

## International standards for materials required for manufacturing slewing bearings

Worldwide operations increasingly need to be adapted to international standards. Therefore, it is important to know to what extent identical analyses or application-identical material properties are meeting requirements. The following tables show various international standards applicable for unalloyed structural steels, quenched and tempered steels, high-alloyed steels and aluminum alloys. Considering the multitude of formable materials,

these lists cannot be comprehensive. Please contact the



's sales department for more information.

## Quenched and tempered steel according to DIN EN ISO 683 or DIN EN ISO 4957

ISO	Great Britain	France	Italy	Sweden	Spain	USA	Japan	China
	BS	NF	UNI	SS/SIS	UNE	ASTM	JIS	GB
C 22	050 A 20	-	-	-	-	1020	-	-
C 35	060 A 35	AF 55 C 35	-	1572	-	1035	-	35
C 45	080 M 46	AF 65 C 45	-	1672	-	1045	-	45
C 55	070 M 55	AF 70 C 55	-	1674	-	1055	-	55
C 60	080 A 62	-	-	-	-	1060	-	60
C 22 E/R	070 M 20	XC 18/u	C 25	-	Ck 25	-	S 22 C	-
C 35 E/R	080 M 36	XC 38 H1/u	C 35	-	Ck 35/1	-	S 35 C	-
C 45 E/R	080 M 46	XC 45 H1/u	C 45	-	Ck 45/1	-	S 45 C	-
C 55 E/R	070 M 55	XC 55 H1/u	C 55	-	Ck 55/1	-	S 55 C	-
C 60 E/R	070 M 60	-	C 60	-	-	-	S 58 C	-
28 Mn 6	150 Mn 28	38 C 2	-	2120	36 Mn 6	1330	SMn 1	30Mn2
38 Cr 2	120 M 36	38 C 2	-	-	-	-	SMn 2	-
46 Cr 2	605 M 36	42 C 2	-	-	-	-	SMn 3	-
34 Cr 4	530 M 32	32 C 2	-	-	-	5132	SCr 2	35Cr
37 Cr 4	530 M 36	38 C 4	-	-	38 Cr 4	5135	SCr 3	-
41 Cr 4	530 M 40	42 C 4	41 Cr 4	-	42 Cr 4	5140	SCr 4	40Cr
25 CrMo 4	708 M 25	25 CD 4	25 CrMo 4	2225	30 CrMo 4	4130	SCM 2	30CrMo
34 CrMo 4	708 M 32	34 CD 4	35 CrMo 4	2234	35 CrMo 4	4137	SCM 3	35CrMo
42 CrMo 4	708 M 40	42 CD 4	42 CrMo 4	2244	40 CrMo 4	4140	SNC M 4	42CrMo
34 CrNiMo 6	817 M 40	35 CD 6	30 NiCrMo 12	2541	40 NiCrMo 7	4340	SNC M 9	-
30 CrNiMo 8	823 M 30	30 NCD 8	-	2534	32 NiCrMo 16	-	SNC M 5	-
51 CrV 4	735 A 50	50 CV 4	50 CrV 4	-	-	6150	SUP 10	-
100 CrMnMoSi 8-4-6	-	-	-	-	-	-	-	-
18 CrNiMo 7-6	EN 355	822 A17	-	-	-	48200	-	-
18 NiCrMo 14-6	-	-	-	-	-	-	-	-
40 CrMnNiMo 8-6-4	-	-	-	-	-	-	-	-

Unalloyed structural steels								
EN 10025	Great Britain	France	Italy	Sweden	Spain	USA	Japan	China
	BS	NF	UNI	SS/SIS	UNE	ASTM	JIS	GB
S 185	–	A 33	FE 320	1300-00	A 310-0	283 G. A		Q195
S 235 JR	40 B	–	–	1312-00	AE 235 B-FN	284 G. B	–	Q235B
S 235 J0	40 C/D	E 24-3/4	FE 360 C/D	–	AE 235 C/D	–	–	Q235C
S 235 J2	–	–	–	–	–	–	–	Q235D
S 275 JR	43 B	E 28-2	FE 430 B	1412-00	AE 275 B	–	–	Q275B
S 275 J0	43 C/D	E 28-3/4	FE 430 C/D	1414-00	AE 275 C/D	572 G. 42	SM 41 C	Q275C
S 275 J2	–	–	–	1414-01	–	–	–	Q275D
S 355 JR	50 B	E 36-2	FE 510 B	–	AE 355 B	–	–	Q355B
S 355 J0	50 C/D	E 36-3	FE 510 C/D	–	AE 355 C/D	440	SM 53 B/C	Q355C
S 355 J2	50 DD	E 36-4	–	–	–	–	–	Q355D
S355 NL								Q355NE
S 450 J0	50 B	–	–	–	–	–	–	–
E 295	–	A 50-2	FE 490	1550-00	A 490	572 G. 55	SS 50	–
E 335	55 C	A 60-2	FE 590	1650-00	A 590	572 G. 65	SM 58	–
E 360	–	A 70-2	FE 690	1655-00	A 690	–	–	–

Aluminum alloys								
DIN 17007	ISO	Int. Reg. Record (AA)	Great Britain	France	Italy	Sweden	Spain	Japan
			BS (old)	NF (old)	UNI	SS/SIS	UNE	JIS (old)
3.0515	AlMn 1	3103	N 3	–	3568	4054	L-3810	–
3.0517	AlMn 1 Cu	3003	–	A-M 1	7780	–	–	A 2 x 3
3.0526	–	3004	–	A-MG 1	6361	–	L-3820	–
3.3315	AlMg 1	(5005 A)	N 41	A-G 06	5764	4106	L-3350	A 2 x 8
3.3316	AlMg 1,5	(5050 B)	–	–	3573	–	L-3380	–
3.3535	AlMg 3	5754	–	A-G 3 M	3575	4133	L-3390	–
3.3345	–	5082	–	A-G 4,5	5420	–	–	–
3.3555	AlMg 5	5056 A	N 6	–	3576	4146	L-3320	A 2 x 2
3.3537	AlMg 3 Mn	5454	N 51	A-G 2,5 MC	7789	–	–	(A 2 x 9)
3.3545	AlMg 4 Mn	5086	–	A-G 4 MC	5452	–	L-3322	–
3.3547	AlMg 4,5 Mn	5083	N 8	A-G 4,5 MC	7790	4140	L-3321	A 2 x 7
3.3211	AlMg 1 SiCu	6061	H 20	A-GSUC	6170	–	L-3420	A 2 x 4
–	AlSi 1 MgMn	6082	H 30	A-SGM 07	3571	4212	L-3451	–
–	AlSi 1 Mg	6351	–	–	–	–	–	–
3.1305	AlCu 2 Mg	2117	3 L 86	A-U 2 G	3577	–	L-3180	A 3 x 3
3.1325	AlCu 4 MgSi	2017 A	–	A-U 4 G	3579	–	L-3120	A 3 x 2
3.1355	AlCu 4 Mg 1	2024	–	A-U 4 G 1	3583	–	L-3140	A 3 x 4
3.1255	AlCu 4 SiMg	2014	H 15	A-U 4 SG	3581	4338	L-3130	A 3 x 1
–	–	2001	–	A-U 6 MGT	–	–	–	–
3.4415	AlZn 1	7072	–	A-Z 1	–	–	L-3721	–
3.4335	AlZn 4,5 Mg 1	7020	H 17	A-Z 5 G	7791	4425	L-3741	7 N 01
–	–	7005	–	–	–	–	–	–
3.4345	–	7022	–	A-Z 4 GU	–	–	–	–
3.4365	AlZn 6 MgCu	7075	2 L 95	A-Z 5 GU	3735	–	L-3710	A 3 x 6
(3.4394)	–	7049 A	–	A-Z 8 GU	3737	–	–	–
–	–	2219	–	–	–	–	–	–
–	–	7010	–	–	–	–	–	–
3.4334	AlZn 5,5 MgCu	7175	–	–	–	–	–	–

## High-alloyed steels

Steel grade SEW 400		ISO- standard	EURO-standard 88-86	Great Britain	France	Sweden	Spain	USA	Japan
Mat. No.	Short name 683/13			BS	NF	SS/SIS	UNE	ASTM	JIS
1.4000	X 6 Cr 13	1	X 6 Cr 13	403 S 17	Z 6 C 13	(2301)	3110	410 S	410 S
1.4002	X 6 CrAl 13	2	X 6 CrAl 13	405 S 17	Z 6 CA 13	–	3111	405	405
1.4006	X 10 Cr 13	3	X 10 Cr 13	(410 S 21)	(Z 12 C 13)	2302	(3401)	(410)	(410)
1.4104	X 12 CrMoS 17	9 a	X 14 CrMoS 17	–	Z 10 CF 17	2383	3117	–	430 F
1.4105	X 4 CrMoS 18	–	–	–	–	–	–	–	–
1.4510	X 6 CrTi 17	8 b	X 5 CrTi 17	–	Z 8 CT 17	2326	3114	439	430 LX
1.4512	X 6 CrTi 12	1 Ti	X 6 CrTi 12	409 S 19	Z 6 CT 12	–	–	409	409
1.4021	X 20 Cr 13	4	X 20 Cr 13	(420 S 29)	(Z 20 C 13)	2303	3402	(S 42010)	420 J 1
1.4024	X 15 Cr 13	3	X 15 Cr 13	(420 S 29)	(Z 12 C 13)	2302	(3401)	(410)	(410)
1.4028	X 30 Cr 13	5	X 30 Cr 13	420 S 45	(Z 30 C 13)	2304	3403	420 B	420 J 2
1.4031	X 38 Cr 13	–	X 40 Cr 13	–	(Z 40 C 14)	–	(3404)	420 X	420 J 2
1.4034	X 46 Cr 13	–	X 45 Cr 13	–	Z 40 C 13	–	3405	420 C	–
1.4057	X 20 CrNi 17 2	9 b	X 19 CrNi 17 2	431 S 29	Z 15 CN 16.02	2321	3427	431	431
1.4112	X 90 CrMoV 18	–	–	–	(Z 90 CDV 18)	–	–	(440 B)	440 B
1.4116	X 45 CrMoV 15	–	–	–	(Z 50 CD 13)	–	–	–	–
1.4120	X 20 CrMo 13	–	–	–	Z 20 CD 13	–	–	–	–
1.4122	X 35 CrMo 17	–	–	–	–	–	–	–	–
1.4125	X 105 CrMo 17	–	–	–	Z 100 CD 17	–	–	440 C	440 C
1.4418	X 4 CrNiMo 16 5	–	–	–	Z 5 CND 17.05	2387	–	–	–
1.4460	X 4 CrNiMoN 27 5 2	–	–	–	(Z 8 CND 26.05)	2324	–	329	(329 J 1)
1.4462	X 2 CrNiMoN 22 5 3	–	–	–	Z 2 CND 22.5 AZ	2377	–	S 31803	–
1.4301	X 5 CrNi 18 10	11	X 5 CrNi 18 10	304 S 15/16/31	Z 6 CN 18.09	2332	3504	304	304
1.4303	X 5 CrNi 18 12	13	X 5 CrNi 18 12	305 S 19	Z 4 CN 18.12	–	3513	(305)	305 J 1
1.4305	X 10 CrNiS 18 9	17	X 10 CrNiS 18 9	303 S 31	Z 10 CNF 18.09	2346	3508	303	303
1.4306	X 2 CrNi 19 11	10	X 2 CrNi 18 10	304 S 11	Z 2 CN 18.10	2352	3503	304 L	304 L
1.4311	X 2 CrNiN 18 10	10 N	X 2 CrNiN 18 10	(304 S 61)	Z 2 CN 18.10 AZ	2371	–	304 LN	304 LN
1.4541	X 6 CrNiTi 18 10	15	X 6 CrNiTi 18 10	321 S 31	Z 6 CNT 18.10	2337	3523	321	321
1.4550	X 6 CrNiNb 18 10	16	X 6 CrNiNb 18 10	347 S 31	Z 6 CNNb 18.10	2338	3524	347	347
1.4401	X 5 CrNiMo 17 12 2	20	X 5 CrNiMo 17 12 2	316 S 31	Z 6 CND 17.11	2347	3534	316	316
1.4404	X 2 CrNiMo 17 13 2	19	X 2 CrNiMo 17 13 2	316 S 11	Z 2 CND 17.12	2348	3533	316 L	316 L
1.4406	X 2 CrNiMoN 17 12 2	19 N	X 2 CrNiMoN 17 12 2	(316 S 61)	Z 2 CND 17.12 AZ	–	–	316 LN	316 LN
1.4429	X 2 CrNiMoN 17 13 3	19 a N	X 2 CrNiMoN 17 13 3	(316 S 63)	Z 2 CND 17.13 AZ	2375	3534	316 LN	316 LN
1.4435	X 2 CrNiMo 18 14 3	19 a	–	316 S 13	Z 2 CND 17.13	2353	3533	316 L	316 L
1.4436	X 5 CrNiMo 17 13 3	20 a	X 5 CrNiMo 17 13 3	316 S 33	Z 6 CND 17.12	2343	–	316	316
1.4438	X 2 CrNiMo 18 16 4	24	X 2 CrNiMo 18 16 4	317 S 12	Z 2 CND 19.15	2367	–	(317 L)	317 L
1.4439	X 2 CrNiMoN 17 13 5	–	X 2 CrNiMoN 17 13 5	–	–	–	–	–	–
1.4539	X 1 NiCrMoCu 25 20 5	A-4	–	–	Z 1 CNDU 25.20	2562	–	–	–
1.4571	X 6 CrNiMoTi 17 12 2	21	X 6 CrNiMoTi 17 12 2	320 S 31	Z 6 CNDT 17.12	2350	3535	316 Ti	–



All the information presented in this brochure has been carefully compiled and reviewed. WEI cannot be held responsible for any errors or omissions. We reserve the right to make technical modifications and additions in the interests of technical advancement.