Materiali Werkstoffmaterialien Matériaux Materiales Материалы

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
P1	**< 500 N/mm²** Free cutting steel and structural steel Acciai automatici e acciai strutturali Automatenstähle und Baustähle Aciers pour décolletage et aciers structurels Aceros de fácil mecanización y aceros de construcción Автоматные и конструкционные стали	AVP	1213	1.0715	9 SMn 28	230 M 07
			12 L 13	1.0718	9 SMnPb 28	
			1108	1.0721	10 S 20	210 M 15
			11 L 08	1.0722	10 SPb 20	
				1.0723	15 S 20	210 A 15
			1140	1.0726	35 S 20	212 M 36
			1146	1.0727	46 S 20	212 M 44
		AVZ	1215	1.0736	9 SMn 36	240 M 07
			12 L 14	1.0737	9 SMnPb 36	
				1.0037	St 37-2	
		PR80	A29	1.0765	36 SMnPb 14	
			A 573 Gr. 58	1.0116	St 37-3	4360-40 C
			A 573 Gr. 70	1.0144	St 44-3 N	4360-43 C
			1010	1.0301	C 10	045 M 10
			1015	1.0401	C 15	080 M 15
			1023	1.0402	C 22	050 A 20
				1.0570	St 52-3	4360-50 C
			1015	1.1141	Ck 15	080 M 15
			1025	1.1158	Ck 25	060 A 25
P2	**500-700 N/mm²** Carbon steel and low alloy steel Acciai al carbonio e acciai basso legati Kohlenstoff-Stähle und niedriglegierte Stähle Aciers au carbone et aciers faiblement alliés Aceros al carbono y aceros de baja aleación Углеродистые и низколегированные стали			1.2162	21 MnCr 5	
			A 204 Gr. A	1.5415	15 Mo 3	1501-240
			4520	1.5423	16 Mo 5	1503-245-420
			3310, 9314	1.5752	14 NiCr 14	655 M 13
			4320	1.5919	15 CrNi 6	S 107
				1.6587	18 CrNiMo 7 6	820 A 16
			5115	1.7131	16 MnCr 5	527 M 17
				1.7139	16 MnCrS 5	
			5120	1.7147	20 MnCr 5	
			5120 H	1.7149	20 MnCrS 5	
			A 182-F11, F12	1.7335	13 CrMo 4 4	1501-620 Gr. 27
			A 387 Gr. 12 Cl. 2	1.7337	16 CrMo 4 4	1501-620 Gr. 27
			A 182-F22	1.7380	10 CrMo 9 10	1501-622 Gr. 31
			1035	1.0501	C 35	060 A 35
			1045	1.0503	C 45	80 M 46
			1040	1.0511	C 40	080 M 40
			1055	1.0535	St 70-2	
			1060	1.0601	C 60	080 A 62
			1039	1.1157	40 Mn 4	150 M 36
			1330	1.1165	30 Mn 5	120 M 36
			1335	1.1167	36 Mn 5	150 M 36
			1035	1.1181	Ck 35	080 M 36
			1045	1.1191	Ck 45	080 M 46
			1064	1.1221	Ck 60	080 A 62
			1060	1.1740	C 60 W	
P3	**600-800 N/mm²** Medium alloy steel and heat treated steel Acciai medio legati e acciai di bonifica Mittellegierte Stähle und Vergütungsstähle Aciers moyennement alliés et aciers trempés et recuits Aceros de media aleación y aceros bonificados Среднелегированные и отожженные стали		9255	1.0904	55 Si 7	250 A 53
			4142, 4140	1.1201	42 CrMo 4	708 M 40
			4142, 4140	1.7225	42 CrMo 4	708 M 40
			4135	1.2330	35 CrMo 4	708 A 37
			S1	1.2542	45 WCrV 7	BS 1
			L6	1.2714	56 NiCrMoV 7	BH 224-5
			5045	1.5121	46 MnSi 4	
			3135	1.5710	36 NiCr 6	640 A 35
			3435	1.5736	36 NiCr 10	
			9840	1.6511	36 CrNiMo 4	816 M 40
			4340	1.6582	34 CrNiMo 6	817 M 40
			5132	1.7033	34 Cr 4	530 A 32
			5140	1.7035	41 Cr 4	530 M 40
			4130	1.7218	25 CrMo 4	708 M 25
				1.7361	32 CrMo 12	722 M 24
			6150	1.8159	50 CrV 4	735 A 50
			A 355 Cl. A	1.8509	41 CrAlMo 7	905 M 39

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SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
1912	S 250	11SMn28	SUM 22	CF 9 SMn 28	11 SMn30	G12130	
1914	S 250 Pb	11SMnPb28	SUM 22 L	CF 9 SMnPb 28	11 SMnPb30	G12134	
	10 F 1			CF 10 S 20	10 S 20		
	10 PbF 2	10 SPb 20		CF 10 SPb 20			
1922		F.210.F	SUM 32		15 SMn13		
1957	35 MF 4	F.210.G			35 S20	G11400	40
1973	45 MF 4				46 S20	G11460	
	S 300	12 SMn 35		CF 9 SMn 36	11 SMn37	G12150	
1926	S 300 Pb	F.2114-12		CF 9 SMnPb 36	11 SMnPb 37	G12144	
1311	E 24-2		STKM 12 C	Fe 360 B	S235JR		16D
			Cf 35 SMnPb 10	36SMnPb14			
1312, 1313	E 24-3, E 24-4			Fe 360 D FF	S235JRG2		18kp
1412, 1414	E 28-3, E 28-4		SM 41 C	Fe 430 D FF	S275J2G3		St14kP
	AF 34 C 10, XC 10	F.110	S 10 C	C 10	C 10	G10100	10
1350	AF3 7 C 12, XC 18	F.111		C 15, C 16		G10170	15
1450	C 20	F.112		C 20, C 21	C22+N	G10200	20
2172, 2132	E 36-3, E 36-4		SM 50 YA	Fe 510 B	S355JR		17G1S
1370	XC 15, XC 18	F.1511	S 15 C, S 15 CK	C 15, C 16	C 15R	G10170	15
	XC 25	F.1120	S 25 C	C 25		G10250	25
	20 NC 5		SCR 420 H				
2912	15 D 3	16 Mo3		16 Mo 3	16 Mo 3		
			SB 450 M	16 Mo 5		G45200	
	12 NC 15		SNC 815 (H)		14 NiCr 14	G33106	20X2H4A
	16 NC 6			16 CrNi 4			
	18 NCD 6			18 NiCrMo 7	18 NiCrMo 7 6		
2511	16 MC 5	F.1516	SCR 415	16 MnCr 5	16 MnCr 5	G51170	12KHN2
					16 MnCrS 5		18HG
	20 MC 5		SMnC 420 (H)	20 MnCr 5	20 MnCr 5	G51200	20KH
	20 MnCrS 5		SMnC 21 H		20 MnCrS 5		20KH
2216	15 CD 3.5			14 CrMo 4 5	13 CrMo 4 5		12KHM
2216	15 CD 4.5			14 CrMo 4 5			
2218	10 CD 9.10			12 CrMo 9 10	10 CrMo 9 10	J21890	12KH8
1550	AF 55 C 35	F.113		C 35	C35+N	G10350	35
1650	AF 65 C 45	F.114	S 45 C	C 45	E 335	G10430	45
	AF 60 C 40	F.114.A	S 40 C	C 40	C40+N		40
1655	A 70-2			Fe 690	E 360		55
	CC 55			C 60	C60+N	G10600	60
	35 M 5					G10390	40G
			SMn 1 H, SCMn 2		G 28 Mn6	G13300	30G2
2120	40 M 5	F.411	SMn 438 (H), SCMn 3		G 28 Mn6+QT	G13350	35G2
1572	XC 38 H1	F.1130	S 35 C	C 35	C 35E	G10340	35
1672	XC 42	F.1140	S 45 C	C 45	C 45E	G10420	45
1665, 1678	XC 60	F.1150	S 58 C	C 60	C 60E	G10640	60
	Y3 55		SK 7				60
2085, 2090	55 S 7			55 Si 8	55 SiCr7		55S2
2244	42 CD 4		SCM 440 (H)	42 CrMo 4	42 CrMo 4	G41400	38HM
2244	42 CD 4	F.1252	SCM 440 (H)	42 CrMo 4	42 CrMo 4	G41400	38HM
2234	34 CD 4	F.1250		35 CrMo 4		T51620	35KHM
2710				45 WCrV 8 KU		T41901	5KHV2S
			SKT 4	56 NiCrMoV7-KU		T61206	5KHNV
	35 NC 6		SNC 236				
	35 NC 11		SNC 631 (H)	35 NiCr 9			
	40 NCD 3			38 NiCrMo 4 (KB)	36CrNiMo4+TA	G98400	
2541	35 NCD 6	F.1280	SNCM 447	35 NiCrMo 6 (KW)	34 CrNiMo 6		38H2N2MA
	32 C 4	35Cr4	SCr 430 (H)	34 Cr 4 (KB)	34 Cr 4	G51320	35KH
	42 C 4	42 Cr 4	SCr 440 (H)	41 Cr 4	41 Cr 4	G51400	40H
2225	25 CD 4 S	F.1251/55Cr3	SCM 425	25 CrMo 4 (KB)	25 CrMo 4	G41300	20KHM
2240	30 CD 12	F.124.A		32 CrMo 12			
2230	50 CV 4	F.143	SUP 10	51 CrV 4	50 CrV 4	H61500	50KHFA
2940	40 CAD 6.12	F.1740	SACM 645	41 CrAlMo 7	41 CrAlMo 7 10	K24065	

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INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
P4	**800-1000 N/mm²** High alloy steel Acciai alto legati Hochlegierte Stähle Aciers fortement alliés Aceros de alta aleación Высоколегированные стали		1070	1.1231	Ck 67	060 A 67
			1095	1.1274	Ck 101	060 A 96
			W1	1.1545	C 105 W1	
				1.1645	C 105 W2	
			W1	1.1663	C 125 W	
			L2	1.2210	115 CrV 3	
			O1	1.2510	100 MnCrW 4	BO 1
		K720	O2	1.2842	90 MnCrV 8	BO 2
		HARDOX HiTuf				
			52100	1.3505	100 Cr 6	534 A 99
		TOOLOX 33				
P5	**900-1200 N/mm²** Tool steel Acciai per utensili Werkzeugstähle Aciers pour outils Aceros para herramientas Инструментальные стали	K100	D3	1.2080	X 210 Cr 12	BD 3
		M310		1.2083	X 42 Cr 13	
		M201		1.2311	40 CrMnMo 7	
		M200-HOLDAX		1.2312	40 CrMnMoS 86	
				1.2316	X 36 CrMo 17	
		W300	H11	1.2343	X 38 CrMoV 5 1	BH 11
		W302	H13	1.2344	X 40 CrMoV 5 1	BH 13
			A2	1.2363	X 100 CrMoV 5 1	BA 2
		W320	H10	1.2365	X 32 CrMoV 3 3	BH 10
		K110		1.2379	X 155 CrVMo 12 1	
				1.2436	X 210 CrW 12	
				1.2601	X 165 CrMoV 12	
			L6	1.2713	55 NiCrMoV 6	
		W500		1.2714	56 NiCrMoV 7	
		M238		1.2738	40 CrMnNiMo8 6 4	
			M35	1.3243	S 6-5-2-5	
			M42	1.3247	S 2-10-1-8	BM 42
			T4	1.3255	S 18-1-2-5	BT 4
		S600	M2	1.3343	S 6-5-2	BM 2
			M7	1.3348	S 2-9-2	
		TOOLOX 40				
			T1	1.3355	S 18-0-1	BT 1
		VANADIS 4				
		VANADIS 10				
P6	**1200-1600 N/mm²** High tensile strength steel Acciai ad alta resistenza HSLA-Stähle Aciers haute résistance Aceros de alta resistencia Высокопрочная сталь	TOOLOX 44				
		HARDOX 400				
		HARDOX 450				
		HARDOX 500				
		WELDOX 1100				
		CREUSABRO DUAL				
		CREUSABRO 8000				
		W720		1.6358	X 2 NiCrMo 18 9 5	
		MARAGING		1.2706	X 3 NiCrMo 18 8 5	

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SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
1770	XC 68	F.5103		C 70	C 67S	G10700	70
1870		F.5117	SUP 4		C 100S	G10950	
1880	Y1 105	F.5118		C 100 KU	C 105U		U10A
	Y1 105		SK 3	C 100 KU			U10
	Y2 120		SK 2	C 120 KU			U13
	100 C 3			107 CrV 3 KU	107 CrV 3	T61202	11KHF
2140	90 MWCV 5	F.5220	SKS 3	95 MnWCr 5 KU		T31501	9KHVG
	90 MV 8			90 MnVCr 8 KU	90 MnCrV 8	T31502	9G2F
2258	100 C 6	F.131	SUJ 2	100 Cr 6	100 Cr 6	G51986	SHKH15
	Z 200 C 12	F.5212	SKD 1	X 210 Cr 13 KU	X 210 Cr 12	T30403	KH12
				X 41 Cr 13 KU			
		F.5263					
		X210CrW12					
				X 38 CrMo 16 1 KU			
	Z 38 CDV 5		SKD 6	X 37 CrMoV 5 1 KU		T20811	4KH5MFS
2242	Z 40 CDV 5	F.5318	SKD 61	X 40 CrMo 5 1 1 KU	X 40 CrMoV 5 1	T20813	4KH5MF1S
2260	Z 100 CDV 5	F.5227	SKD 12	X 100 CrMoV 5 1 KU	X 100 CrMoV 5	T30102	9KH5VF
	32 DCV 28		SKD 7	30 CrMoV 12 27 KU		T20810	3KH3M3F
		F.520.A		X 155 CrMo 12 KU			
2312		F.5213	SKD 2	X 215 CrW 12 1 KU			KH12
2310		F.5211		X 165 CrMoW 12 KU			KH12MF
	55 NCDV 7	F.520.S	SKT 4			T61206	5KHNM
				56 NiCrMoV 7 KU			
2723	Z 85 WDKCV 06-05-05-04-02	F.5613	SKH 55	HS 6-5-2-5	HS 6-5-2-5		R6M5K5
	Z 110 DKCWV 09-08-04		SKH 51	HS 2-9-1-8	HS 2-10-1-8	T11342	R2AM9K5
	Z 80 WKCV 18-05-04-01		SKH 3	HS 18-1-1-5	HS 18-1-2-5	T12004	R18K5F2
2722	Z 85 WDCV 06-05-04-02	F.5603	SKH 9, SKH 51	HS 6-5-2	HS 6-5-2	T11302	R6M5
2782	Z 100 DCWV 09-04-02-02		SKH 58	HS 2-9-2	HS 2-9-2	T11307	
	Z 80 WCV 18-04-01		SKH 2	HS 18-0-1	HS 18-0-1	T12001	R18
						K93120	

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	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
M1	**400-700 N/mm²** Ferritic stainless steel Acciai inossidabili ferritici Ferritische Edelstähle Aciers inoxydables ferritiques Aceros inoxidables ferríticos Ферритные нержавеющие стали		405	1.4002	X 6 CrAl 13	405 S 17
			430	1.4016	X 6 Cr 17	430 S 15
			430 F	1.4104	X 12 CrMoS 17	
			434	1.4113	X 6 CrMo 17	434 S 17
			CA-6NM	1.4313	X 5 CrNi 13 4	425 C 11
			430 Ti	1.4510	X 6 CrTi 17	
			409	1.4512	X 5 CrTi 12	409 S 17
			446	1.4749	X 18 CrN 28	
M2	**500-750 N/mm²** Austenitic stainless steel (good machinability) Acciai inossidabili austenitici - buona lavorabilità Austenitische Edelstähle - gute Verarbeitbarkeit Aciers inoxydables austénitiques - bonne usinabilité Aceros inoxidables austeníticos - fácil mecanización Аустенитные нержавеющие стали (хорошая обрабатываемость)		303	1.4305	X 10 CrNiS 18 9	303 S 31
			302	1.4300	X 12 CrNi 18 8	302 S 25
			304, 304 H	1.4301	X 6 CrNi 18 10	304 S 31
			305	1.4303	X5 CrNi 18 12	305 S 19
			304 L	1.4306	X 2 CrNi 19 11	304 S 12
			301	1.4310	X 12 CrNi 17 7	301 S 21
			304	1.4350	X5 CrNi 18 9	304 S 31
			347	1.4550	X 6 CrNiNb 18 10	347 S 31
			304 LN	1.4311	X 2 CrNiN 19 11	304 S 62
M3	**550-850 N/mm²** Austenitic stainless steel (medium machinability) Acciai inossidabili austenitici - media lavorabilità Austenitische Edelstähle - mittlere Verarbeitbarkeit Aciers inoxydables austénitiques - moyenne usinabilité Aceros inoxidables austeníticos - maquinabilidad media Аустенитные нержавеющие стали (средняя обрабатываемость)		310 S	1.4335	X 12 CrNi 25 21	310 S 24
			316	1.4401	X 5 CrNiMo 17 12 2	316 S 31
			316 LN	1.4429	X 2 CrNiMoN 17 13 3	316 S 62
			316 L	1.4435	X 2 CrNiMo 18 14 3	316 S 12
			317 L	1.4438	X2 CrNiMo 18 16	317 S 12
			329	1.4460	X 4 CrNiMo 27 5 2	
		DUPLEX	F 51-329 A	1.4462	X 2 CrNiMoN 22 5	332 S 15
			317	1.4466	X 5 CrNi 18 15	317 S 16
			321	1.4541	X10 CrNiTi 18 9	321 S 12
			347	1.4550	X10 CrNiNb 18 9	347 S 17
			316 Ti	1.4571	X10 CrNiMoTi 18 10	320 S 17
			309	1.4828	X15 CrNiSi 20 12	309 S 24
			330	1.4864	X12 NiCrSi 36 16	
		253 MA		1.4893	X 9 CrNiSiNCe 21 11 2	310 S 31
		3RE60		1.4417	X 2 CrNiMoSi 19 5	
M4	**650-950 N/mm²** Martensitic stainless steel Acciai inossidabili martensitici Martensitische Edelstähle Aciers inoxydables martensitiques Aceros inoxidables martensíticos Мартенситные нержавеющие стали		403	1.4000	X 6 Cr 13	403 S 17
			416	1.4005	X 12 CrS 13	416 S 21
			410, CA-15	1.4006	X 10 Cr 13	410 S 21
			420	1.4021	X 20 Cr 13	420 S 37
			420F	1.4028	X 30 Cr 13	420 S 45
			420	1.4031	X 40 Cr 13	420 S 45
			431	1.4057	X 20 CrNi 17 2	
			440 A	1.4109	X 65 CrMo 14	
			440 B	1.4112	X 90 CrMoV 18	409 S 19
			440 C	1.4125	X 105 CrMo 17	
		SUPER DUPLEX	F 53-329 S1	1.4410	X 2 CrNiMoN 25 7 4	
		SUPER DUPLEX	F 55-329 S	1.4501	X 2 CrNiMoCuWN 15 7 4	
			904L	1.4539	X 2 NiCrMoCu 25 20 5	904 S 13
			329 A			
		254 SMO		1.4529	X 1 CrNiMoN 20 18 7	
		PH13-8Mo	XM-13	1.4534	X 3 CrNiMoAl 13 8 2	
		654 SMO		1.4652	X 2 CrNiMoN 25 22 7	
		Alloy 800		1.4876	X 10 NiCrAlTi 32 20	
M5	**800-1250 N/mm²** PH stainless steel Acciai inossidabili PH - indurenti per precipitazione Ausscheidungshärtbare Edelstähle Aciers inoxydables à durcissement par précipitation Aceros inoxidables PH Нержавеющие стали PH	15-5-PH	XM-12	1.4540	X 4 CrNiCuNb 16 4	
		17-4-PH	630	1.4542	X 5 CrNiNb 16 4	
		17-7-PH	631	1.4568	X 7 CrNiAl 17 7	301 S 81
		A286	660	1.4943	X 4 NiCrTi 25 15	HR 51

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SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
	Z 8 CA 12	F.3111	SUS 405	X 6 CrAl 13			
2320	Z 8 C 17	F.3113	SUS 430	X 8 Cr 17	X 6 Cr 17	S43000	12KH17
2383	Z 10 CF 17	F.3117	SUS 430 F	X 10 CrS 17			
2325	Z 8 CD 17.01		SUS 434	X 8 CrMo 17			
2385	Z 5 CN 13.4		SCS 5	X 6 CrNi 13 04	X 3 CrNIMo 13 3	J91540	
	Z 4 CT 17		SUS 430 LX	X 6 CrTi 17			
	Z 6 CT 12		SUH 409	X 5 CrTi 12			
2322	Z 18 C 25				X 18 CrN 28	S44600	15KH28
2346	Z 10 CNF 18.09	F.3508	SUS 303	X 10 CrNi 18 09	X 10 CrNiS 18 9	S30300	12KH19N9
2331	Z 12 CN 18		SUS 302		X 12 CrNi 18 8	S30200	12KH18N9
2333	Z 6 CN 18.09	F.3551	SUS 304	X 5 CrNi 18 11	X 5 CrNi 18 9	S30400	08KH18N10
	Z 8 CN 18.12		SUS 305	X 8 CrNi 19 10			
2352	Z 2 CN 18.10	F.3503	SUS 304 L	X 3 Cr Ni 18 11	X 2 CrNi 19 11	S30403	03KH18N11
(2331)	Z 12 CN 17.07	F.3517	SUS 301	X 12 CrNi 17 07	X 9 CrNi 18 8	S30100	07KH16N6
2333	Z 6 CN 18.09	F.3551	SUS 304	X 5 CrNi 18 10			
2338	Z 6 CNNb 18.10		SUS 347	X 6 CrNiNb 18 11	X 6 CrNiNb 18 10	S34700	08KH18N12B
2371	Z 2 CN 18 .10 Az		SUS 304 LN	X 2 CrNiN 18 11	X 2 CrNiN 18 10	S30453	03KH18N11
2361	Z 12 CN 25.20		SUH 310, SUS 310 S	X 6 CrNi 26 20	X 12 CrNi 25 21	S31008	12KH25N20
2347	Z 3 CND 17.11.1	F.3543	SUS 316	X 5 CrNiMo 17 12	X 5 CrNiMo 17 12 2	S31600	08KH17H13M2T
2375	Z 2 CND 17.13 Az		SUS 316 LN	X 2 CrNiMoN 17 13 3	X 2 CrNiMoN 17 13 3	S31653	03KH16N15M3
2353	Z 2 CND 17.13		SCS 16, SUS 316 L	X 2 CrNiMo 17 13 2	X 2 CrNiMo 18 14 3	S31603	03KH17N14M3
2367	Z 2 CND 19.15		SUS 317 L	X2CrNiMo18 16			
2324	Z 3 CND 25.7 Az	F.3309	SUS 329 J 1	X 3 CrNiMo 27 5 2	X 3 CrNiMo 27 5 2	S32900	
2377	Z 2 CND 22.05 Az			X 2 CrNiMoN 22 5	X 2 CrNiMoN 22 5 3	S31803	
2366			SUS 317	X 5 CrNi 18 15	X 3 CrNiMo 18 12 3	S31700	08KH17H15M3T
2337	Z 6 CND 18.10	F.3553	SUS 321	X6CrNiTi18 11			
2338	Z 6 CNNb 18.10	F.3552	SUS 347	X6CrNiNb18 11			
2350	Z 6 CNDT 17.12	F.3535	–	X6CrNiMoTi 17 12			
	Z 15 CN 24.13		SUS 309	X16 CrNi 24 14			
	Z 12 NCS 35.16		SUH 330				
2368					X 9 CrNiSiNCe 21 11 2	S30815	
2376	Z 2 CND 18.05.03				X 2 CrNiMoSi 19 5	S31500	
2301	Z 6 C 12	F.3110	SUS 403	X 6 Cr 13	X 6 Cr 13	S41008	08KH13
	Z 11 CF 13	F.3411	SUS 416	X 12 CrS 13			
2302	Z 10 C 13	F.3401	SUS 410	X 12 Cr 13	X 12 Cr 13	S41000	12KH13, 08KH13
2303	Z 20 C 13	F.3402	SUS 420 J1	X 20 Cr 13	X 20 Cr 13	S42000	20KH13
2304	Z 30 C 13	F.3403	SUS 420 J2	X 30 Cr 13			
2304	Z 40 C 14	F.3404	SUS 420	X 40 Cr 14	X 39 Cr 13	S40280	40KH13
2321	Z 15 CNi 16.02	F.3427	SUS 431	X 16 CrNi 16			
	Z 70 D 14		SUS 440 A		X 70 CrMo 15	S44002	
2327	Z 2 CND 18 05		SUS 440 B	X CrTi 12	X 90 CrMoV 18	S44003	95KH18
	Z 100 CD 17		SUS 440 C	X 105 CrMo 17	X 105 CrMo 17	S44004	95KH18
2328	Z 3 CND 25.07 Az			X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4	S32750	
				X 2 CrNiMoCuWN 15 7 4		S32760	
2562	Z 2 NCDU 25 20				X 2 NiCrMoCu 25 20 5	N08904	
2778	Z 1 CNDU 20.18.05 Az			X 1 CrNiMoN 20 18 7	X 1 CrNiMoN 20 18 7	S31254	
					X 6 NiCrTiMoV 25 15	S13800	
					X 1 CrNiMoN 25 22 8	S32654	
	Z 10 NC 32.21		NCF 800		X 10 NiCrAlTi 32 20	N08800	
	Z 4 CNUNb 16.4 M					S15500	
			SUS 630				
2388	Z 9 CAN 17.7		SUS 631	X 7 CrNiAl 17 7	X 3 CrNiMoAl 13 8 2	S17700	09KH17N7YU1
2570	Z 6 NCTDV 25.15		SUH 660		X 5 CrNiCuNb 16 4	S66286	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
K1	**150-250 HB** Grey cast iron Ghise grigie Grauguss Fonte grise Fundición gris Серый чугун		A48-20B	0.6010	GG-10	Grade 100
			A48 25 B	0.6015	GG-15	Grade 150
			A48 30 B	0.6020	GG-20	Grade 220
			G 3500		GG-220 HB	
			A48 35 B	0.6025	GG-25	Grade 260
			A48 45 B	0.6030	GG-30	Grade 300
			A48 50 B	0.6035	GG-35	Grade 350
			A48-60B	0.6040	GG-40	Grade 400
K2	**150-350 HB** Nodular cast iron Ghise sferoidali Sphäroguss Fonte nodulaire Fundición nodular Чугун с шаровидным графитом		Grade 350		GJV-300	
			Grade 400		GJV-350	
			Grade 400-15		GJV-400	
			Grade 450		GJV-450	
			Grade 500		GJV-500	
				0.7033	GGG-35.3	Grade 350/22
			60-40-18	0.7040	GGG-40	Grade 420/12
			60-40-18	0.7043	GGG-40.3	Grade 370/17
			A536 80-55-6	0.7050	GGG-50	Grade 500/7
			A476 80-60-03	0.7060	GGG-60	Grade 600/3
			A536 100-70-03	0.7070	GGG-70	Grade 700/2
K3	**120-260 HB** Austenitic cast iron Ghise austenitiche Austenitischer Guss Fonte austénitique Fundición austenítica Аустенитный чугун	(Tempered)	A220 60004		GTS-55-04	P 540/5
		Ni-Resist 2	A436 Type 2	0.6660	GGL-NiCr 20 2	Grade F2
		Ni-Resist 3	A436 Type 3	0.6676	GGL-NiCr 30 3	Grade F3
		Ni-Resist 1	A436 Type 1	0.6655	GGL-NiCuCr 15 6 2	Grade F1
		Ni-Resist D-5	A439 Type D-5	0.7683	GGG-Ni 35	
		Ni-Resist D-2	A436 Type D-2	0.7660	GGG-NiCr 20 2	Grade S2
		Ni-Resist D-3	A436 Type D-3	0.7676	GGG-NiCr 30 3	Grade S3
		Nodumag	–	0.7652	GGG-NiMn 13 7	Grade S6
		Ni-Resist D-2M	A439 Type D-2M	0.7673	GGG-NiMn 23 4	Grade S2M
K4	**250-500 HB** ADI cast iron Ghise ADI ADI Guss Fonte ADI Fundición ADI Отпущенный ковкий чугун	ADI 800	850/550/10		GJS-800-8	
		ADI 1000	1050/700/7		GJS-1000-5	
		ADI 1200	1200/850/4		GJS-1200-2	
		ADI 1400	1400/1100/1		GJS-1400-1	
		ADI 1600	1600/1300/-		GJS-1600-1	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
01 10-00			FC 100	G 10			Sc 10
01 15-00	Ft 15 D	FG 15	FC 150	G15	EN-GJL-150	F11601	Sc 15
01 20-00	Ft 20 D	FG 20	FC 200	G20	EN-GJL-200	F12101	Sc 20
02 19-00					EN-GJL-215		
01 25-00	Ft 25 D	FG 25	FC 250	G25	EN-GJL-250	F12401	Sc 25
01 30-00	Ft 30 D	FG 30	FC 300	G30	EN-GJL-300	F13101	Sc 30
01 35-00	Ft 35 D	FG 35	FC 350	G35	EN-GJL-350	F13502	Sc 35
0140-00	Ft 40 D		FC 40				
					EN-GJV-300		
					EN-GJV-350		
					EN-GJV-400		
					EN-GJV-450		
					EN-GJV-500		
07 17-15	FGS 370-17		FCD 350-22L		EN-GJS-350-22		
07 17-02	FGS 400-12	FGE 38-17	FCD 400-18L	GS 400-12	EN-GJS-400-15	F32800	Vc 42-12
07 17-12	FGS-370-17			GSO 42/17	EN-GJS-400-18	F32800	Vc 42-12
07 27-02	FGS 500-7	FGE 50-7	FCD 500-7	GS 500-7	EN-GJS-500-7	F33800	Vc 50-2
07 32-03	FGS 600-3	FGE 60-2	FCD 600-3	GS 600-3	EN-GJS-600-3	F34100	Vc 60-2
07 37-01	FGS 700-2	FGS 70-2	FCD 700-2	GS 700-2	EN-GJS-700-2	F34800	Vc 70-2
08 54-00	P 540/5		PCMP55-04	P 55-04	EN-GJMB-550-4	F24130	
05 23-00	FGL Ni20 Cr2				EN-GJLA-XNiCr 20-2	F41002	
	FGL Ni30 Cr3				EN-GJLA-XNiCr 30-3	F41004	
	FGL Ni15 Cu6 Cr2				EN-GJLA-XNiCuCr15-6-2	F41000	
	FGS Ni35				EN-GJSA-XNi35	F43006	
	FGS Ni20 Cr2				EN-GJSA-XNiCr20-2	F43000	
	FGS Ni30 Cr3				EN-GJSA-XNiCr30-3	F43003	
07 72-00	FGS Ni13 Mn7				EN-GJSA-XNiMn13-7	–	
	FGS Ni23 Mn4				EN-GJSA-XNiMn23-4	F43010	
					EN-GJS-800-8	ADI grade 1	
					EN-GJS-1000-5	ADI grade 2	
					EN-GJS-1200-2	ADI grade 3	
					EN-GJS-1400-1	ADI grade 4	
					EN-GJS-1600-1	ADI grade 5	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
N1	Aluminium alloys ≤ 12% Si Leghe di alluminio ≤ 12% Si Aluminiumlegierungen ≤ 12% Si Alliages d'aluminium ≤ 12 % Si Aleación de aluminio ≤ 12% Si Алюминиевое литье ≤ 12% Si		A1200	3.0205	Al 99	1C
			A1050/1050A	3.0255	Al 99.5	1B
			1070/1070A	3.0275	Al 99.7	
			1080/1080A	3.0285	Al 99.8	1A
				3.0515	AlMn1	N3
		Aluman 100		3.0517	AlMn1Cu	
			3105	3.0505	AlMn0.5Mg0.5	N31
			3005	3.0525	ALMn1Mg0.5	
			3004	3.0526	AlMn1Mg1	
			6012	3.0615	AlMgSiPb	
		Avional 660	2014/2014A	3.1255	AlCuSiMn	H15
		Avional 050	2117	3.1305	AlCuMg0.5	L86
		Avional 100	2017/2017A	3.1325	AlCuMg 1	(H14)
		Avional 150	2024	3.1355	AlCuMg 2	DTD5090
		–	2030	3.1645	AlCuMgPb	–
		Recidal 11	2011	3.1655	AlCuBiPb	FC1
			A380	3.2161	G-AlSi8Cu3	
			B26	3.2341	G-AlSi5Mg	LM25
		Anticorodal 063		3.3206	AlMgSi0.5	(H9)
				3.3210	AlMgSi0.7	(H10)
		Anticorodal 061	6061	3.3211	AlMg1SiCu	H20
		Peraluman 080		3.3315	AlMg1	N41
		Peraluman 150	5050	3.3316	AlMg1.5	
		Peraluman 250	5052	3.3523	AlMg2.5	
			5251	3.3525	AlMg2Mn0.3	N4
		Peraluman 350	5154	3.3535	ALMg3	N5/N56
			5454	3.3537	AlMg2.7Mn	N51
		Peraluman 440	5083	3.3547	AlMg4.5Mn	N8
		Peraluman 500	5056	3.3555	ALMg5	N6
		Anticorodal 061	6061	3.3211	AlMg1SiCu	H20
		Anticorodal 100	6082	3.2315	AlMgSi 1	H30
		Aldrey 051	6101		EAlMgSi0.5	E91E
			6106		AlMgSiMn	
			6463			
			6262			
			7010		AlZn6MgCu	DTD5130
			7020	3.4335	AlZn4.5Mg1	H17
		Ergal 55	7075	3.4365	AlZnMgCu1.5	2L95

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
4010	A4	L-3001	A1×3	9001/1			
4007	A5		A1×1	9001/2	AW-1050A	AA1050A	
	A7						
	A8						
4054		L-3811			AW-3103	AA3103	
	A-M1/3003		A3003		AW-3003	AA3003	
	AMG0.5			9003/4			
	AM1G	L-3820		9003/2			
	ASGPB						
4338	A-U4SG/2014	L-3130		9002/3	AW-2014	AA2014	
	AU2G			9002/1			
	AU4G	L-3120	A3×2	9002/2			
	AU4G1	L-3140	A3×4	9002/4			
4335	AU4Pb	L-3121	–	9002/8			
4355	A-U5PbBi/2011	L-3192	A2011	9002/5	AW-2011	AA2011	
4251					AC-46200	A13800	
4244	A-S7G		AC 4C	3599	AC-42000		
4103	A-GS/6060	L-3441		9006/1	AW-6060	AA6060	
4104,4107	A-GSUC/6061	L-3454	(A6063)		AW-6063	AA6005	
	AGSUC	L-3420	A2×4	9006/2			
4106	A-G0.6	L-3350		9005/1	AW-5005	AA5005	
				9005/7			
4120	AG2.5C	L-3360	A2×1	9005/2			
	AG2M	L-3361					
	AG3			9005/8			
	AG2.5MC	L-3391	A2×9	9005/3			
4140	AG4.5MC	L-3321	A2×7	9005/5			
	A-G5						
	AGSUC		A2×4	9006/2			
4212	ASGM 0.7	L-3451	–	9006/4			
	AGS/L						
				9007/4			
4425	AZ5G	L-3741	–	9007/1	AW-7020	AA7020	
	AZ5GU	L-3710	A34×6	9007/2	AW-7075	AA7075	

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TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
N2	Aluminium alloys > 12% Si Leghe di alluminio > 12% Si Aluminiumlegierungen > 12% Si Alliages d'aluminium > 12 % Si Aleación de aluminio > 12% Si Алюминиевое литье > 12% Si		AMS 4442	3.5103	G-MgSe3Zn2Zr1	MAG6-TE
					G-AlSi2	
					G-AlSi4.5	DTD716A
			355.1		G-AlSi5	LM16
			A356	3.2371	G-AlSi7Mg	LM25
			A380		G-AlSi8Cu3	LM24
				3.2373	G-AlSi9Mg	
			A360	3.2381	G-AlSi10Mg	LM9
				3.2383	G-AlSi10Mg (Cu)	(LM9)
			A413.0	3.2582	GD-AlSi12	
			A413.1	3.2583	G-AlSi12(Cu)	LM20
			A413.2	3.2581	G-AlSi12	LM6
				3.3561	G-AlMg5	LM5
			319		G-AlSi6Cu4	LM21
			319.2		G-AlSi6Cu4	LM4
					–	LM2
			319.2		G-AlSi6Cu4	LM22
			204			AEA 24860
						LM28
			336.0			LM13
				3.5812	G-MgAl8Zn1	MAG1
				3.5312	G-MgAl3Zn	–
				3.5912	G-MgAl9Zn1	MAG7
				3.5101	G-MgZn4SE1Zr1	MAG5
				3.5102	G-MgZn5Th2Zr1	
				3.5106	G-MgAg3SE2Zr1	MAG 12
			AZ61A	3.5612	G-MgAl6Zn	MAG-E-121
			AZ80A	3.5812	G-MgAl8Zn	
				3.2315	AlMgSi1	H30
			B85	3.2381	G-AlSi10Mg	LM9
			A413.2	3.2382	GD-AlSi12	
			B390.0			

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
	ZRE1				MN65120	M12330	
					41000	–	
	AS4G					ALSi5Mg	
	AS4GU				45300	ALSi5Cu 1	
4244	A-S7G		AC4C		42000	AlSi7Mg	
4250	A-S9U3		AC4B		46500	Al Si9 Cu3 (Fe) (Zn)	
4253	A-S10G				43100	Al Si 10 Mg	
					43200		
4247							
4260	A-S12				47000	Al Si 12 (Cu)	
4261	A-S12U		AC3A		44100	Al Si 12	
4252	A-SU12		AC4A		51300	ALMg 6	
	A-S5UZ		AC2A		45000	Al Si 6 Cu 4	
	A-S5U3		AC2A		45200	Al Si 5 Cu 3 Mn	
			ADC12				
	A-S5U		AC2A		45400	Al Si 5 Cu 3	
	A-U5GT		AC1B		2100	Al Cu 4 Mg Ti	
						AlSi18Cu1Mg1Ni1	
	A-S12UN		AC8A			AlSi12Cu1Mg1Ni1	
	G-A9						
	G-A9Z1						
	G-Z4TR						
	G-Ag22.5						
	G-A6-Z1				MG-P-63	M11600	
	(G-A7-Z1)				MG-P-61		
4212	A-SGM0.7/6082				AW-6082	AA6082	
4253	A-S10G				AC-43400	A13600	
					AC-44200		
			ADC14				

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
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TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
N3	Copper Rame Kupfer Cuivre Cobre Медные сплавы			2.0060	E-Cu57	C101
				2.0065	E-Cu58	–
				2.0070	SE Cu	–
					–	C102
					–	–
				2.0090	SF Cu	C106
					–	C104
					–	C110
					–	C105
				2.0040	OF Cu	C103
			CA952	2.0940-01	CuAl10Fe	AB1
			CA955	2.0975-01	CuAl10Ni	AB2
				2.0872	CuNi10Fe1Mn	CN102
					CuNi10Zn45	
				2.0790	CuNi18Zn19Pb	
			CA937	2.1176	CuPb10Sn	LB2
				2.1050-01	CuSn10	CT1
				2.1087	CuSn10Zn	
				2.0240	CuZn15	CZ102
				2.0321	CuZn37	CZ108
				2.0530	CuZn38Sn1	
				2.0401	CuZn39Pb3	CZ121
				2.0402	CuZn40Pb2	CZ120
				2.1202	SB Cu	C107
				2.1356	Cu Mn 3	–
				2.1522	Cu Si2 Mn	–
					–	C108
					–	CC101
					–	CC102
					–	CC102
				2.0857	–	–
					–	CB101
					–	C112
					–	–
					–	–
					–	CS101
					–	C109
					–	C111

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
–	Cu/a1		C1100	E-Cu57	CW004A	C11000	
–	–		–	–	–	–	
–	–		–	–	CW021A	C10300	
–	–		–	–	CW005A	C11020	
–	–		–	–	CW023A	C12000	
–	Cu/b		C1220	–	CW024A	C12200	
–	–		–	–	CW006A	C12500	
–	–		–	–	CW009A	C10100	
–	–		–	–	–	–	
–	Cu/c1		C1020	–	CW008A	C10200	
5710	CuAl10Fe				CC331G	C95200	BrA9ZH3L
5716	CuAl10Ni5Fe5				CC333G	C95500	BrA10ZH4N4L
5667	CuNi10Fe1Mn					C70600	
	CuNi18Zn19Pb1					C76300	
5640	CuSn10Pb10				CW352H	C93700	
5443	CuSn10				CC480K	C90700	
5458						C90500	
5112	CuZn15		C2300		CW502L	C23000	L90
5150	CuZn37				CW508L	C27200	
					CW717R	C46400	LO60-1
5170	CuZn39Pb3				CW614N	C38500	
5168	CuZn39Pb2				CW612N	C37800	
–	–		–	–	–	C14200	
–	–		–	–	–	–	
–	–		–	–	–	–	
–	–		–	–	–	C16200	
–	–		–	–	CW105C	C18200	
–	–		–	–	CW106C	–	
–	–		–	–	CW111C	C70250	
–	–		–	–	CW112C	C70320	
–	–		–	–	CW101C	C17200	
–	–		–	–	CW104C	C17500	
–	–		–	–	CW120C	C15000	
–	–		–	–	CW115C	C65100	
–	–		–	–	CW116C	C65500	
–	–		–	–	CW118C	C14500	
–	–		–	–	CW114C	C14700	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	AISI-ASTM	W.-Nr	DIN	BS
N4	Bronze and brass Bronzo e ottone Bronze und Messing Bronze et laiton Bronce y latón Бронзы и Латуни		C50700	2.1010	CuSn2	–
			C51100	2.1016	CuSn4	PB101
			C51000	–	CUSn5	PB102
			C51900	2.1020	CuSn6	PB103
			C52100	2.1030	CUSn8	PB104
			C54400			
					CuSn10	
					CuSn12	
				2.1020	CuSn6	PB103
		AMPCO 18				
		AMPCO 21				
		AMPCO 22				
				2.0220	CuZn5	CZ125
				2.0230	CuZn10	Cz101
				2.0240	CuZn15	CZ102
				2.0250	CuZn20	CZ103
				2.0261	CuZn28	
				2.0265	CuZn30	CZ106
				2.0280	CuZn33	
				2.0335	CuZn36	CZ107
				2.0321	CuZn37	CZ108
				2.0360	CuZn40	CZ109
				2.0331	CuZn36Pb1.5	CZ119
				2.0331	CuZn36Pb1.5	CZ119
				2.0375	CuZn36Pb3	CZ124
				2.0371	CuZn38Pb1.5	CZ128
				2.0372	CuZn39Pb0.5	CZ123
					CuZn38Pb2	
				2.0380	CuZn39Pb2	CZ131 / (CZ128)
				2.0401	CuZn39Pb3	CZ121
				2.0402	CuZn40Pb2	CZ122
				2.0410	CuZn44Pb2	CZ130
				2.0470	CuZn28Sn1	CZ111
				2.0530	CuZn38Sn1	
				–	CuZn19Sn	
				2.0460	CuZn20Al2	CZ110
				2.0561	CuZn40Al1	
				2.0550	CuZn40Al2	
				–	CuZn20Al2As	
				2.0572	CuZn40Mn2	CZ136
				2.0932	CuAl8Fe3	
				2.0966	CuAl10Ni5Fe4	CA104
N5	Plastic materials Materiali plastici Kunstoffmaterialien Matériaux plastiques Materiales plásticos Пластические материалы	Polycarbonate (PC)				
N6	Fiber and composites Fibre e compositi Faserwerkstoffe und Verbundwerkstoffe Fibres et composites Fibras y compuestos Композитные материалы	T300				
		T700				
		T800				
		HTA				
		Epoxy				
		PPS				
		PEEK				
		Epoxy				
		HX				
		E-glass				
		Kevlar				

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
			–				
			C5111				
			C5102				
			C5191				
			C5212				
			C5441				
5428	CuSn6		C5191		CW452K	C51900	BrOF6.5-0.15
			C2100		CW500L	C21000	
			C2200		CW501L	C22000	
			C2300		CW502L	C23000	
			C2400		CW503L	C24000	
					CW504L		
			C2600		CW505L	C26000	
			C2680		CW506L	C26800	
			C2700		CW507L	C27000	
			C2700		CW508L	C27200	
			C2800		CW509L	C28000	
					CW601N	C34500	
			C3501		CW600N	C34000	
			C3601		CW603N	C36000	
						C35300	
					CW610N	C36500	
			C3771		CW612N	C37700	
			C3603		CW614N	C38500	
					CW617N	C38000	
						C44300	
						C68700	
					CW723R		
					CW303G	C61400	
					CW307G	C63000	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

	MATERIALS	TRADE MARK	STRUCTURE	MF*	AISI-ASTM	W.-Nr	DIN
S1	**< 25 HRC** Heat resistant super alloys (HRSA) - good machinability Leghe resistenti al calore - buona lavorabilità Warmfeste Legierungen - gute Verarbeitbarkeit Alliages résistants à la chaleur - bonne usinabilité Aleaciones resistentes al calor de fácil mecanización Жаропрочные суперсплавы (хорошая обрабатываемость)	Nickel 201	Nickel based superalloys	4.3			
		17-4 PH (solubilized)	Iron based superalloys	2.1			
		AM 350	Iron based superalloys	1.8			
		Lapelloy	Iron based superalloys	1.8			
		17-7 (precipitation)	Iron based superalloys	1.8			
		Hastelloy C (plate)	Nickel based superalloys	1.8	N10002		NiCr17Mo17Few
		Hastelloy S	Nickel based superalloys	1.8			
		Inconel 625 (cast)	Nickel based superalloys	1.7	N06625	2.4856	NiCr22Mo9Nb
		A 286 (plate)	Iron based superalloys	1.4			
		IN 801	Iron based superalloys	1.4			
		M 308	Iron based superalloys	1.4			
		Hastelloy B-2	Nickel based superalloys	1.4		2.4617	
		Hastelloy C (cast)	Nickel based superalloys	1.4	N10002		NiCr17Mo17Few
		Hastelloy C-22	Nickel based superalloys	1.4			
		Hastelloy N (forged)	Nickel based superalloys	1.4	N10003		
		Inconel 600	Nickel based superalloys	1.4	N06600	2.4816	
		Inconel 601	Nickel based superalloys	1.4	N06601	2.4851	NiCr23Fe
		Inconel 706	Nickel based superalloys	1.4			
		Inconel X750 (solubilized)	Nickel based superalloys	1.4	N07750	2.4669	NiCr 15 Fe 7 TiAl
S2	**25-35 HRC** Heat resistant super alloys (HRSA) - medium machinability Leghe resistenti al calore - media lavorabilità Warmfeste Legierungen - mittlere Verarbeitbarkeit Alliages résistants à la chaleur - moyenne usinabilité Aleaciones resistentes al calor de media mecanización Жаропрочные суперсплавы (средняя обрабатываемость)	A 286 (Isolubilizzato)	Iron based superalloys	1.3			
		AM 350 (cast)	Iron based superalloys	1.3			
		Incoloy 800	Iron based superalloys	1.3	N08800	1.4876	X10NiCrAlTi32-21
		Incoloy 825	Iron based superalloys	1.3	N08825	2.4858	NiCr21Mo
		Hastelloy C-276	Nickel based superalloys	1.3			
		Hastelloy C-4	Nickel based superalloys	1.3			
		Hastelloy D	Nickel based superalloys	1.3			
		Hastelloy G	Nickel based superalloys	1.3			
		Hastelloy G-3	Nickel based superalloys	1.3			
		Hastelloy N (cast)	Nickel based superalloys	1.3	N10003		
		Hastelloy W	Nickel based superalloys	1.3			
		Hastelloy X	Nickel based superalloys	1.3	N06002	2.4665	NiCr22FeMo
		Inconel 625 (pipe)	Nickel based superalloys	1.3	N06625	2.4856	NiCr22Mo9Nb
		Inconel 708 (forged)	Nickel based superalloys	1.3			
		Nimonic 80	Nickel based superalloys	1.3	N06075	2.4630	NiCr20Ti
		Nimonic 105	Nickel based superalloys	1.3			
		A 286 (precipitation)	Iron based superalloys	1.1			
		AM 355	Iron based superalloys	1.1			
		IN 800	Iron based superalloys	1.1			
		N 155	Iron based superalloys	1.1			
		15-5 PH	Iron based superalloys	1.1			
		17-4 PH (Isolubilizzato)	Iron based superalloys	1.1			
		Incoloy 909	Iron based superalloys	1.1			
		Stellite 21	Cobalt based superalloys	1.1			
		Stellite 30	Cobalt based superalloys	1.1			
		Stellite 31	Cobalt based superalloys	1.1			
		Inconel 625 (forged)	Nickel based superalloys	1.1	N06625	2.4856	NiCr22Mo9Nb
		Inconel 713	Nickel based superalloys	1.1			
		Inconel 718 (cast)	Nickel based superalloys	1.1	N07718	2.4668	NiCr19Fe19NbMo
		Inconel 718 (pipe)	Nickel based superalloys	1.1	N07718	2.4668	NiCr19Fe19NbMo
		Inconel 901	Nickel based superalloys	1.1			
		Nimonic 81	Nickel based superalloys	1.1	N07080	2.4631	NiCr20TiAl
		Nimonic 263	Nickel based superalloys	1.1			
		Waspalloy (cast)	Nickel based superalloys	1.1	N07001	2.4654	NiCr20Co14MoTi

* Machinability Factor based on Inconel 718 (forged) = 1.0

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

BS	SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
		NC17DWY						
		NC22DNb						
NiMo28		N10665						
		NC17DWY						
		NC15Fe						
HR505		NC19FeNB						
3075(NA15)								
		NC21FeDU						
HR6.204		NC22FeD						
		NC22DNb						
HR5.203-4		NC20T						
		NC22DNb						
Hr8		Nc19FeNb						
Hr8		Nc19FeNb						
HR401,601		NC20TA						
		NC20K14						

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

	MATERIALS	TRADE MARK	STRUCTURE	MF*	AISI-ASTM	W.-Nr	DIN
S3	**35-45 HRC** Heat resistant super alloys (HRSA) - low machinability Leghe resistenti al calore - difficile lavorabilità Warmfeste Legierungen - schwere Verarbeitbarkeit Alliages résistants à la chaleur - faible usinabilité Aleaciones resistentes al calor de difícil mecanización Жаропрочные суперсплавы (плохая обрабатываемость)	Cobalt based superalloys	Haynes 188 (pipe)	1.0			
		Nickel based superalloys	Inconel X750 (precipitation)	1.0	N07750	2.4669	NiCr 15 Fe 7 TiAl
		Nickel based superalloys	Inconel 718 (forged)	**1.0**	N07718	2.4668	NiCr19Fe19NbMo
		Nickel based superalloys	Nimonic 115	1.0			
		Nickel based superalloys	Waspalloy (forged)	1.0	N07001	2.4654	NiCr20Co14MoTi
		Cobalt based superalloys	Haynes 25	0.9			
		Cobalt based superalloys	Haynes 188 (forged)	0.9			
		Nickel based superalloys	Udimet 500	0.9			NiCr18cCoMoAlTi
		Nickel based superalloys	Udimet 700	0.9			NiCo15Cr15MoAlTi
		Nickel based superalloys	Nimonic 90	0.7			
		Nickel based superalloys	Nimonic 91	0.7			
		Nickel based superalloys	Nimonic 101	0.7			
		Nickel based superalloys	Mar-M 247	0.7			NiCo10W10Cr9AlTi
		Nickel based superalloys	Mar-M 200	0.6			NiW13Co10Cr9AlTi
		Cobalt based superalloys	H 531	0.4			
		Nickel based superalloys	Rene 95	0.4			
		Cobalt based superalloys	Air Resist	0.3			
S4	Low alloy titanium (good machinability) Leghe di titanio basso legate e medio legate Niedriglegierte und mittellegierte Titanlegierungen Alliages de titane faiblement alliés et moyennement alliés Aleaciones de titanio de fácil mecanización Низколегированные титановые сплавы (хорошая обрабатываемость)		Grade 1		265-G1		TiAl2Sn4Zr2MoSi
			Grade 2		265-G2		TiAl2Sn4Zr6Mo
			Grade 3 (13 HRC)		265-G3	3.7055	Ti 99.6
			Grade 9 (15 HRC)			3.7195	Ti3Al2.5V
							TiAl7Mo4
						3.7115	TiAl5Sn2.5
						3.7124	TiCu2.5
						3.7155	TiAl6Zr5Mo0.5
						–	TiAl5Mo4Sn4Si0.5
						3.7175	TiAl6V6Sn2
						3.7185	TiAl4Mo4Sn2
						3.7025	Ti 99.8
						3.7035	Ti 99.7a
S5	High alloy titanium (medium machinability) Leghe di titanio medio legate e alto legate Mittellegierte und hochlegierte Titanlegierungen Alliages de titane moyennement alliés et fortement alliés Aleaciones de titanio de media mecanización Высоколегированные титановые сплавы (средняя обрабатываемость)		Grade 4 (23 HRC)		265-G4		
			Grade 5 (36 HRC)			3.7164	Ti6Al4V
			Grade 6 (36 HRC)				Ti5Al2.5SN
			Grade 23 (35 HRC)			3.7165	Ti6Al4VELI
			6242 (34 HRC)		4975		TiAl2Sn4Zr2MoSi
			6246 (39 HRC)				TiAl2Sn4Zr6Mo
							TiV10Fe2Al3

* Machinability Factor based on Inconel 718 (forged) = 1.0

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

BS	SS	AFNOR	UNE-IHA	JIS	UNI	EN	UNS	GOST
HR505		NC19FeNB						
Hr8		Nc19FeNb						
		NC20K14						
		NCK19DAT						
		NCKD20AT						
							R50250	
							R50400	
							R50550	
						Ti9	R56320	
TA14/17		T-A6V						
		TA 1						
		TA 2-5						
							R50700	
TA10-13/TA29		T-A5E				TiAl6V4	R56400	
							R54250	
TA11							R56401	
							R56260	

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

	MATERIALS	W.-Nr	DIN	BS	SS	AFNOR
H1	**50-56 HRC** Hardened steel Acciai temprati generali Allgemeine gehärtete Stähle Aciers trempés Aceros templados Закаленные стали	1.7131	16 MnCr 5	527 M 17	2511	16 MC 5
		1.1201	42 CrMo 4	708 M40	2244	42 CD 4
		1.1231	Ck 67	060 A 67	1770	XC 68
		1.1248	Ck 75	060 A 78	1774, 1778	XC 75
		1.1274	Ck 101	060 A 96	1870	
		1.1545	C 105 W1		1880	Y1 105
		1.2550	60 WCrV 7			55 WC 20
		1.7176	55 Cr 3	527 A 60	2253	55 C 3
		1.3401	X 120 Mn 12	BW 10	2183	Z 120 M 12
H2	**54-62 HRC** Hardened bearing steel Acciai temprati per cuscinetti Gehärtete Kugellagerstähle Aciers trempés pour roulements Aceros templados para rodamientos Закаленные подшипниковые стали	1.2210	115 CrV 3			100 C 3
		1.2510	100 MnCrW 4	BO 1	2140	90 MWCV 5
		1.2842	90 MnCrV 8	BO 2		90 MV 8
		1.3505	100 Cr 6	534 A 99	2258	100 C 6
H3	**60-65 HRC** Hardened tool steel Acciai per utensili temprati Gehärtete Werkzeugstähle Aciers trempés pour outils Aceros templados para herramientas Закаленные инструментальные стали	1.2344	X 40 CrMoV 5 1	BH 13	2242	Z 40 CDV 5
		1.2363	X 100 CrMoV 5 1	BA 2	2260	Z 100 CDV 5
		1.2379	X 155 CrVMo 12 1	BD 2		Z 160 CDV 12
		1.2436	X 210 CrW 12		2312	
		1.2601	X 165 CrMoV 12		2310	
		1.2713	55 NiCrMoV 6			55 NCDV 7
		1.3243	S 6-5-2-5		2723	Z 85 WDKCV 06-05-05-04-02
		1.3247	S 2-10-1-8	BM 42		Z 110 DKCWV 09-08-04
		1.3343	S 6-5-2	BM 2	2722	Z 85 WDCV 06-05-04-0
		1.3355	S 18-0-1	BT 1		Z 80 WCV 18-04-01
H4	**50-56 HRC** Hardened martensitic stainless steel Acciai inossidabili martensitici temprati Gehärtete martensitische Edelstähle Aciers inoxydables martensitiques trempés Aceros inoxidables martensíticos templados Закаленные мартенситные нержавеющие стали	1.4021	X 20 Cr 13	420 S 37	2303	Z 20 C 13
		1.4109	X 65 CrMo 14			Z 70 D 14
		1.4112	X 90 CrMoV 18	409 S 19	2327	Z 2 CND 18 05
		1.4125	X 105 CrMo 17			Z 100 CD 17
		1.4534	X 3 CrNiMoAl 13 8 2			
		1.4542	X 5 CrNiCuNb 17 4			Z 6 CNU 17.4
		1.4568	X 7 CrNiAl 17 7	301 S 81	2388	Z 9 CAN 17.7
		1.4943	X 4 NiCrTi 25 15	HR 51	2570	Z 6 NCTDV 25.15
H5	**48-55 HRC** Hardened white cast iron Ghise bianche temprate Gehärteter Weißguss Fonte blanche trempée Fundición blanca templada Закаленный белый чугун	G-X330 NiCr 4 2	FB Ni4 Cr2 BC	Grade 2 A	05 12-00	Grade 2 A
		G-X260 NiCr 4 2	FB Ni4 Cr2 HC	Grade 2 B	05 13-00	Grade 2 B
		G-X300 CrNiSi 9 5 2	FB Cr9 Ni5	Grade 2 C, D, E	04 57-00	Grade 2 C, D, E

Materiali Werkstoffmaterialien Matériaux Materiales Материалы

UNE-IHA	JIS	UNI	EN	UNS	GOST
	SCR 415	16 MnCr 5	16 MnCr 5	G51170	
	SCM 440 (H)	42 CrMo 4	42 CrMo 4	G41400	
		C 70	C 67S	G10700	
		C 75	C 75S	G10780	
	SUP 4		C 100S	G10950	
		C 100 KU	C 105U		
		55 WCrV 8 KU			
	SUP 9 (A)	55 Cr 3	55 Cr 3	G51550	
	SC MnH 1				
		107 CrV 3 KU	107 CrV 3	T61202	
	SKS 3	95 MnWCr 5 KU		T31501	
		90 MnVCr 8 KU	90 MnCrV 8	T31502	
	SUJ 2	100 Cr 6	100 Cr 6	G51986	
	SKD 61	X 40 CrMo 5 1 1 KU	X 40 CrMoV 5 1	T20813	
	SKD 12	X 100 CrMoV 5 1 KU	X 100 CrMoV 5	T30102	
	SKD 11	X 155 CrVMo 12 1 KU	X 155 CrVMo 12 1	T30402	
	SKD 2	X 215 CrW 12 1 KU			
		X 165 CrMoW 12 KU			
	SKT 4			T61206	
	SKH 55	HS 6-5-2-5	HS 6-5-2-5		
	SKH 51	HS 2-9-1-8	HS 2-10-1-8	T11342	
	SKH 9, SKH 51	HS 6-5-2	HS 6-5-2	T11302	
	SKH 2	HS 18-0-1	HS 18-0-1	T12001	
	SUS 420 J 1	X 20 Cr 13	X 20 Cr 13	S42000	
	SUS 440 A		X 70 CrMo 15	S44002	
	SUS 440 B	X CrTi 12	X 90 CrMoV 18	S44003	
	SUS 440 C	X 105 CrMo 17	X 105 CrMo 17	S44004	
			X 3 CrNiMoAl 13 8 2	S13800	
	SCS 24, SUS 630		X 5 CrNiCuNb 16 4	S17400	
	SUS 631	X 7 CrNiAl 17 7	X 7 CrNiAl 17 7	S17700	
	SUH 660		X 6 NiCrTiMoV 25 15	S66286	
			EN-GJN-HV520	F45001	
			EN-GJN-HV550	F45000	
			EN-GJN-HV600(X-Cr11)	F45003	

Durezza Härte Dureté Dureza Твёрдость

HRC	VICKERS	BRINELL HARDNESS		ROCKWELL HARDNESS			ROCKWELL SUPERFICIAL HARDNESS			SHORE HARDNESS	N/mm² TENSILE STRENGHT	HRC
		standard ball	tungsten carbide ball	A scale	B scale	D scale	15-N scale	30-N scale	45-N scale			
68	940	-	-	85.6	-	76.9	93.2	84.4	75.4	97	-	68
67	900	-	-	85.0	-	76.1	92.9	83.6	74.2	95	-	67
66	865	-	-	84.5	-	75.4	92.5	82.8	73.3	92	-	66
65	832	-	(739)	83.9	-	74.5	92.2	81.9	72.0	91	-	65
64	800	-	(722)	83.4	-	73.8	91.8	81.1	71.0	88	-	64
63	772	-	(705)	82.8	-	73.0	91.4	80.1	69.9	87	-	63
62	746	-	(688)	82.3	-	72.2	91.1	79.3	68.8	85	-	62
61	720	-	(670)	81.8	-	71.5	90.7	78.4	67.7	83	-	61
60	697	-	(654)	81.2	-	70.7	90.2	77.5	66.7	81	-	60
59	674	-	(634)	80.7	-	69.9	89.8	76.6	65.5	80	-	59
58	653	-	615	80.1	-	69.2	89.3	75.7	64.3	78	-	58
57	633	-	595	79.6	-	68.5	88.9	74.8	63.2	76	-	57
56	613	-	577	79.0	-	67.7	88.3	73.9	62.0	75	-	56
55	595	-	560	78.5	-	66.9	87.9	73.0	60.9	74	2075	55
54	577	-	543	78.0	-	66.1	87.4	72.0	59.8	72	2015	54
53	560	-	525	77.4	-	65.4	86.9	71.2	58.6	71	1950	53
52	544	(500)	512	76.8	-	64.6	86.4	70.2	57.4	69	1880	52
51	528	(487)	496	76.3	-	63.8	85.9	69.4	56.1	68	1820	51
50	513	(475)	481	75.9	-	63.1	85.5	68.5	55.0	67	1760	50
49	498	(464)	469	75.2	-	62.1	85.0	67.6	53.8	66	1695	49
48	484	451	455	74.7	-	61.4	84.5	66.7	52.5	64	1635	48
47	471	442	443	74.1	-	60.8	83.9	65.8	51.4	63	1580	47
46	458	432	432	73.6	-	60.0	83.5	64.8	50.3	62	1530	46
45	446	421	421	73.1	-	59.2	83.0	64.0	49.0	60	1480	45
44	434	409	409	72.5	-	58.5	82.5	63.1	47.8	58	1435	44
43	423	400	400	72.0	-	57.7	82.0	62.2	46.7	57	1385	43
42	412	390	390	71.5	-	56.9	81.5	61.3	45.5	56	1340	42
41	402	381	381	70.9	-	56.2	80.9	60.4	44.3	55	1295	41
40	392	371	371	70.4	-	55.4	80.4	59.5	43.1	54	1250	40
39	382	362	362	69.9	-	54.6	79.9	58.6	41.9	52	1215	39
38	372	353	353	69.4	-	53.8	79.4	57.7	40.8	51	1180	38
37	363	344	344	68.9	-	53.1	78.8	56.8	39.6	50	1160	37
36	354	336	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49	1115	36
35	345	327	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48	1080	35
34	336	319	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47	1055	34
33	327	311	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46	1025	33
32	318	301	301	66.3	(107.0)	49.2	76.1	52.1	33.7	44	1000	32
31	310	294	294	65.8	(106.0)	48.4	75.6	51.3	32.5	43	980	31
30	302	286	286	65.3	(105.5)	47.7	75.0	50.4	31.3	42	950	30
29	294	279	279	64.7	(104.5)	47.0	74.5	49.5	30.1	41	930	29
28	286	271	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41	910	28
27	279	264	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40	880	27
26	272	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	860	26
25	266	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	840	25
24	260	247	247	62.4	(101.0)	43.1	71.6	45.0	24.3	37	825	24
23	254	243	243	62.0	100.0	42.1	71.0	44.0	23.1	36	805	23
22	248	237	237	61.5	99.0	41.6	70.5	43.2	22.0	35	785	22
21	243	231	231	61.0	98.5	40.9	69.9	42.3	20.7	35	770	21
20	238	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	760	20
(18)	230	219	219	-	96.7	-	-	-	-	33	730	(18)
(16)	222	212	212	-	95.5	-	-	-	-	32	705	(16)
(14)	213	203	203	-	93.9	-	-	-	-	31	675	(14)
(12)	204	194	194	-	92.3	-	-	-	-	29	650	(12)
(10)	196	187	187	-	90.7	-	-	-	-	28	620	(10)
(8)	188	179	179	-	89.5	-	-	-	-	27	600	(8)
(6)	180	171	171	-	87.1	-	-	-	-	26	580	(6)
(4)	173	165	165	-	85.5	-	-	-	-	25	550	(4)
(2)	166	158	158	-	83.5	-	-	-	-	24	530	(2)
(0)	160	152	152	-	81.7	-	-	-	-	24	515	(0)