

**Mindestschraubtiefen nach VDI 2230-1:2015
für Innengewinde in Vergütungsstahl
(Scherfestigkeitsverhältnis $\tau_B / R_m = 0.65$)**



Statik | Ermüdungsfestigkeit | Bruchmechanik
Schrauben, Schweißnähte, Maschinenbauteile
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Scherfestigkeit [N/mm ²]	Festigkeits- klasse	Mindestschraubtiefen [mm] für Nenn Durchmesser											
		M3	M4	M5	M6	M8	M10	M12	M16	M20	M24	M30	M36
267 (C22E)	8.8	4.4	5.6	6.8	8.1	10.5	12.9	15.3	20.0	25.1	29.9	36.9	44.0
	10.9	5.2	6.6	8.1	9.5	12.4	15.3	18.1	23.9	29.3	34.9	43.3	51.7
	12.9	5.8	7.4	9.1	10.7	13.9	17.2	20.4	27.0	33.2	39.5	49.0	58.7
275	8.8	4.3	5.5	6.7	8.0	10.3	12.7	15.1	19.6	24.7	29.3	36.3	43.2
	10.9	5.1	6.5	7.9	9.4	12.2	15.0	17.8	23.4	28.7	34.2	42.4	50.6
	12.9	5.7	7.2	8.9	10.5	13.6	16.8	20.0	26.4	32.4	38.6	47.9	57.3
300	8.8	4.1	5.3	6.4	7.6	9.9	12.1	14.4	18.7	23.5	27.9	34.5	41.1
	10.9	4.8	6.1	7.5	8.9	11.5	14.2	16.8	22.1	27.1	32.2	39.9	47.6
	12.9	5.3	6.8	8.3	9.9	12.8	15.8	18.7	24.7	30.4	36.1	44.8	53.5
325	8.8	4.0	5.1	6.2	7.3	9.5	11.6	13.8	17.9	22.5	26.8	33.0	39.3
	10.9	4.6	5.9	7.2	8.5	11.0	13.5	16.0	21.0	25.8	30.7	37.9	45.2
	12.9	5.1	6.5	7.9	9.4	12.2	15.0	17.8	23.4	28.7	34.2	42.3	50.5
350	8.8	3.8	4.9	5.9	7.1	9.1	11.2	13.3	17.2	21.6	25.7	31.7	37.7
	10.9	4.4	5.6	6.9	8.2	10.6	13.0	15.4	20.1	24.7	29.4	36.3	43.3
	12.9	4.8	6.2	7.6	9.0	11.6	14.3	17.0	22.3	27.3	32.5	40.3	48.1
375	8.8	3.4	4.4	5.4	6.2	8.1	9.9	12.8	16.6	20.8	24.8	30.5	36.3
	10.9	4.3	5.5	6.6	7.9	10.2	12.5	14.8	19.3	23.8	28.3	34.9	41.6
	12.9	4.7	6.0	7.3	8.6	11.2	13.7	16.3	21.3	26.2	31.2	38.6	46.0
400	8.8	3.4	4.3	5.3	6.1	8.0	9.8	11.6	15.2	18.7	22.2	29.4	34.9
	10.9	4.1	5.3	6.4	7.6	9.9	12.1	14.4	18.7	23.0	27.3	33.7	40.1
	12.9	4.5	5.8	7.0	8.3	10.8	13.3	15.7	20.5	25.2	30.0	37.1	44.3
425	8.8	3.3	4.2	5.2	6.0	7.8	9.6	11.4	14.9	18.6	22.0	27.1	32.1
	10.9	4.0	5.1	6.2	7.4	9.6	11.7	13.9	18.1	22.2	26.5	32.6	38.8
	12.9	4.4	5.6	6.8	8.1	10.5	12.8	15.2	19.9	24.4	29.1	35.9	42.7
450	8.8	3.3	4.1	5.1	5.9	7.7	9.4	11.2	14.6	18.3	21.6	26.7	31.6
	10.9	3.9	4.5	6.0	7.1	9.3	11.4	13.5	17.5	21.5	25.6	31.6	37.6
	12.9	4.2	5.4	6.6	7.8	10.2	12.5	14.8	19.3	23.7	28.2	34.8	41.4
475	8.8	3.2	4.0	5.0	5.8	7.5	9.2	10.9	14.3	17.9	21.2	26.2	31.0
	10.9	3.5	4.5	5.5	6.4	8.3	10.2	12.1	16.9	20.8	24.8	30.6	36.4
	12.9	4.1	5.3	6.4	7.6	9.9	12.1	14.4	18.7	23.0	27.4	33.8	40.2
488 (42CrMo4)	8.8	3.1	4.0	4.9	5.7	7.4	9.1	10.8	14.1	17.7	21.0	25.9	30.6
	10.9	3.5	4.5	5.5	6.4	8.3	10.1	12.0	15.7	19.4	22.9	28.3	33.4
	12.9	4.1	5.2	6.3	7.5	9.7	11.9	14.2	18.4	22.7	27.0	33.3	39.6
500	8.8	3.1	4.0	4.8	5.6	7.3	9.0	10.7	14.0	17.5	20.7	25.6	30.3
	10.9	3.5	4.4	5.4	6.3	8.2	10.1	12.0	15.7	19.3	22.8	28.2	33.3
	12.9	4.0	5.1	6.2	7.4	9.6	11.8	14.0	18.2	22.3	26.6	32.8	39.1
520 (34CrNiMo6)	8.8	3.1	3.9	4.8	5.5	7.2	8.8	10.5	13.7	17.2	20.4	25.1	29.8
	10.9	3.5	4.4	5.4	6.2	8.1	10.0	11.8	15.5	19.1	22.6	27.9	33.1
	12.9	3.6	4.6	5.7	6.6	9.4	11.5	13.6	17.8	21.8	26.0	32.1	38.2
550	8.8	3.0	3.8	4.7	5.4	7.1	8.7	10.3	13.4	16.7	19.9	24.5	29.0
	10.9	3.4	4.3	5.3	6.1	7.9	9.8	11.6	15.2	18.7	22.2	27.4	32.5
	12.9	3.6	4.6	5.6	6.5	8.5	10.4	12.3	16.2	19.8	23.5	29.0	36.9
575	8.8	3.0	3.8	4.6	5.4	7.0	8.5	10.1	13.2	16.4	19.5	24.0	28.4
	10.9	3.3	4.2	5.2	6.0	7.8	9.6	11.4	15.0	18.4	21.8	26.9	31.9
	12.9	3.6	4.5	5.6	6.4	8.4	10.3	12.2	16.0	19.7	23.3	28.8	34.1
600	8.8	2.9	3.7	4.6	5.3	6.9	8.4	10.0	13.0	16.2	19.2	23.6	27.9
	10.9	3.3	4.1	5.1	5.9	7.7	9.4	11.2	14.7	18.1	21.4	26.4	31.3
	12.9	3.5	4.5	5.5	6.3	8.3	10.1	12.0	15.8	19.5	23.1	28.5	33.8
625	8.8	2.9	3.7	4.5	5.3	6.8	8.4	9.9	12.8	16.0	18.9	23.3	27.5
	10.9	3.2	4.1	5.0	5.8	7.5	9.2	11.0	14.4	17.7	21.0	25.9	30.7
	12.9	3.5	4.4	5.4	6.2	8.1	10.0	11.9	15.6	19.2	22.7	28.1	33.3
650 (36NiCrMo16)	8.8	2.9	3.7	4.5	5.3	6.8	8.3	9.8	12.7	15.8	18.7	23.0	27.2
	10.9	3.1	4.0	4.9	5.7	7.4	9.1	10.8	14.2	17.4	20.6	25.5	30.2
	12.9	3.4	4.3	5.3	6.1	8.0	9.8	11.7	15.4	18.9	22.4	27.6	32.8
675	8.8	2.9	3.7	4.5	5.3	6.8	8.3	9.8	12.7	15.7	18.6	22.8	26.9
	10.9	3.1	4.0	4.8	5.6	7.3	9.0	10.6	13.9	17.1	20.3	25.0	29.6
	12.9	3.3	4.2	5.2	6.0	7.9	9.7	11.5	15.1	18.6	22.0	27.2	32.2

farblich hervorgehobene Werte sind:

- : $1.5 \cdot d \leq m_{ges} \leq 3 \cdot d$ - nur mit Vorsicht und gesonderter Prüfung zu verwenden / ●: $m_{ges} > 3 \cdot d$ - nach Möglichkeit zu vermeiden

Trotz sorgfältiger Prüfung können Fehler nicht ausgeschlossen werden. Für fehlerhaften Inhalt wird keine Haftung übernommen.