STEEL GRADE CORRESPONDENTS

EURONORM	DIN	Werkstoff No.	STAS	AFNOR	B.S.	UNI	JIS	GOST	AISI SAE ASTM
EN 10083	17212		880-88		970		G4802	1050-88	J403
	Cf53	1.1213		XC48TS	070M55	C53			1050
C60E	Ck60	1.1223	OLC60	1C60 AF70C55	060A62 60HS; CS	C60 1C60	S58C	60	1060
EN 10088			3583-87					5632	J405
X46Cr13		1.4034	40Cr130	Z44Cr13		X40Cr14		40Ch13	420C
X90CrMoV18		1.4112	90VMoCr180						440B

CHEMICAL COMPOSITION

% BY WEIGHT (upon indicated standard)

STEEL GRADE	Standard	C	Si	Mn	P max	S max	Cr	Mo	Ni	V
Cf53	DIN 17212	0.50 - 0.57	0.15 - 0.35	0.40 - 0.70	0.025	0.035	–	–	–	–
C60E	EN 10083	0.57 - 0.65	max 0.4	0.60 - 0.90	0.030	0.035	max 0.40	max 0.1	max 0.4	–
X46Cr13	EN 10088	0.43 - 0.50	max 1.0	max 1.0	0.040	0.015	12.5 - 14.5	–	–	–
X90CrMoV18	EN 10088	0.85 - 0.95	max 1.0	max 1.0	0.040	0.015	17.0 - 19.0	0.9 - 1.3	–	0.07 - 0.12

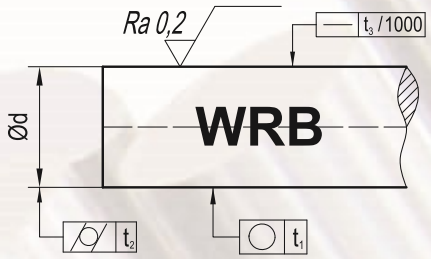
MECHANICAL PROPERTIES: +N

MATERIAL		$R_{p0.2}$ (N/mm2)	R_m (N/mm2)	A_{min}
Cf53 W-1.1213	d ≤ 16 mm	min 510	740 ÷ 880	12
	16 mm < d ≤ 40 mm	min 430	690 ÷ 830	14
	40 mm < d ≤ 100 mm	min 400	640 ÷ 780	15
C60E W-1.1221	d ≤ 16 mm	min 380	min 710	10
	16 mm < d ≤ 40 mm	min 340	min 670	11
	40 mm < d ≤ 100 mm	min 310	min 650	11

HARDNESS

STEEL GRADE	Core hardness HB max	Surface hardness HRC
Cf53	229	62 ± 2
C60E	241	62 ± 2
X46Cr13	245	55 ± 3
X90CrMoV18	265	56 ± 3

STEEL GRADE X46Cr13 (W1.4034)



Shaft Diameter d	Weight per metre	Shaft part number	Standard length	Hardening depth Rht DIN 50190 (max)	Standard tolerance ISO h6	Roundness (circular) t1	Parallelism (cylindric) t2	Straightness t3
mm	*kg*		*mm*	*mm*	*µm*	*µm*	*µm*	*mm/m*
5	0.16	WRB 5	4000	0.5 - 0.8	0/-8	4	5	0.16
6	0.23	WRB 6	6000	0.5 - 0.8	0/-8	4	6	0.16
8	0.40	WRB 8	6000	0.6 - 0.9	0/-9	4	6	0.16
10	0.62	WRB 10	6000	0.7 - 1.0	0/-9	4	6	0.16
12	0.89	WRB 12	6000	0.8 - 1.2	0/-11	5	8	0.12
14	1.21	WRB 14	6000	0.9 - 1.3	0/-11	5	8	0.12
15	1.39	WRB 15	6000	1.1 - 1.5	0/-11	5	8	0.12
16	1.58	WRB 16	6000	1.1 - 1.5	0/-11	5	8	0.12
20	2.47	WRB 20	6000	1.2 - 1.5	0/-13	6	9	0.1
25	3.85	WRB 25	6000	1.5 - 1.7	0/-13	6	9	0.1
30	5.55	WRB 30	6000	1.5 - 1.9	0/-13	6	9	0.1
40	9.87	WRB 40	6000	2.5 - 3.0	0/-16	7	11	0.1
50	15.40	WRB 50	6000	2.7 - 3.2	0/-16	7	11	0.1
60	22.20	WRB 60	6000	2.9 - 3.3	0/-19	8	13	0.1

By request we can supply shaft diameters in no listed dimensions with special lengths and tolerances.
Length tolerance: 0/+200 mm
Surface hardness: 55±3 HRC

NB: because of the centerless grinding process used for random length shafts, the outmost 100mm of both shaft ends are not guaranteed to be either in diameter tolerance or induction hardened to the standard hardness values