CORODUR
VERSCHLEISS-SCHUTZ GMBH

Your competent partner for individual wear protection

Wear analysis | Material development | Production | Application

Made in Germany

Company Presentation

Founded in 1990, Corodur Verschleiss-Schutz GmbH Thale is a mid-sized corporation with currently more than 90 employees, offering innovative manufacturing, services, research and development in the field of sustainable wear protection from a single source.

Many years of experience and knowledge in dealing with complex wear and tear problems makes us a recognized partner for wear-intensive industries. As a developer and manufacturer of welding- and spraying additives in form of flux-cored wire electrodes, coated wear plates as well as powder metallurgical sintered strip electrodes, we provide our customers with direct advice and support. In particular, the development of materials for the individual and sustainable solution of various wear- and corrosion problems is one of our core competency.

In order to solve varied wear topics, we offer our customers the right choice of complementary products and services from an individual offer to a complete solution. With competent technical advice, innovative research and development as well as individually adapted material production, we offer a variety of possibilities to meet your needs.

Products and Services

This catalog presents standard products from the extensive product range of Corodur Verschleiss-Schutz GmbH Thale. For your special wishes we are at your disposal at any time upon request.

Flux-cored Wire Electrodes

WORK HARDENING

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® 200 K	0,1	0,4	6	18	8,5						Base		180 - 200 HB; work hardened 400 HB
Corthal® 240 K	1	0,4	14	4	0,6						Base		200 - 230 HB; work hardened 450 HB
Corthal® 250 K	0,4	0,4	16	14	1,2	0,6			0,2		Base		220 - 250 HB; work hardened 500 HB

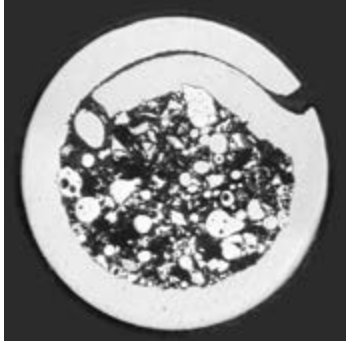
IMPACT RESISTANT

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® 300	0,1	0,5	2	1,5		0,4					Base		280 - 325 HB
Corthal® 310	0,12	0,5	1	11,5	2	1		0,2	0,1		Base		43 - 45 HRc
Corthal® 337	0,2	0,8	0,8	5	0,2	4					Base		48 - 50 HRc
Corthal® 356	0,05	0,8	1	15	4	1		0,2	0,2		Base		40 - 42 HRc
Corthal® 400	0,15	0,6	2	2,5		0,4					Base		38 - 42 HRc
Corthal® 440	0,25	0,4	1	12	2,3	1,5			1		Base		up to 480 HB
Corthal® 450	0,2	0,8	1	4,5		0,3			0,2		Base		42 - 45 HRc
Corthal® 476	0,25	0,7	0,5	16	4	1,5	1,5		1	1	Base		48 - 50 HRc
Corthal® 502	0,3	0,35	1	12,5		1,5	2		3	1	Base		48 - 51 HRc
Corthal® 580	0,35	0,8	2,5	5		1,5			0,4	1,2	Base		48 - 52 HRc
Corthal® 603	0,25	0,7	3	6		1,5			+	1,3	Base		46 - 48 HRc
Corthal® 600 TiC	1,8	0,5	1,4	7		1,4					Base	Ti 5	56 - 58 HRc
Corthal® 600	0,5	1	3	6,5		0,8			0,4		Base		53 - 56 HRc
Corthal® 601	0,5	1	3	6		1,6			1,5	1	Base		54 - 58 HRc
Corthal® 606	0,6	0,9	2,5	4,5							Base		55 - 57 HRc
Corthal® 609	0,5	2,7	0,6	9,5							Base		55 - 57 HRc
Corthal® 612	0,5	0,9	1,2	12,5		+					Base		54 - 56 HRc
Corthal® 622	0,65	0,6	2	5	0,6	1		3,3			Base		55 - 58 HRc
Corthal® 634	0,4	0,8	0,8	16	0,3	1			0,4		Base		48 - 50 HRc

TOOL STEELS

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® WZ 50	0,3	0,9	0,7	2,5					0,6	4,5	Base		48 - 50 HRc
Corthal® WZ 55	0,3	1,1	0,9	2,5		+	2		0,3	7	Base		53 - 56 HRc
Corthal® WZ 59	0,6	1,3	1	4		3,5				3,5	Base		57 - 59 HRc
Corthal® WZ 6356	0,03	1	0,4		18	4	12				Base	Ti +	ca. 35 HRc; hardened to 51 HRc



DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 10-200-CKNPZ	+		+++		+	austentic, work hardening, buffer layer, impact-proof, frogs, coarse crusher, crusher jaws, rolls, rails, beaters
T Fe 9-250-KNP	+		+++			
T Fe 9-250-KNP	+		+++			

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 1-300-P	+		+			cable rolls, shafts, wheels, build up welding
T Fe 7-45-PCT	++		++	++	++	continuous casting rolls
TZ Fe 8-50-PT	+++		++	+++		back up rolls, shafts
T Fe 7-40-CPT	++		++	++		continuous casting rolls
T Fe 1-40-P	++		++			auxiliary rolls, guilding rolls
T Fe 8-450-PCT	++		++	++		hot strip mill table rolls, pinch rolls
T Fe 2-45-PT	++		++			crane wheels, rails, guilding rolls
T Fe 7-50-PCT	+++		++	++		steel mill rolls
T Fe 8-50-PCT	++		++	++	++	hot hardening treatment, steel mill rolls
T Fe 8-50-PT	++		++	++		hot working tools, guilding rolls
T Fe 8-50-PT	++		++	+		blast furnace bells, sealing
T Fe 8-60-GP		++	+++			cement crusher rolls
T Fe 3-55-PT		+	++			dredging parts, gravel pumps, blowbars screws, crusher hammers, drive tumblers, road constructions, bucket teeth, rock processing and recycling
TZ Fe 6-60-PT		++	++			
T Fe 8-55-P		++	++			
T Fe 8-55-CP		+	++			
T Fe 8-55-CP		++	++		+	suction dredger, gravel pumps, valves
T Fe 6-60-PT	+++		++	+		blooming and slabbing mill rolls
T Fe 9-50-P		+	+		+	mixer paddles, corrosion resistant

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 3-50-ST	+		++	+		mandrel, upsetting die forging tools, hot shear blades
T Fe 3-55-ST	+		++	++		
T Fe 4-55-ST	+		++	++		hot and cold working tools
1.6356			++	++	++	Al-industry, Al-presser die casting

ABRASION RESISTANT

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® 42	1,8	0,9	1,2	28	3	0,8					Base		41 - 44 HRc
Corthal® 50	3	1,8	1,8	15							Base		50 - 54 HRc
Corthal® 55	4,8	1,3	0,2	28							Base	B+	55 - 59 HRc
Corthal® 55 Mo	5	1,7	0,3	27		1,3					Base		57 - 60 HRc
Corthal® 56	5,5	1	0,1	32							Base		60 - 64 HRc
Corthal® 59	5	1,5	0,2	32							Base		59 - 61 HRc
Corthal® 59L	3,7	1,2	0,2	32		+					Base		56 - 59 HRc
Corthal® 59XL	3,2	1,5	0,5	32	3,0	+					Base		53 - 55 HRC
Corthal® 60	5,4	1,1	0,3	22				7			Base		61 - 63 HRc
Corthal® 61	5,4	1,6	0,2	22				7			Base	B 1,0	62 - 65 HRc
Corthal® 62	5,5	1,2	0,1	27				3			Base		60 - 63 HRc
Corthal® 64	3,8	1,2	0,8	22					0,8	0,8	Base	B 1,0	62 - 64 HRc
Corthal® 65	5,2	1,2	0,1	21		7		7	1	2	Base		63 - 65 HRc
Corthal® 66	4	1,1	0,2	19		0,3		13	0,4		Base	B 1,5	67 - 69 HRc
Corthal® 67	5	1	0,2	22					10		Base		63 - 67 HRc
Corthal® 68	5	0,8	0,2	38							Base	B 2,0	66 - 68 HRc
Corthal® 69	5,2	0,7	0,1	32,5				5,5			Base	B 1,5	64 - 67 HRc
Corthal® 70	5,2	1,2	0,1	27					7		Base		62 - 64 HRc
Corthal® 72	5	1,2	0,1	22		3		9	1	2	Base	B 1,5	60 - 63 HRc
Corthal® 75	5,5	1,2	0,6	22,5		4		6,2	0,8	1,4	Base		62 - 64 HRc
Corthal® 78	5,5	1,3	0,2	16				6,5	6		Base	B 1,0	64 - 68 HRc
Corthal® 87	5,2	1,2	1	29				7			Base	B+	64 - 66 HRc

EROSION RESISTANT

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® 720	0,5	1,2	2		3				+		Base	B 4,8	64 - 68 HRc
Corthal® 721	2,5	0,7	2,0	12,0				5,0			Base	B 2,0	64 - 68 HRc
Corthal® 725N	<3,0	<3,0	<3,0	<30,0		<10,0		<10,0			Base	B <5,0	65 - 70 HRc
Corthal® 739	1			20,0		3,5				5,5	Base	B 4,5	64 - 68 HRc

CORROSION RESISTANT

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® 4009	0,12	0,8	1,2	13,5		0,5					Base		300 - 350 HB
Corthal® 4015	0,1	0,4	1,2	17							Base		220 - 240 HB
Corthal® 4028	0,3	0,9	1	13,5		0,5					Base		46 - 48 HRc
Corthal® 4115	0,2	0,5	0,8	17		1					Base		42 - 44 HRc
Corthal® 4122	0,35	0,5	1,2	17		1					Base		48 - 50 HRc
Corthal® 4351	0,05	0,9	1,1	14	5	0,75					Base		38 - 41 HRc
Corthal® 4370	0,06	0,6	6,5	19	8,5						Base		180 - 200 HB; work hardened 400 HB
Corthal® 4459	0,04	0,4	1	22	12	3					Base		180 - 200 HB
Corthal® 29/9	0,12	0,5	1,5	29	9						Base		210 - 230 HB

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 14-45-CGT		+	+	+	++	chemical industry, palm oil screws
TZ Fe 16-50-G		+	+			trash crushing, impact resistant
T Fe 15-60-GC		++				pumps, mixer parts, conveyer screws
T Fe 15-60 -G		++		+		crusher rolls, coal crusher cones, liners
T Fe 15-65-GC		++				wear plates
T Fe 14-60-GC		++				pumps, impeller screws, track hoppers
T Fe 14-60-CGT		++	+		+	palm oil screws, conveyer screws
T Fe 14-60-CGT		++	+		++	mixer blades, agitators, kneaders
T Fe 15-60-G		++				steel, soal, cement and mineral industry
T Fe 15-65-G		+++				fan blades, excavator scoops, bucket lips
T Fe 15-60-G		++				wear plates, pelletizer, roller-mill table
T Fe 16-65-GZ		++		+		cement, mineral and brick industry
T Fe 16-65-GZ		+++		+++		parts in screening units
T Fe 16-70-G		+++		++		bell and chutes, high heat and abrasion resistant
T Fe 16-65-GZ		+++	+	+		cement and concrete pumps, slurry pumps
T Fe 15-70-CGZ		+++		+++	+	coe oven screens, pulverizer hammers
T Fe 15-65-GCZ		+++		++	+	concrete industry, mixer parts, scrapers
T Fe 16-65-G		+++	+			grinding plant parts, cone crusher
T Fe 16-65GZ		+++		++		crusher plant parts, sinter wheel breakers
T Fe 16-65-GZ		+++		+++		slag conveyer screws, hot sinter breaker
T Fe 16-70-GZ		+++		+		mining and clinker industry, concrete pumps
T Fe 15-65-CG		+++			+	ore dressing tools, rubber mixing blades

DIN EN 14700	Suitability				Typical Applications
	Erosion	Impact	Temperature	Corrosion	
T Fe 13-70-G	++				wire for welding in one layer
T Z Fe 15-70-G	+++				mixer parts, concrete pumps, screw conveyors
T Z 70 - G	+++		+++		excavation, sand and gravel industry
T Z Fe 16-65	+++		+++		parts with high abrasion and erosion stress

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 8-AWS 410	++		++	+	+	bridge bearings, sealing surfaces, corrosion, slide ring sealing, roller bearings, centrifuge, valves, continuous casting rolls
T Fe 8-AWS 430	++		++	+	++	
T Fe 8-AWS 420	++		++	+	+	
T Fe 8-1.4115	++		++	++	++	
T Fe 8-1.4122	++		++	++	++	
AWS 410 NiMo	++		++	++	++	
T Fe 10-1.4370	+		+++		+	
AWS 309Mo	+		++	++	++	
~1.4337	+		++		++	

TUNGSTEN CARBIDE WIRES

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® WSC-DUR Fe	steel-matrix with inserted tungsten-carbides (52 - 58 %)												65 - 67 HRc; Carbide ca. 2400 HV 0.4
Thaloy® WSC-DUR Ni	NiBSi-matrix with inserted tungsten-carbides (52 - 68 %)												54 - 56 HRc; Carbide ca. 2400 HV 0.4

NICKEL BASE

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Thaloy® C	0,1			16	Base	17				5,0	< 5		200 - 240 HB, work hardened 400 HB
Thaloy® Co	0,1	0,3	0,4	16	Base	16	2,5		0,35	4,5	< 5		200 - 260 HB, work hardened 420 HB
Thaloy® 520	0,05			19	Base	5	11		0,3	5		Ti, Al	32 - 35 HRc, work hardened 35 - 45 HRc
Thaloy® 625	0,05	0,5	2,5	19	Base	9		3,5			< 5		Z750; D30%
Thaloy® SE 21/35	0,4	4,5		20	Base						< 5	B 0,7	33 - 36 HRc
Thaloy® SE 6/40	0,35	4,5		22	Base	2				2	< 5	B 1,6	41 - 43 HRc
Thaloy® SE 12/45	0,4	5,5	0,4	25	Base					2	< 5	B 1,7	45 - 48 HRc
Thaloy® SE 1/58	0,75	4,2		13,5	Base						< 5	B 3,0	55 - 60 HRc

COBALT BASE

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Thalit® 6	1,1	1	0,6	28			Base			4,5	< 3		40 - 43 HRc
Thalit® 12	1,4	0,8	0,1	29			Base			8	< 3		45 - 48 HRc
Thalit® 21	0,25	0,8	0,3	27	2,5	5,5	Base				< 3		30 - 35 HRc; work hardened 45 HRc
Thalit® 25	0,02	0,5	0,5	20	10		Base			15	< 3		200 - 220 HB

COPPER BASE

Product	C	Al	Ni	Mn	Fe	Si	Cu	DIN EN 14700
Thalbronze CuAl8		8 - 9	0,4 - 0,6	0,4 - 0,6	0,5 - 0,6		Base	T Cu 1
Thalbronze Cu-Al8Ni2		8 - 10	1,5 - 3,0	1,5 - 3,0	1,0 - 3,0	+	Base	T Cu 1
Thalbronze Cu-Al8Ni5		8,5 - 9,5	4,5 - 5,0	0,8 - 1,2	1,5 - 2,5		Base	T Cu 1
Thalbronze Cu-Al8Ni6		7,5 - 8,5	5,5 - 6,0	0,8 - 1,2	1,5 - 2,0	+	Base	T Cu 1
Thalbronze 115	<0,01	11,0	4,5	1,0	<2,0		Base	T Cu 1-300-CN

SPECIAL ALLOYS

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® SER	< 0,1	4,3	4,5	18	9	5,5		1			Base		ca. 41 HRc
Corthal® 35	< 0,1	1,3	1	29							Base	B 3,0	38 - 42 HRc

CAST WELDING

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other	Hardness
Corthal® NiFe 36			3		36						Base		140 - 160 HB
Thaloy® NiFe 60/40			4		Base						38	Cu +	160 - 190 HB

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 20-65-GZ		+++				mineral wear, deep-well drilling plant, auger
T Ni 20-55-CGTZ		+++			++	highest abrasion resistance, dredger cutter

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Ni 2-200-CKNPTZ	++		++	++	++	hot forging die, forging plant parts, hot shear blades, forging counter die, hot forging hammers
T Ni 2-250-CKNPTZ	++		++	++	++	
T Ni 2-40-CKPTZ	++		++	++	++	
~2.4621	++		++	++	++	chemical industry, furnace parts
T Ni 1-35-CTZ				+++	++	fittings, chemical industry, food industry, nuclear industry, extrusion screws
T Ni 1-45-CTZ				++	++	
T Ni 1-50-CTZ				++	++	
T Ni 1-60-CGTZ		++		+	+	

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Co2-45-CTZ	++		++	+++	++	armatures, bearing- and sliding surfaces, hot shear blades, chemical industry
T-Co2-50-CTZ	++		++	+++	++	
T-Co1-350-CKTZ	++		++	+++	++	
T-Co-250-CPTZ	+		+++	+++	++	for high corrosion an temperature resistance, continuous casting rolls

Suitability					Typical Applications
Friction		Impact	Temper-ature	Corrosion	
Metal/ Metal	Mineral				
++			+	+	for gas metal-arc brazing
++			+	+	for repair welding at copper alloys with the same composition, also suitable for gas metal-arc brazing
++			+	+	
++			+	+	for brazing of higher strength plate types
++			+	+	abrasion resistant hard bronze alloy

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
T Fe 11	++		++	++	++	slide ways, sealing surfaces
special alloy		++			+++	high corrosion resistance, stellite substitute

DIN EN 14700	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
~1.3912			+		+	cast iron wire for welding GGG.
NiFe-Ci			+		+	centrifugal cast iron, tempered cast iron

Thermal Spraying

NICKEL BASE

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other
Thaloy® NiAl 80-20Sp					Base							Al 20
Thaloy® NiAl 85-15 Sp					Base							Al 15
Thaloy® NiAl 90-10 Sp					Base							Al 10
Thaloy® NiAl 95-5 Sp					Base							Al 5
Thaloy® NiMoAl 90-5-5 Sp					Base	5						Al 5
Thaloy® NiCr 80-20 Sp				20	Base							
Thaloy® NiCr 50-50 Sp				50	Base							
Thaloy® NiCr 40-60 Sp				57	Base							
Thaloy® NiCrFe Sp				15	Base						23	
Thaloy® NiCrMo Sp				21	Base	9		3				
Thaloy® CrC Sp	4,3			31,5	Base	9						
Thaloy® NiCrBSi Sp	0,8	4,2	0,1	14,2	Base						4,7	B 3
Thaloy® SM1260 Sp	0,8	4,2		16,5	Base						4	B 3
Thaloy® Ni-WSC Sp					Base					50 % WSC		B 1,2
Thaloy® NiCrBSi+WSC Sp	1,1	4,2		13	Base					15 % WSC		B 3

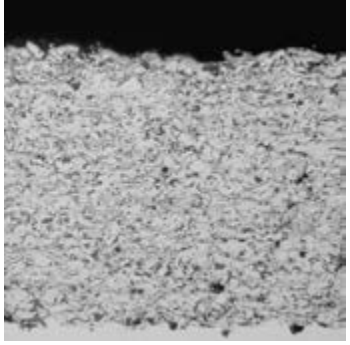
IRON BASE

Product	C	Si	Mn	Cr	Ni	Mo	Co	Nb	V	W	Fe	Other
Corthal® 35 Sp		1,9	0,6	28,7							Base	B 3
Corthal® 42 Sp	2	1	1,3	29,5	3	0,8					Base	
Corthal® 55 Sp	5	0,7	0,3	27							Base	B 0,5
Corthal® 60 Sp	4,6	1,7	0,2	22,8				5,9			Base	B 0,6
Corthal® 65 Sp	6	1	0,4	21		6		6,7	0,7	1,7	Base	B 0,4
Corthal® CRB Sp	0,5	0,8	1,4	31							Base	B 2
Corthal® 300HC Sp	1,1	0,8	2	2,4		0,25					Base	
Corthal® 900 Sp		0,9	6	19	8,5	2					Base	Co 2
Corthal® 4001 Sp	0,1	1	1	16							Base	
Corthal® 4122 Sp	0,39	1,5	0,8	18		1					Base	
Corthal® X40Cr13 Sp	0,5	0,5	0,6	14,5							Base	
Corthal® NiFe Sp		1	3		36						Base	
Corthal® FeCrAl Sp		0,4		22							Base	Al 6
Corthal® Fe-WSC	0,5	+	+	2							Base	50% WSC
Corthal® 35 Sp-T		1,6	1,6	29							Base	B 3,8
Corthal® FeAl 80-20 Sp											Base	Al 20

COPPER BASE

Product	C	Si	Mn	Cr	Ni	Mo	Cu	Nb	V	W	Fe	Other
Corthal® CuAl9Fe1 Sp							Base				1	Al 9
Corthal® CuAl8Ni6 Sp			1		6		Base				1,8	Al 8
Corthal® Cu Sp							Base					



DIN EN 14919	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
6.6-(1,6)-4				+		bond coat, oxidation resistant
6-(1,6)-4				+		bond coat, oxidation resistant
6-(1,6)-4				+		bond coat, oxidation resistant
6.5-(1,6)-4				+		bond coat, oxidation resistant
6.7-(1,6)-4			++	+		self-adhesive spraying material with good impact resistance
6.4-(1,6)-4				++	++	bond coat for ceramic cover coatings, oxidation- and corrosion resistant at high temperatures
6-(1,6)-4				+	++	Sulfur resistant up to 650 ° C
6-(1,6)-4				+	++	high oxidation resistance against high temperature corrosion
6.3-(1,6)-4				+	+	self-adhesive sprayed coatings on high alloyed steels
6.11-(1,6)-4				+	++	similar to alloy 625, excellent seawater resistance, high oxidation and corrosion resistance
6-(1,6)-4		++			++	wear resistant alloy with good corrosion resistance
6.10-(1,6)-4		++			++	wear resistant and corrosion resistant protective coatings
6-(1,6)-4		++			++	wear resistant and corrosion resistant protective coatings
6-(1,6)-4		+++			++	protection against extreme abrasion, corrosion resistant
6-(1,6)-4		+++			++	protection against strong abrasion, corrosion resistant

DIN EN 14919	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
5-(1,6)-4		++			+++	abrasion- and corrosion resistant ductile spray coatings with low frictional coefficient
5-(1,6)-4		+		+	+	good corrosion resistance, for low abrasion attack
5-(1,6)-4		++				excellent abrasion resistance with moderate corrosion resistance
5-(1,6)-4		++				very high resistance against mineral wear and friction
5-(1,6)-4		+++		+++		very high wear resistance and warm hardness
5-(1,6)-4		+			++	good corrosion resistance, for low abrasion attack
5-(1,6)-4	++			+		hard and good wear resistant coatings
5-(1,6)-4				++	++	very good corrosion- and cavitation resistant
5-(1,6)-4	++				++	hard and corrosion resistant coatings
5-(1,6)-4	++			++	++	hard and corrosion resistant coatings
5-(1,6)-4	++					hard and corrosion resistant coatings
5-(1,6)-4					+	very low thermal expansion coefficient
5-(1,6)-4				++	++	oxidation resistance at temperatures up to 900°C, high corrosion resistance
5-(1,6)-4	+++					high abrasion resistance when low corrosion attack
5-(1,6)-4		++			+++	abrasion- and corrosion resistant ductile spray coatings with low frictional coefficient
5-(1,6)-4				++		high oxidation resistance

DIN EN 14919	Suitability					Typical Applications
	Friction		Impact	Temper-ature	Corrosion	
	Metal/ Metal	Mineral				
4.7-(1,6)-4	++				+	compact wear resistant alloy
4.7-(1,6)-4	++				+	good erosion resistance
4.1-(1,6)-4					+	decoration

Forms of Packaging and Delivery

Diameter [mm]	1,2	1,6	2,0	2,4	2,8	3,2	4,0
SD 300 K		15 kg					
SH 390 K		15 kg					
B/BS 300			15 kg				
F 150				150 kg			
F 250/F 300				250-300 kg			
B415					22 kg		
B450					25 kg		
S 760						250 kg	

RECOMMENDATION OF SHIELDING GAS ACCORDING TO DIN EN 439

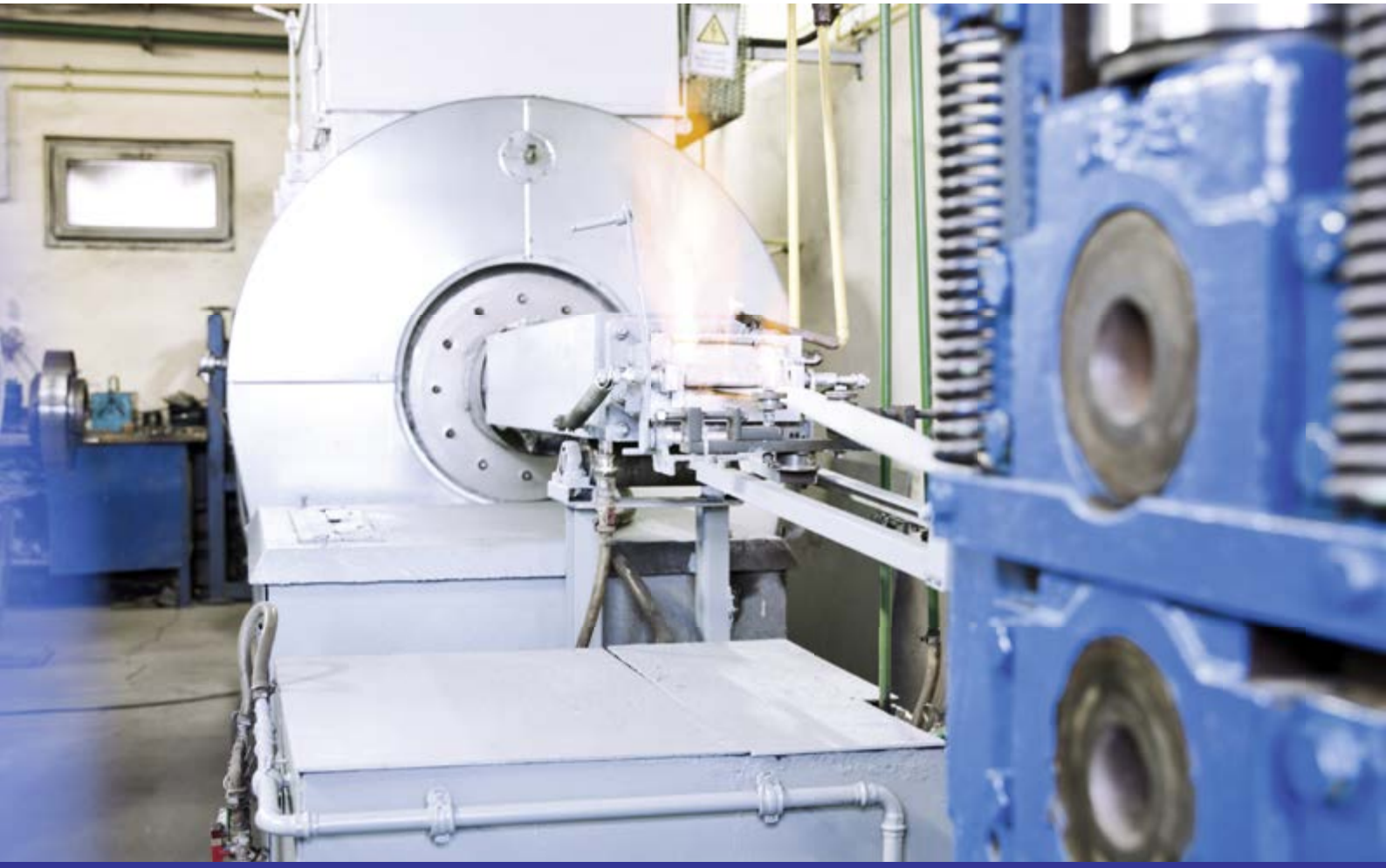
Corthal®	M21 , M23 , M13
Thaloy®	I1
Thalit®	I1 , M13

RECOMMENDATION OF FLUX

Corthal® / Thaloy®:	Corthal® Flux KJF 915

Alloy Base	Product Name	Welding Process	Diameter
Iron	Corthal®	OA	1,2 - 3,2 mm
		G	1,2 - 3,2 mm
		SA	2,4 - 4,0 mm
		Sp	1,6 - 2,4 mm
Nickel	Thaloy®	G	1,2 - 2,8 mm
		SA (only Thaloy® C and Co)	2,4 - 3,2 mm
		Sp	1,6 - 2,4 mm
Cobalt	Thalit®	G	1,2 - 1,6 mm
Copper	Thalbronze	MSG - Soldering	1,6 - 2,0 mm
		Sp	1,6 - 2,4 mm

Sintered Strip Electrodes



ADVANTAGES AND UNIQUE FEATURE

Sintered strip electrodes are welding consumables for RES and UP application welding, which are produced on a powder metallurgical base. Under high pressure metal powder is compressed between a pair of rolls to form a cohesive strip, which is sintered in a further process step.

Compared to conventional solid strip electrodes a lower melting-off energy is required due to the strip structure.

APPLICATION

For plating as corrosion protection in the chemical and petroleum industry.

DELIVERY FORMS

Printed values are the result of standard analyses on the pure weld metal. Technical modifications reserved. We also produce special-purpose alloys in accordance with your specifications.

Available dimensions:
60 x 0,6 mm (coil weight: max. 65 kg)
30 x 0,6 mm (coil weight: max. 32 kg)




CORROSION RESISTANT

Product	C	Cr	Ni	Mo	Mn	Si	Nb	N
Corosint Fe 308 L	0,010	20,0	10,5	< 0,2	1,8	0,4		+
Corosint Fe 309 L	0,010	23,0	12,0	0,2	1,8	0,4		+
Corosint Fe 309 MoL	0,015	22,0	14,0	2,9	1,8	0,3		+
Corosint Fe 309 LNb	0,015	24,0	12,0		1,8	0,6	0,6	0,03
Corosint Fe 316 L	0,010	18,0	13,0	2,7	1,5	0,3		
Corosint Fe X 15 CrNiMn 32 27 8	0,140	32,0	27,0		7,5	0,3		+

ABRASION RESISTANT

Product	C	Cr	Ni	Mo	Mn	Other
Corosint Fe 1.4370	0,06	18,0	8,0		6,0	Si 0,5
Corosint Fe 1.4351 RES	0,10	15,0	4,3	0,90	0,9	Si 0,34
Corosint Fe 581	0,35	6,0		3,00	2,0	Si 0,3 V 0,3
Corosint Fe 601	0,31	7,0	0,3	1,60	3,0	W 1,9 V 0,2
Corosint Fe X 38 CrMo 13/1	0,38	13,6	0,4	0,15	1,0	Si 0,2

NICKEL BASE

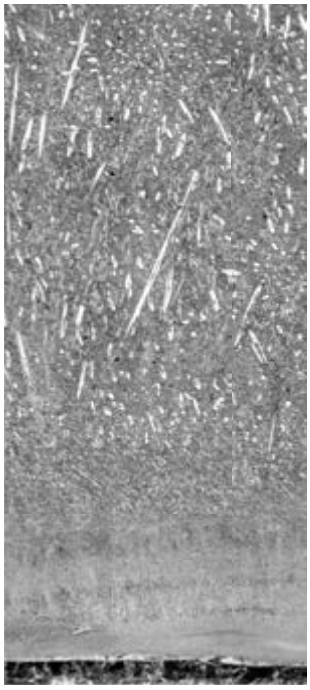
Product	C	Cr	Ni	Mo	Mn	Other
Corosint Ni 276	0,01	15,8	Base	16,6	0,5	Nb 0,1 W 3,7 Fe 4,5
Corosint Ni 625	0,01	23,0	Base	9,0	0,2	Nb 3,5 Fe < 5,0

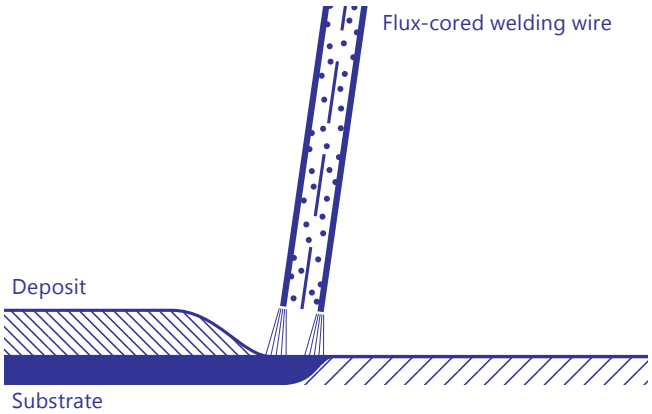
COBALT BASE

Product	C	Cr	Co	W	Mo	Si	Mn	Fe	Hardness HRc
Corosint Co 6	1,10	28	Base	4,5		1,0	0,6	< 2,5	40 - 43
Corosint Co 6 LC	0,80	28	Base	4,3		1,0	0,6	< 2,5	36 - 39
Corosint Co 21	0,25	27	Base		5,5	1,0	0,5	< 2,5	30 - 35

Production of Wear Plates

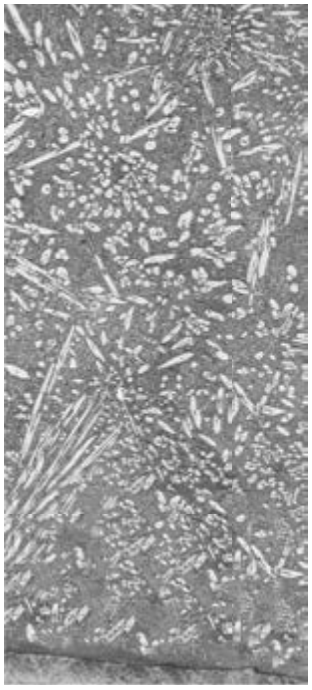
COROPLATE®

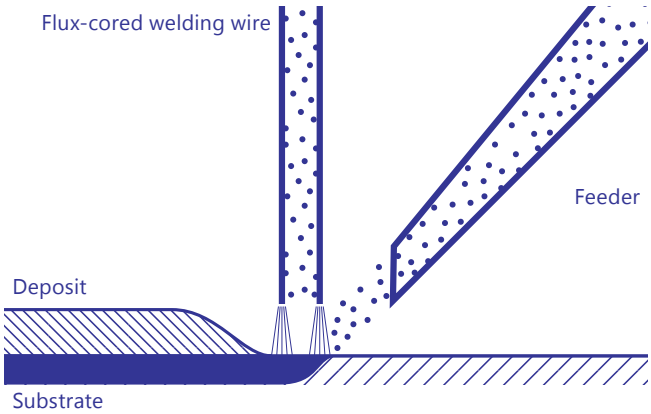




- High Fe-C-Cr alloyed surfacing (alloyed with special carbides if required)
- Low welding parameters possible, since high current density at the filler wire
- Homogenous and reproducible overlay
- Disadvantage: lower primary carbide content because of dilution

COROPLATE® π





- High Fe-C-Cr alloyed surfacing (alloyed with special carbides if required) + alloy powder, specially dosed
- Slightly higher welding parameters possible
- Lower dilution with base material due to cooling effects of additional alloying powder
- High content of primary carbides throughout the entire cross-section of the fusion zone
- Good connection with substrate material due to good controllable melting bath.




TYPICAL DIMENSIONS

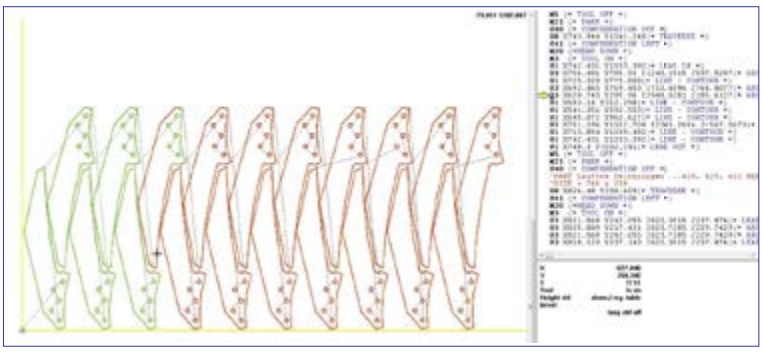
Size	Dimension of Plates	Coating Area	Standard Thicknesses [mm]	
Small	2000 x 1000 mm	1900x900 mm	Sheet min.	2
			Deposit min.	2
			Deposit max.	15
Medium	2500 x 1250 mm	2350 x 1100 mm	Sheet min.	3
			Deposit min.	2
			Deposit max.	15
Large	3000 x 1500 mm	2850 x 1350 mm	Sheet min.	5
			Deposit min.	3
			Deposit max.	15
Super	3000 x 2000 mm	2850 x 1850 mm	Sheet min.	5
			Deposit min.	3
			Deposit max.	15

STANDARD MATERIALS

Substrate Material	Flux-cored Wires	Alloy	PTA-Powder
S235 JRG2	Corthal® 55	Fe-C-Cr-B	Thaloy® WSC-DUR 60/40 (NiBSi +60%WSC)
S355 J2G3	Corthal® 56	Fe-C-Cr-B	
16Mo3/15Mo3	Corthal® 143	Fe-C-Cr-Nb-B	
13CrMo4-5	Corthal® 60	Fe-C-Cr-Nb	
13CrMo4-4	Corthal® 61	Fe-C-Cr-Nb-B	
	Corthal® 65	Fe-C-Cr-Nb-Mo-V-W	

CUSTOMIZED MANUFACTURING

- Production according to customer's drawing
- Prefabricated blanks with deformations and fastening elements
- Complete wear plate construction

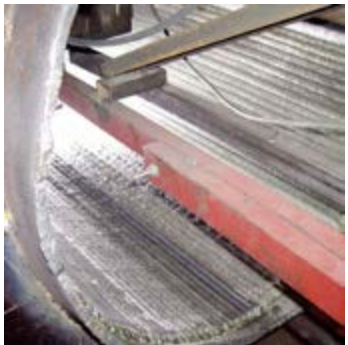


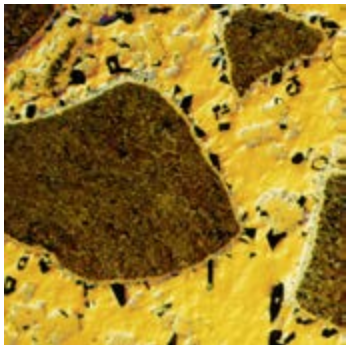
PTA-cladding

ADVANTAGES

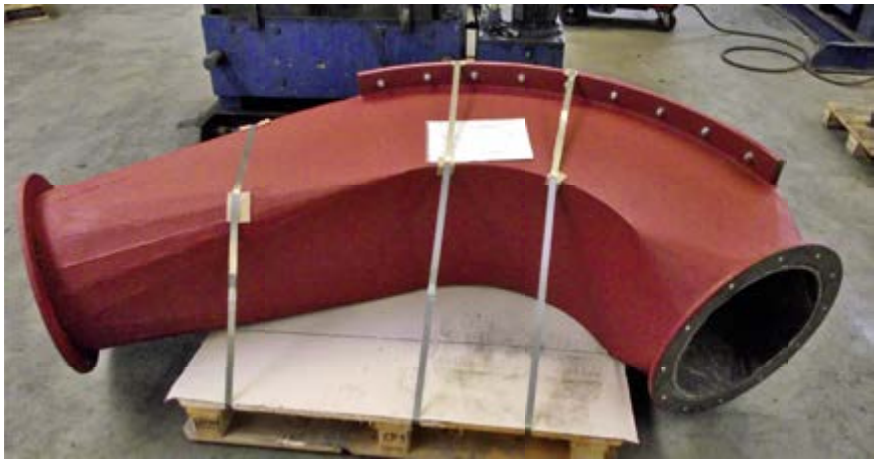
- Low dilution with base material
- High deposition rate
- Processing of alloys, which do not exist as flux-cored wire
- Processing of pseudo-alloys
- High reproducibility and quality
- Hard materials (WSC) do not dissolve

- High-performance cladding of flat and axially symmetric parts with tungsten carbide-reinforced nickel base alloys or cobalt base alloys.
- Application of robust PTA-torches with power range between 200-600 A for adapted cladding requirements and high melting deposition rates with definite weld penetration.
- Beside application of automated, flexible systems for large-area claddings manual PTA-systems are used for small surfacing tasks.





INNER TUBE COATINGS AND WEAR PLATE CONSTRUCTIONS



TYPICAL WEAR PROTECTION APPLICATIONS IN DIFFERENT BRANCHES

METALLURGY

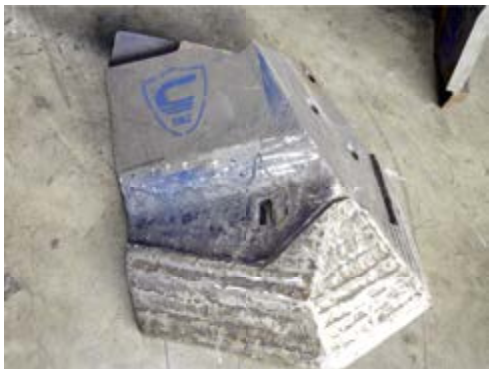

Sinter breaker


Roll


Hopper chute

MINING

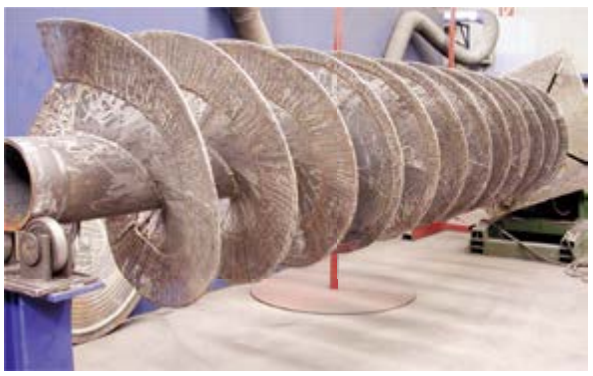

Excavator teeth


Cutting edge


Bucket wheel

CEMENT INDUSTRY


Cement crusher roll


Clinker screw


Fan

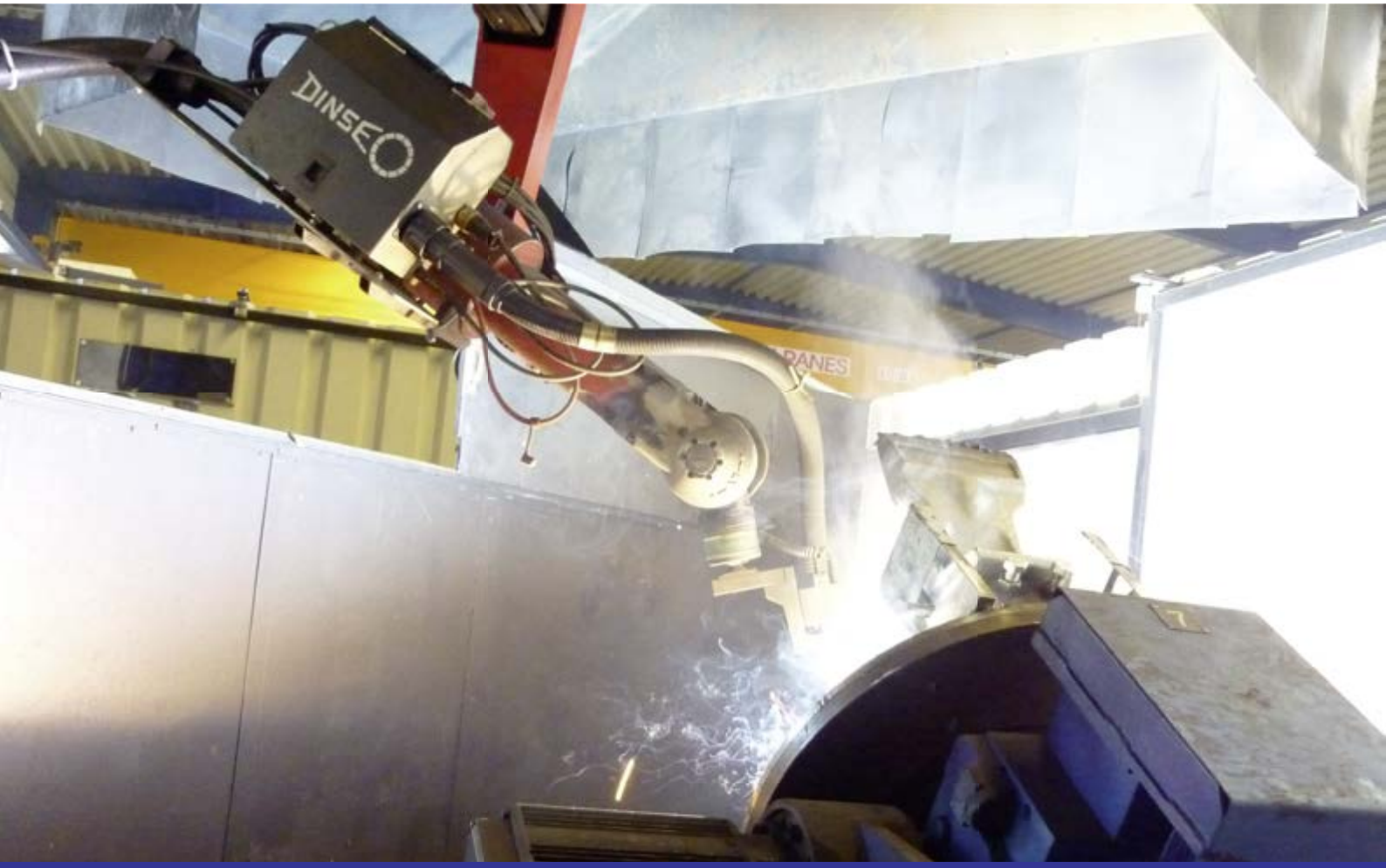
POWER PLANTS


Grinding roller


Grinding bowl


Coal dust distributor

Services

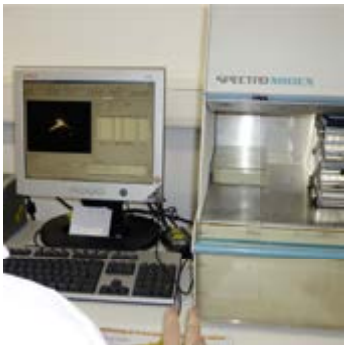


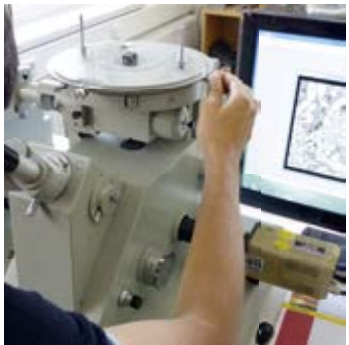
OUR SERVICE – AS DIVERSE AS YOUR NEEDS

- Application of welding procedures SA, OA, G and PTA
- Robot-assisted serial production
- Hardfacing in new production and repair
- CNC and conventional turning and milling
- Complete repair of wear components

Quality Assurance, Research and Development

- Permanent monitoring of all raw materials and finished products by in-house test-laboratory we guarantee a continuous high product quality level.
- Our modern stationary and mobile test technique is Base for assurance of our high quality standard.
- For development of new surfacing materials and whose optimizing we possess comprehensive equipments for texture examinations and wear test facilities.
- The solution of custom-designed wear problems by material development and process adaptation is focus of our research work and take place in cooperation with our customers.





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