Schematic „family tree“
of the common quenched and tempered steels

Deutsche Edelstahlwerke

Member of Swiss Steel Group

Tensile strength in quenched and tempered condition

7707 30CrMoV9

a	b	c	f	D	e	g	h	i
56	35	248	1100	7707	30CrMoV9	30	248	360

C	Mn	Cr	Mo	V
0.26 0.34	0.40 0.70	2.30 2.70	0.15 0.25	0.10 0.20

6580 30CrNiMo8

a	b	c	f	D	e	g	h	i
56	50+	248	1100	6580	30CrNiMo8	35	–	330

C	Mn	Cr	Mo	Ni
0.26 0.38	0.30 0.60	1.80 2.20	0.30 0.50	1.80 2.20

6582 34CrNiMo6

a	b	c	f	D	e	g	h	i
58	50+	248	1000	6582	34CrNiMo6	45	–	320

C	Mn	Cr	Mo	Ni
0.30 0.38	0.50 0.80	1.30 1.70	0.15 0.30	1.30 1.70

7225 42CrMo4

a	b	c	f	D	e	g	h	i
61	20	241	900	7225	42CrMo4	35	255	330

C	Mn	Cr	Mo	
0.38 0.45	0.60 0.90	0,90 1.20	0.15 0.30	

8159 51CrV4 (50CrV4)

a	b	c	f	D	e	g	h	i
65	35	248	900	8159	51CrV4 (50CrV4)	30	–	300

C	Mn	Cr	V	
0.47 0.55	0.70 1.10	0.90 1.20	0.10 0.25	

7035 41Cr4

a	b	c	f	D	e	g	h	i
61	11	241	800	7035	41Cr4	35	255	330

C	Mn	Cr		
0.38 0.45	0.60 0.90	0,90 1.20		

7220 34CrMo4

a	b	c	f	D	e	g	h	i
57	27	223	800	7220	34CrMo4	45	255	350

C	Mn	Cr	Mo	
0.30 0.37	0.60 0.90	0,90 1.20	0.15 0.30	

8524* 8CrMo16 DEW-special grade

a	b	c	f	D	e	g	h	i
40	40+	–	800	8524*	8CrMo16 DEW-special grade	150	240	480

C	Mn	Cr	Mo	Al
0.07 0.11	0.90 1.20	3.70 4.10	0.40 0.60	0.015 0.040

7034 37Cr4

a	b	c	f	D	e	g	h	i
59	9	235	750	7034	37Cr4	35	255	340

C	Mn	Cr		
0.34 0.41	0.60 0.90	0,90 1.20		

7033 34Cr4

a	b	c	f	D	e	g	h	i
57	9	223	700	7033	34Cr4	40	255	360

C	Mn	Cr		
0.30 0.37	0.60 0.90	0.90 1.20		

7218 25CrMo4

a	b	c	f	D	e	g	h	i
52	10	212	700	7218	25CrMo4	50	255	400

C	Mn	Cr	Mo	
0.22 0.29	0.60 0.90	0.90 1.20	0.15 0.30	

1191 C45E (CK45)

a	b	c	f	D	e	g	h	i
62	5	207	630	1191	C45E (CK45)	25	255	300

C	Mn	Cr	Mo	Ni
0.42 0.50	0.50 0.80	0.40	0.10	0.40

7003 38Cr2

a	b	c	f	D	e	g	h	i
59	5	207	600	7003	38Cr2	35	255	330

C	Mn	Cr		
0.35 0.42	0.50 0.80	0.40 0.60		

1181 C35E (CK35)

a	b	c	f	D	e	g	h	i
58	4	–	550	1181	C35E (CK35)	35	–	370

C	Mn	Cr	Mo	Ni
0.32 0.39	0.50 0.80	0.40	0.10	0,40

a. max. hardness (HRC / J 1,5, +H)
b. J-value at which the J 1,5 hardness value has decreased by 5 HRC
c. max. hardness (HB) annealed (+A)
D. Material number
e. abbreviated name
f. min. Strength QT (MPa)

DDDD eeeeeeee

a	b	c	f	D	e	g	h	i
				DDDD	eeeeeeee			

C	Mn	Cr	Mo	Ni
min. max.				

g. min. Toughness QT(J); ISO-V
h. max. Hardness (HB) for the shearability (+S)
i. Ms temperature, °C

* not normed

rev. 02:022007

www.dew-stahl.com

Hardening depth

no responsibility is taken for the correctness of this information