOU DOTAPE SCoCr21	"EQCCoCr-E"	RECORD EST 126		SOU DOTAPE SCoCr21	30HRc	0.2	0.4	0.4	2.9	25.4	4.8			Rem.			3
	Co2	-	ESSC	2	SOU DOTAPE SCoCr6	"EQCCoCr-A"	RECORD EST 126		L2:L136	40HRc	1	0.3	0.5	2.7	29			4.4	Rem.			4

UTP SOLUTIONS FOR CORROSION PROTECTION

AUSTENITIC STAINLESS STEEL COMBINATIONS

ASME II C SFA 5.39 weld deposit	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification		RECORD Flux Name	Buffer of First Layer	Chemical Analysis (Typical) (Weight -%)							
										C	Si	Mn	Ni	Cr	Mo	Nb	Fe
308L	19 9 L	1.4316	SASC	2	SOU DOTAPE 308L	EQ308L		RECORD INT 101	SOU DOTAPE 309L	0.03	0.8	1.4	10.5	20.1	0.1		Rem.
	19 9 L	1.4316	ESSC	2	SOU DOTAPE 308L	EQ308L		RECORD EST 122	SOU DOTAPE 22.11L	0.02	0.5	1.3	10.3	19.3	0.1		Rem.
	19 9 L	1.4316	ESSC	2	SOU DOTAPE 308L	EQ308L		RECORD EST 136	SOU DOTAPE 309L	0.02	0.5	1.3	10.4	19.2	0.1		Rem.
	19 9 L	1.4316	ESSC	1	SOU DOTAPE 22.11L	(EQ309L)		RECORD EST 122		0.03	0.5	1.2	10	18.5	0.2		Rem.
308	19 9	1.4908	ESSC	1	SOU DOTAPE 309L	EQ309L		RECORD EST 136		0.04	0.5	1.3	10.9	18.9			Rem.
	19 9	1.4908	SACS	1	SOU DOTAPE 309L	EQ309L		RECORD INT 101		0.06	0.8	1.4	10.6	18.7			Rem.
309L	23 12 L	(1.4833)	SASC	2	SOU DOTAPE 309L	EQ309L		RECORD INT 109	SOU DOTAPE 309L	0.03	0.8	0.9	12.6	22.1	0.1		Rem.
	23 12 L	(1.4833)	ESSC	1	SOU DOTAPE 309L	EQ309L		RECORD EST 309-1		0.03	0.4	1.3	12.9	22.4			Rem.
347	19 9 Nb	1.4550	SASC	2	SOU DOTAPE 347	EQ347		RECORD INT 109	SOU DOTAPE 309L	0.03	0.8	0.9	10.2	18.6	0.2	0.3	Rem.
	19 9 Nb	1.4550	ESSC	2	SOU DOTAPE 347	EQ347		RECORD EST 122	SOU DOTAPE 22.11L	0.02	0.5	1.3	10.4	19	0.1	0.3	Rem.
	19 9 Nb	1.4550	ESSC	2	SOU DOTAPE 347	EQ347		RECORD EST 136	SOU DOTAPE 309L	0.02	0.6	1.3	10.6	18.9	0.1	0.3	Rem.
	19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 347	EQ347		RECORD EST 347-1		0.04	0.6	1.3	9.7	18.2	0.1	0.4	Rem.
	19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 21.11LNb	(EQ347)		RECORD EST 122		0.03	0.5	1.3	10.2	19		0.4	Rem.
	19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 21.11LNb	(EQ347)		RECORD EST 347-1 HS		0.05	0.4	1.3	9.9	18.2		0.4	Rem.
	19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 21.11LNb	(EQ347)		RECORD EST 130		0.03	0.5	1.3	10.2	18.9		0.8	Rem.
	19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 24.12LNb	"EQ309LNb"		RECORD EST 136		0.05	0.5	1.6	9.9	18.5	0.1	0.5	Rem.
19 9 Nb	1.4550	ESSC	1	SOU DOTAPE 24.12LNb	"EQ309LNb"		RECORD EST 347-1 HS		0.06	0.5	1.6	10.2	18.7	0.1	0.5	Rem.	
316L	19 12 3 L	1.4404	SASC	2	SOU DOTAPE 316L	EQ316L		RECORD INT 101	SOU DOTAPE 309L	0.03	0.8	1.4	12.4	18.7	2.4		Rem.
	19 12 3 L	1.4404	ESSC	2	SOU DOTAPE 316L	EQ316L		RECORD EST 122	SOU DOTAPE 21.13.3L	0.02	0.5	1.3	12.7	17.9	2.9		Rem.
	19 12 3 L	1.4404	ESSC	2	SOU DOTAPE 316L	EQ316L		RECORD EST 136	SOU DOTAPE 309L	0.02	0.5	1.3	12.2	17.8	2.3		Rem.
	19 12 3 L	1.4404	ESSC	1	SOU DOTAPE 316L	EQ316L		RECORD EST 316-1		0.03	0.5	1.3	12.6	18.5	2.6		Rem.
	19 12 3 L	1.4404	ESSC	1	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 122		0.03	0.5	1.3	12.5	18	2.6		Rem.
	19 12 3 L	1.4404	ESSC	2	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 136	SOU DOTAPE 309L	0.03	0.5	1.3	12.9	19.2	2.2		Rem.
	19 12 3 L	1.4404	ESSC	1	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 316-1		0.04	0.4	1.3	12.8	19	2.5		Rem.
317L	(18 15 3 L)	(1.4438)	SASC	2	SOU DOTAPE 317L	EQ317L		RECORD INT 101	SOU DOTAPE 21.13.3L	0.03	0.8	1.2	13.1	18.5	3.3		Rem.
	(18 15 3 L)	(1.4438)	ESSC	2	SOU DOTAPE 316L	EQ316L		RECORD EST 317-2	SOU DOTAPE 316L	0.03	0.5	1.4	13.6	18.6	3.3		Rem.
	(18 15 3 L)	(1.4438)	ESSC	2	SOU DOTAPE 317L	EQ317L		RECORD EST 122	SOU DOTAPE 21.13.3L	0.01	0.5	1	13.5	18.2	3.4		Rem.
	(18 15 3 L)	(1.4438)	ESSC	2	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 136Mo	SOU DOTAPE 21.13.3L	0.01	0.4	1.3	13.2	18.9	3.3		Rem.
	(18 15 3 L)	(1.4438)	ESSC	1	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 317-1		0.04	0.4	1.4	13	18.3	3.2		Rem.
318	19 12 3 Nb	(1.4576)	ESSC	2	SOU DOTAPE 316L	EQ316L		RECORD EST 130	SOU DOTAPE 22.11L	0.02	0.6	1.3	12.4	18	2.6	0.4	Rem.
	19 12 3 Nb	(1.4576)	ESSC	1	SOU DOTAPE 21.13.3L	(EQ309LMo)		RECORD EST 130		0.03	0.4	1.3	12.5	18	2.8	0.4	Rem.

UTP SOLUTIONS FOR CORROSION PROTECTION

DUPLEX STAINLESS STEEL SUPER AUSTENITIC STAINLESS STEEL

Weld Deposit Group	ASME II C SFA 5.39 weld deposit	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name	Buffer of First Layer	Chemical Analysis (Typical) (Weight -%)										
										C	Si	Mn	Ni	Cr	Mo	Nb	Cu	W	N	Fe
Duplex Stainless steel	(2209)	22 5 3 N L	1.4462	SASC	2	SOU DOTAPE 22.6.3L	(EQ2209)	RECORD INT 110	SOU DOTAPE 22.6.3L	0.03	0.9	1	6.9	21.3	2.9				0.16	Rem.
	(2209)	22 5 3 N L	1.4462	ESSC	2	SOU DOTAPE 22.6.3L	(EQ2209)	RECORD EST 122	SOU DOTAPE 309L	0.02	0.6	1.1	6.5	21.4	2.8		0.2		0.14	Rem.
	(2209)	22 5 3 N L	1.4462	ESSC	1	SOU DOTAPE 22.6.3L	(EQ2209)	RECORD EST 4462-1		0.04	0.5	1.1	6.5	21.8	2.9		0.2		0.14	Rem.
	2209	22 9 3 N L	(1.4462)	SASC	2	SOU DOTAPE 22.9.3L	EQ2209	RECORD INT 109	SOU DOTAPE 22.9.3L	0.03	0.9	0.8	7.9	21.3	3				0.14	Rem.
	2209	22 9 3 N L	(1.4462)	ESSC	1	SOU DOTAPE 22.6.3L	(EQ2209)	RECORD ES 2209-1		0.04	0.5	1.3	8.4	21.9	3.1		0.2		0.14	Rem.
	2209	22 9 3 N L	(1.4462)	ESSC	2	SOU DOTAPE 22.6.3L	(EQ2209)	RECORD ES 2209	SOU DOTAPE 22.11L	0.03	0.5	1.3	9.8	23.6	2.9		0.2		0.14	Rem.
	2209	22 9 3 N L	(1.4462)	ESSC	2	SOU DOTAPE 22.9.3L	EQ2209	RECORD EST 122	SOU DOTAPE 22.9.3L	0.02	0.6	1.2	8.5	22.2	3				0.14	Rem.
	2594	25 10 4 N L	(1.4410)	ESSC	1	SOU DOTAPE 25.8.4L	(EQ2594)	RECORD ES 2507		0.03	0.4	0.7	9.6	24.8	3.6		0.3		0.25	Rem.
Super Austenitic Stainless steel	(G)	20 18 7 Cu N L	1.4547	ESSC	2	SOU DOTAPE 254SMo	"EQ254SMo"	RECORD EST 122	SOU DOTAPE 254SMo	0.01	0.6	0.2	17.8	19.4	6		0.6		0.2	Rem.
	(385)	20 25 5 Cu N L	1.4539	ESSC	2	SOU DOTAPE 20.25.5LCu	EQ385	RECORD EST 122	SOU DOTAPE 20.25.5LCu	0.01	0.5	1.1	24.1	19.2	4.4		1.5			Rem.
	385	20 25 5 Cu N L	1.4539	ESSC	1	SOU DOTAPE 20.25.5LCu	EQ385	RECORD EST 385-1		0.03	0.4	2	24.6	19.7	4.6		1.4			Rem.
	(320)	20 34 2 Cu Mn Nb	2.4660	ESSC	1	SOU DOTAPE 825HS	EQNiFeCr-1	RECORD EST 320		0.05	0.5	0.7	36.5	21.1	2.6		3			Rem.
	G	25 22 2 N L	(1.4466)	SASC	3	SOU DOTAPE 310MM	"EQ310LMo"	RECORD 13 BLFT	SOU DOTAPE 310MM	0.02	0.6	3.8	22.2	24.7	2.2				0.14	Rem.
	G	25 22 2 N L	(1.4466)	ESSC	2	SOU DOTAPE 310MM	"EQ310LMo"	RECORD EST 122	SOU DOTAPE 309L	0.01	0.3	3.7	21.1	24.5	2.1				0.14	Rem.

UTP SOLUTIONS FOR CORROSION PROTECTION

NICKEL IRON CHROMIUM ALLOYS NICKEL CHROMIUM IRON ALLOYS

Weld Deposit Group	ASME II C SFA 5.39 weld deposit	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name	Buffer of First Layer	Chemical Analysis (Typical) (Weight -%)										
										C	Si	Mn	Ni	Cr	Mo	Nb	Ti	Cu	Al	Fe
Nickel-Fe-Cr	(NiFeCr-1)	NiFe23Cr21Mo3	2.4858	ESSC	2	SOU DOTAPE 825HS	EQNiFeCr-1	RECORD EST 825H HS	SOU DOTAPE 825HS	0.02	0.6	0.7	41	21	2.9		0.1	1.9		30.8
	(NiFeCr-1)	NiFe23Cr21Mo3	2.4858	ESSC	1	SOU DOTAPE 825HS	EQNiFeCr-1	RECORD EST 825-1 HS		0.03	0.6	0.8	38.4	19.8	2.6		0.1	1.9		34.8
Nickel-Cr-Fe	NiCr-3	NiCr20Mn3Nb	2.4806	SASC	3	SOU DOTAPE NiCr3	EQNiCr-3	RECORD NFT 201	SOU DOTAPE NiCr3	0.01	0.3	3.5	Rem.	19.6		2.3	0.1			1.6
	NiCr-3	NiCr20Mn3Nb	2.4806	ESSC	2	SOU DOTAPE NiCr3	EQNiCr-3	RECORD EST 201	SOU DOTAPE NiCr3	0.01	0.3	3	Rem.	19.2		2.3	0.1			1.7
	NiCr-3	NiCr20Mn3Nb	2.4806	ESSC	3	SOU DOTAPE NiCr3	EQNiCr-3	RECORD EST 236	SOU DOTAPE NiCr3	0.01	0.3	3.1	Rem.	19.3		2.4	0.1			1.4
	NiCrFe-7	NiCr30Fe9Nb	(2.4642)	SASC	3	SOU DOTAPE NiCrFe7	EQNiCrFe-7	RECORD NFT NiCrFe7	SOU DOTAPE NiCrFe7	0.03	0.7	2.7	Rem.	29	0.3	1.9	0.2		0.2	9.5
	NiCrFe-7	NiCr30Fe9Nb	(2.4642)	SASC	3	SOU DOTAPE 690	EQNiCrFe-14	RECORD NFT 690	SOU DOTAPE 690	0.03	0.6	2.7	Rem.	28.7		1.8	0.2		0.1	10.3
	NiCrFe-14	NiCr30Fe9Nb low Si	(2.4642)	ESSC	2	SOU DOTAPE NiCrFe7	EQNiCrFe-7	RECORD EST NiCrFe7	SOU DOTAPE NiCrFe7	0.03	0.4	1.4	Rem.	29.4	0.1	1.5	0.1		0.1	10.2
	NiCrFe-14	NiCr30Fe9Nb low Si	(2.4642)	ESSC	2	SOU DOTAPE 690	EQNiCrFe-14	RECORD EST 690	SOU DOTAPE 690	0.02	0.3	2.4	Rem.	30.1		1.7	0.1		0.1	11

UTP SOLUTIONS FOR CORROSION PROTECTION

NICKEL CHROMIUM MOLYBDENUM ALLOYS

Weld Deposit Group	ASME II C SFA 5.39 weld deposit	Weld Deposit Composition	W.-Nr.	Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name	Buffer of First Layer	Chemical Analysis (Typical) (Weight -%)										
										C	Si	Mn	Ni	Cr	Mo	Nb	W	Co	Al	Fe
Nickel-Cr-Mo	NiCrMo-3	NiCr22Mo9Nb	2.4856	SASC	3	SOUDOTAPE 625	EQNiCrMo-3	RECORD NFT 201	SOUDOTAPE 625	0.02	0.3	0.5	64	21.7	8.4	3.2				1.7
	NiCrMo-3	NiCr22Mo9Nb	2.4856	ESSC	2	SOUDOTAPE 625	EQNiCrMo-3	RECORD ES6625	SOUDOTAPE 625	0.02	0.5	0.1	62	20.6	8.3	3.3				4.8
	NiCrMo-3	NiCr22Mo9Nb	2.4856	ESSC	1	SOUDOTAPE 625	EQNiCrMo-3	RECORD ES6625-1		0.02	0.5	0.1	62	20.3	8.2	3.3				6.5
	NiCrMo-3	NiCr22Mo9Nb	2.4856	ESSC	1	SOUDOTAPE 625	EQNiCrMo-3	RECORD EST 625-1		0.02	0.5	0.2	58	22.9	8.7	3.6				6.5
	NiCrMo-3	NiCr22Mo9Nb	2.4856	ESSC	1	SOUDOTAPE 625	EQNiCrMo-3	RECORD EST 625-1 LD		0.02	0.4	0.2	60	22.8	9.5	3.6				5
	NiCrMo-4	NiCr15Mo15Fe6W4	2.4819	ESSC	2	SOUDOTAPE NiCrMo4	EQNiCrMo-4	RECORD EST 259	SOUDOTAPE NiCrMo59	0.01	0.4	0.5	Rem.	15.8	15.3		3	0.4	0.1	6.8
	NiCrMo-4	NiCr15Mo15Fe6W4	2.4819	ESSC	2	SOUDOTAPE NiCrMo4	EQNiCrMo-4	RECORD EST 276	SOUDOTAPE NiCrMo59	0.01	0.4	0.3	Rem.	15.7	15.7		3	0.4	0.1	6.5
	NiCrMo-7	NiCr16Mo15Ti	2.4610	ESSC	2	SOUDOTAPE NiCrMo7	EQNiCrMo-7	RECORD EST 259	SOUDOTAPE NiCrMo7	0.01	0.4	0.1	Rem.	15	15.3					2.8
	NiCrMo-10	NiCr21Mo13W3	2.4602	ESSC	2	SOUDOTAPE NiCrMo22	EQNiCrMo-10	RECORD EST 259	SOUDOTAPE NiCrMo22	0.01	0.4	0.2	Rem.	20.5	13.5		2.7		0.1	3.8
	(NiCrMo-13)	NiCr23Mo16	2.4605	ESSC	2	SOUDOTAPE NiCrMo59	EQNiCrMo-13	RECORD EST 259	SOUDOTAPE NiCrMo59	0.01	0.4	0.2	Rem.	21.8	15.3				0.1	1.7

COBALT ALLOYS

DEPOSIT TYPES

All given values are typical

Type Of Deposited Alloy	Welding Process	Layer	Type Of Strip (60 x 0,5 mm)	Type Of Flux	Chemical Analysis (Typical) (Weight -%)									Welding Parameters (60 x 0,5 mm)			Layer Thickness	Deposition Rate	
					C	Mn	Si	Cr		Ni	Mo	Fe	Hardness	Others	A	V	cm/min	mm	kg/h
Cobalt alloy 6	ESW	1 st L. Strip	SOUDOTAPE SCoCr6		1,1	0,6	0,1	31,5		2,1	0,8			5 W	-	-	-	-	-
	ESW	1 st L. deposit	SOUDOTAPE SCoCr6	RECORD EST 126	1	0,4	0,3	28,5				6	40HRc	4,8 W	1000	26	10	5	19,2
	ESW	2 nd L. deposit	SOUDOTAPE SCoCr6	RECORD EST 126	1,05	0,5	0,3	29,0				3	42HRc	4,5 W	1000	26	10	4,5	19,2
Cobalt alloy 21	ESW	1 st L. Strip	SOUDOTAPE SCoCr 21		0,250	0,4	0,5	27,2		3,3	5,5				-	-	-	-	-
	ESW	1 st L. deposit	SOUDOTAPE SCoCr 21	RECORD EST 126	0,300	0,2	0,4	24,5		1,5	5,3	10	30HRc		1000	26	10	5	19,2
	ESW	2 nd L. deposit	SOUDOTAPE SCoCr 21	RECORD EST 126	0,250	0,4	0,5	25,7		3	5,3	3	31HRc		1000	26	10	4,5	19,2



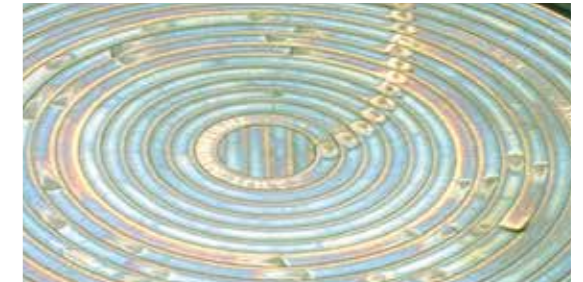


OIL AND GAS

Strip cladding by submerged arc strip cladding (SASC) and by electroslag strip cladding (ESSC) are finding an increasing use in the petroleum and gas industries. They have become the preferred methods for cladding large areas such as pressure vessels, separator vessels and high pressure separators. Strip cladding is also commonly used for the inlets, outlets, pipes and valves that are needed to transport or control the oil and gas flows.



Separator Vessel (Nickel alloy 400)
SOUDOTAPE NiCu7 + RECORD EST 400



Tube sheet (Stainless steel alloy 316L)
SOUDOTAPE 309L (60*0.5) + RECORD EST 136
SOUDOTAPE 316L (60*0.5) + RECORD EST 136



Ball Valves (Nickel alloy 625)
SOUDOTAPE 625 + RECORD ES 6625



Pipes (Nickel alloy 825)
SOUDOTAPE 825 + RECORD EST 825HS

KEY INDUSTRIES

Advice joins products. Our industry experts possess a deep technical understanding of industry specific welding applications and processes. They have profound industry related project expertise and are ready to discuss welding challenges with you.

CHEMICAL PROCESSING

The chemical industry (chemical processing, pulp and paper, urea, etc.) uses a wide range of corrosion-resistant alloys in equipment exposed to highly corrosive environments, high pressures and temperatures. The strip cladding process is particularly appropriated for corrosion resistant overlaying on vessels, tanks, valves, pumps, compressors, agitators, etc.



Pressure Vessel (Stainless steel alloy 347)
SOUDOTAPE 24.12 LNb + RECORD EST 136



Separator Vessel (Nickel alloy 625)
SOUDOTAPE 625 + RECORD ES 6625

POWER GENERATION

With over 50 years of experience as a supplier to the nuclear industry, we offer high performance and quality certified strip cladding solutions for all the main applications (reactor vessels, steam generators, pressurizers, accumulators, etc.).



Reactor Vessel
SOUDOTAPE 309L Q5 + RECORD 6/74 Q5



Vessel Shell Ring
SOUDOTAPE 308 L Q5 + RECORD 8B308T1 Q5



Steam Generator Expansion Tank
SOUDOTAPE 308 L Q5 +
RECORD 8B308T1 Q5
SOUDOTAPE 309 L Q5 +
RECORD 8B308T1 Q5

All products can be specifically produced for an application in the nuclear field and be classified into our so called "Q5" category. This international designation is an indication for the customer that the product has been produced following the nuclear program of our ASME certified Quality Insurance manual and is qualified, according to our QSC580 certificate, for use in the nuclear field.



MAINTENANCE AND REPAIR

With a wide range of available alloys (low alloyed, hardfacing alloys, stainless steel alloys, Ni, Co, etc.), our strip cladding products can also be used for maintenance and repair applications. With higher deposition rates, SAW and ESW are perfectly suitable wherever high productivity and high quality deposits are required.



Paper Rolls (13 4 Mo)
SOUDOTAPE 430 + RECORD EST 452



Steelworks - Continuous Casting Rollers (13 6 2 L)
SOUDOTAPE 430 L + RECORD RT 168



Forging - Punching Tools (Hastelloy C276)
Barrier - SOUDOTAPE NiCrMo59 + RECORD EST 259
Finish - SOUDOTAPE NiCrMo4 + RECORD EST 259



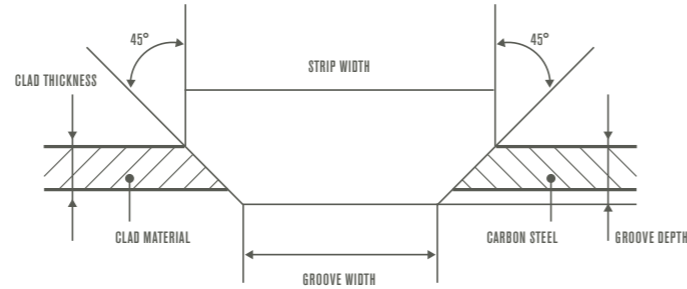
Rails hardfacing (austenitic stainless steel 307L)
SOUDOTAPE 309L + RECORD EST 307

Curious about our latest news
on strip cladding?
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ROLL BONDED CLAD PLATES

When the use of roll bonded clad plates is preferred, strip cladding remains the best solution for the cladding of the welded joints. Indeed, due to its low penetration and therefore low dilution, the electroslag strip cladding offers equivalent chemistry and corrosion properties as the clad plate itself even in one single layer. If the chemistry of the strip cladding does not match exactly the one of the clad, then as an alternative, an alloy given a higher corrosion resistance is chosen.



Clad restoration	Weld Deposit Group	ASME II C SFA 5.39 weld deposit	Weld deposit composition	W.-Nr.		Process	Number of Layers	Strip Electrode Name	Strip Electrode Classification	RECORD Flux Name	ASME II C SFA 5.39 classification
410S	Ferritic Stainless steel	410	13	1.4000		ESSC	1	SOUDOTAPE 430	EQ430	RECORD EST 501	ESCLAD1-EQ430/410
304L	Austenitic Stainless steel	308L	19 9 L	1.4316		ESSC	1	SOUDOTAPE 22.11L	(EQ309L)	RECORD EST 501	ESCLAD1-(EQ309L)/308L
321 ; 347	Austenitic Stainless steel	347	19 9 Nb	1.4550		ESSC	1	SOUDOTAPE 21.11LNb	(EQ347)	RECORD EST 501	ESCLAD1-(EQ347)/347
316L ; 316Ti	Austenitic Stainless steel	316L	19 12 3 L	1.4404		ESSC	1	SOUDOTAPE 21.13.3L	(EQ309LMo)	RECORD EST 501	ESCLAD1-(EQ309LMo)/316L
309L	Austenitic Stainless steel	309L	23 12 L	(1.4833)		ESSC	1	SOUDOTAPE 309L	EQ309L	RECORD EST 501	ESCLAD1-EQ309L/309L
317L	Austenitic Stainless steel	317L	(18 15 3 L)	(1.4438)		ESSC	1	SOUDOTAPE 21.13.3L	(EQ309LMo)	RECORD EST 317-1	ESCLAD1-(EQ309LMo)/317L
317LMN	Super Austenitic Stainless steel	G	G	-		ESSC	1	SOUDOTAPE 20.25.5LCu	EQ385	RECORD EST 385-1	ESCLAD1-EQ385/G
Alloy 825	Nickel-Fe-Cr	G	G	-		ESSC	1	SOUDOTAPE 625	EQNiCrMo-3	RECORD ES 120 HR	ESCLAD1-EQNiCrMo-3/G
Alloy 200 ; Alloy 201	Nickel & Nickel Copper	(Ni-1)	NiTi3	(2.4066)		ESSC	3	SOUDOTAPE NiTi	(EQNi-1)	RECORD EST 200	ESCLAD3-(EQNi-1)/(Ni-1)
Alloy 600	Nickel-Cr-Fe	NiCr-3	NiCr20Mn3Nb	2.4806		ESSC	2	SOUDOTAPE NiCr3	EQNiCr-3	RECORD EST 201	ESCLAD2-EQNiCr-3/NiCr-3
Alloy 800 ; Alloy 28 ; Alloy 20 ; 904L ; Inconel 625	Nickel-Cr-Mo	NiCrMo-3	NiCr22Mo9Nb	2.4856		ESSC	1	SOUDOTAPE 625	EQNiCrMo-3	RECORD EST 625-1	ESCLAD1-EQNiCrMo-3/NiCrMo-3
Hastelloy C276	Nickel-Cr-Mo	NiCrMo-4	NiCr15Mo15Fe6W4	2.4819		ESSC	2	SOUDOTAPE NiCrMo4	EQNiCrMo-4	RECORD EST 259	ESCLAD2-EQNiCrMo-4/NiCrMo-4
Alloy C4	Nickel-Cr-Mo	NiCrMo-7	NiCr16Mo15Ti	2.4610		ESSC	2	SOUDOTAPE NiCrMo7	EQNiCrMo-7	RECORD EST 259	ESCLAD2-EQNiCrMo-7/NiCrMo-7
Alloy C22	Nickel-Cr-Mo	NiCrMo-10	NiCr21Mo13W3	2.4602		ESSC	2	SOUDOTAPE NiCrMo22	EQNiCrMo-10	RECORD EST 259	ESCLAD2-EQNiCrMo-10/NiCrMo-10
Alloy 59	Nickel-Cr-Mo	(NiCrMo-13)	NiCr23Mo16	2.4605		ESSC	2	SOUDOTAPE NiCrMo59	EQNiCrMo-13	RECORD EST 259	ESCLAD2-EQNiCrMo-13/(NiCrMo-13)



JOIN! voestalpine Böhler Welding

We are a leader in the welding industry with over 100 years of experience, more than 50 subsidiaries and more than 4,000 distribution partners around the world. Our extensive product portfolio and welding expertise combined with our global presence guarantees we are close when you need us. Having a profound understanding of your needs enables us to solve your demanding challenges with Full Welding Solutions - perfectly synchronized and as unique as your company.



Lasting Connections – Perfect alignment of welding machines, consumables and technologies combined with our renowned application and process know-how provide the best solution for your requirements: A true and proven connection between people, products and technologies. The result is what we promise: Full Welding Solutions for Lasting Connections.



Tailor-Made Protectivity™ – Proven under the toughest conditions: Our products protect metal surfaces from wear and corrosion. With over 70 years of experience and the broadest product portfolio in the industry, we are your preferred partner for Surface Protection solutions. We deliver what we promise: Surface Protection tailored to your needs.



In-Depth Know-How – As a manufacturer of soldering and brazing consumables, we offer proven solutions based on 60 years of industrial experience, tested processes and methods, made in Germany. This in-depth know-how makes us the internationally preferred partner to solve your soldering and brazing challenge through innovative solutions. The result is what we promise: Innovation based on in-depth know-how.

The Management System of voestalpine Böhler Welding Group GmbH, Peter-Mueller-Strasse 14-14a, 40469 Duesseldorf, Germany has been approved by Lloyd's Register Quality Assurance to: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, applicable to: Development, Manufacturing and Supply of Welding and Brazing Consumables. More information: www.voestalpine.com/welding



