Table 8 — Mechanical properties [a] at room temperature in the quenched and tempered condition (+QT)

Steel designation		Mechanical properties for the ruling section (see EN 10083-1:2006, Annex A) with a diameter (*d*) or for flat products thickness (*t*) of																									
		d ≤ 16 mm *t* ≤ 8 mm					16 mm < *d* ≤ 40 mm 8 mm < *t* ≤ 20 mm					40 mm < *d* ≤ 100 mm 20 mm < *t* ≤ 60 mm					100 mm < *d* ≤ 160 mm 60 mm < *t* ≤ 100 mm					160 mm < *d* ≤ 250 mm 100 mm < *t* ≤ 160 mm				
Name	Number	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.
		MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J
38Cr2	1.7003	550	800 to 950	14	35	-	450	700 to 850	15	40	35	350	600 to 750	17	45	35	-	-	-	-	-	-	-	-	-	-
46Cr2	1.7006	650	900 to 1100	12	35	-	550	800 to 950	14	40	35	400	650 to 800	15	45	35	-	-	-	-	-	-	-	-	-	-
34Cr4 34CrS4	1.7033 1.7037	700	900 to 1100	12	35	-	590	800 to 950	14	40	40	460	700 to 850	15	45	40	-	-	-	-	-	-	-	-	-	-
37Cr4 37CrS4	1.7034 1.7038	750	950 to 1150	11	35	-	630	850 to 1000	13	40	35	510	750 to 900	14	40	35	-	-	-	-	-	-	-	-	-	-
41Cr4 41CrS4	1.7035 1.7039	800	1000 to 1200	11	30	-	660	900 to 1100	12	35	35	560	800 to 950	14	40	35	-	-	-	-	-	-	-	-	-	-
25CrMo4 25CrMoS4	1.7218 1.7213	700	900 to 1100	12	50	-	600	800 to 950	14	55	50	450	700 to 850	15	60	50	400	650 to 800	16	60	45	-	-	-	-	-
34CrMo4 34CrMoS4	1.7220 1.7226	800	1000 to 1200	11	45	-	650	900 to 1100	12	50	40	550	800 to 950	14	55	45	500	750 to 900	15	55	45	450	700 to 850	15	60	45
42CrMo4 42CrMoS4	1.7225 1.7227	900	1100 to 1300	10	40	-	750	1000 to 1200	11	45	35	650	900 to 1100	12	50	35	550	800 to 950	13	50	35	500	750 to 900	14	55	35
50CrMo4	1.7228	900	1100 to 1300	9	40	-	780	1000 to 1200	10	45	30	700	900 to 1100	12	50	30	650	850 to 1000	13	50	30	550	800 to 950	13	50	30
34CrNiMo6	1.6582	1000	1200 to 1400	9	40	-	900	1100 to 1300	10	45	45	800	1000 to 1200	11	50	45	700	900 to 1100	12	55	45	600	800 to 950	13	55	45
30CrNiMo8	1.6580	1050	1250 to 1450	9	40	-	1050	1250 to 1450	9	40	30	900	1000 to 1300	10	45	35	800	1000 to 1200	11	50	45	700	900 to 1100	12	50	45
35NiCr6	1.5815	740	880 to 1080	12	40	-	740	880 to 1080	14	40	35	640	780 to 980	15	40	35	-	-	-	-	-	-	-	-	-	-
36NiCrMo16	1.6773	1050	1250 to 1450	9	40	-	1050	1250 to 1450	9	40	30	900	1100 to 1300	10	45	35	800	1000 to 1200	11	50	45	800	1000 to 1200	11	50	45
39NiCrMo3	1.6510	785	980 to 1180	11	40	-	735	930 to 1130	11	40	35	685	880 to 1080	12	45	40	635	830 to 980	12	50	40	540	740 to 880	13	50	40
30NiCrMo16-6	1.6747	880	1080 to 1230	10	45	-	880	1080 to 1230	10	45	35	880	1080 to 1230	10	45	35	790	900 to 1050	11	50	35	880	900 to 1050	11	50	35
51CrV4	1.8159	900	1100 to 1300	9	40	-	800	1000 to 1200	10	45	30	700	900 to 1100	12	50	30	650	850 to 1000	13	50	30	600	800 to 950	13	50	30
20MnB5	1.5530	700	900 to 1050	14	55	-	600	750 to 900	15	55	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30MnB5	1.5531	800	950 to 1150	13	50	-	650	800 to 950	13	50	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 8 – *(continued)*

Steel designation		Mechanical properties for the ruling section (see EN 10083-1:2006, Annex A) with a diameter (*d*) or for flat products thickness (*t*) of																									
		d ≤ 16 mm *t* ≤ 8 mm					16 mm < *d* ≤ 40 mm 8 mm < *t* ≤ 20 mm					40 mm < *d* ≤ 100 mm 20 mm < *t* ≤ 60 mm					100 mm < *d* ≤ 160 mm 60 mm < *t* ≤ 100 mm					160 mm < *d* ≤ 250 mm 100 mm < *t* ≤ 160 mm				
Name	Name	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.	R_e min.	R_m	*A* min.	*Z* min.	*KV* [b] min.
		MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J	MPa [c]		%	%	J
38MnB5	1.5532	900	1050 to 1250	12	50	-	700	850 to 1050	12	50	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27MnCrB5-2	1.7182	800	1000 to 1250	14	55	-	750	900 to 1150	14	55	60	700 [d]	800 to 1000 [d]	15 [d]	55 [d]	65 [d]	-	-	-	-	-	-	-	-	-	-
33MnCrB5-2	1.7185	850	1050 to 1300	13	50	-	800	950 to 1200	13	50	50	750 [d]	900 to 1100 [d]	13 [d]	50 [d]	50 [d]	-	-	-	-	-	-	-	-	-	-
39MnCrB6-2	1.7189	900	1100 to 1350	12	50	-	850	1050 to 1250	12	50	40	800 [d]	1000 to 1200 [d]	12 [d]	50 [d]	40 [d]	-	-	-	-	-	-	-	-	-	-

[a] R_e: Upper yield strength or, if no yield phenomenon occurs, 0,2 % proof strength $R_{p0,2}$.
R_m: Tensile strength.

A: Percentage elongation after fracture (initial gauge length $L_o = 5{,}65\sqrt{S_0}$; see Table 10, column 7a, line T4).

Z: Reduction in cross section on fracture.
KV: Impact strength of longitudinal Charpy-V-notch test pieces (average of 3 individual values shall meet the minimum specified in the table; no individual value shall be lower than 70 % of the minimum shown in the table.)

[b] For sampling see EN 10083-1:2006 fig.1 and fig.3.

[c] 1 MPa = 1 N/mm^2.

[d] For 40 mm < *d* ≤ 60 mm and 20 mm < *t* ≤ 40 mm.