

**Mindestschraubtiefen nach VDI 2230-1:2015**  
**für Innengewinde in Baustahl**  
**(Scherfestigkeitsverhältnis  $\tau_B / R_m = 0.8$ )**



Statik | Ermüdungsfestigkeit | Bruchmechanik  
 Schrauben, Schweißnähte, Maschinenbauteile  
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Scherfestigkeit [N/mm <sup>2</sup> ]	Festigkeits- klasse	Mindestschraubtiefen [mm] für Nenndurchmesser											
		M3	M4	M5	M6	M8	M10	M12	M16	M20	M24	M30	M36
264 (S235)	8.8	4.4	5.6	6.9	8.2	10.6	13.0	15.4	20.1	25.3	30.1	37.2	44.3
	10.9	5.2	6.6	8.1	9.6	12.5	15.4	18.3	24.1	29.6	35.2	43.6	52.1
	12.9	5.8	7.4	9.1	10.8	14.0	17.3	20.6	27.3	33.5	39.8	49.5	59.2
280	8.8	4.3	5.5	6.7	7.9	10.2	12.6	14.9	19.4	24.4	29.0	35.9	42.7
	10.9	5.0	6.4	7.8	9.3	12.0	14.8	17.6	23.1	28.4	33.8	41.8	49.9
	12.9	5.6	7.1	8.8	10.3	13.4	16.6	19.7	26.0	32.0	38.0	47.2	56.5
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
320	8.8	4.0	5.1	6.2	7.4	9.6	11.7	13.9	18.1	22.7	27.0	33.3	39.6
	10.9	4.6	5.9	7.2	8.6	11.1	13.6	16.2	21.2	26.0	31.0	38.3	45.7
	12.9	5.1	6.5	8.0	9.5	12.3	15.1	18.0	23.6	29.0	34.5	42.8	51.1
340	8.8	3.9	5.0	6.0	7.2	9.3	11.4	13.5	17.5	21.9	26.1	32.2	38.3
	10.9	4.5	5.7	7.0	8.3	10.7	13.2	15.6	20.4	25.1	29.9	36.9	44.0
	12.9	4.9	6.3	7.7	9.1	11.8	14.5	17.3	22.7	27.9	33.1	41.1	49.0
360 (S355)	8.8	3.7	4.8	5.8	6.9	9.0	11.0	13.1	17.0	21.3	25.3	31.2	37.2
	10.9	4.3	5.6	6.8	8.0	10.4	12.8	15.2	19.8	24.3	28.9	35.7	42.6
	12.9	4.8	6.1	7.5	8.8	11.4	14.1	16.7	21.9	26.9	32.0	39.6	47.2
380	8.8	3.4	4.4	5.3	6.2	8.0	9.9	11.7	16.4	20.7	24.6	30.3	36.0
	10.9	4.2	5.4	6.6	7.8	10.1	12.4	14.7	19.2	23.6	28.1	34.7	41.3
	12.9	4.6	5.9	7.2	8.6	11.1	13.6	16.2	21.2	26.0	30.9	38.3	45.6
400 (S420)	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
420	8.8	3.3	4.2	5.2	6.0	7.9	9.6	11.4	15.0	18.6	22.1	27.2	32.2
	10.9	4.0	5.1	6.3	7.4	9.6	11.8	14.0	18.2	22.4	26.6	32.8	39.1
	12.9	4.4	5.6	6.9	8.1	10.5	12.9	15.3	20.0	24.6	29.2	36.1	43.0
440	8.8	3.3	4.2	5.1	5.9	7.7	9.5	11.3	14.8	18.4	21.8	26.9	31.8
	10.9	3.9	5.0	6.1	7.2	9.4	11.5	13.6	17.7	21.8	26.0	32.0	38.1
	12.9	4.3	5.5	6.7	7.9	10.3	12.6	15.0	19.5	24.0	28.5	35.2	41.9
460	8.8	3.2	4.1	5.0	5.8	7.6	9.3	11.1	14.5	18.1	21.5	26.5	31.4
	10.9	3.6	4.5	5.5	6.4	8.3	11.2	13.3	17.3	21.2	25.3	31.2	37.1
	12.9	4.2	5.4	6.5	7.8	10.0	12.3	14.6	19.0	23.4	27.8	34.4	40.9
480	8.8	3.2	4.0	4.9	5.7	7.4	9.1	10.9	14.2	17.8	21.1	26.0	30.9
	10.9	3.5	4.5	5.5	6.4	8.3	10.2	12.1	15.8	19.4	23.0	30.4	36.2
	12.9	4.1	5.2	6.4	7.6	9.8	12.0	14.3	18.6	22.9	27.2	33.6	40.0
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	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
540	8.8	3.0	3.8	4.7	5.5	7.1	8.7	10.3	13.5	16.9	20.0	24.7	29.2
	10.9	3.4	4.3	5.3	6.1	8.0	9.8	11.7	15.3	18.9	22.4	27.6	32.7
	12.9	3.6	4.6	5.6	6.5	8.5	10.4	12.4	17.4	21.3	25.4	31.4	37.3
560	8.8	3.0	3.8	4.6	5.4	7.0	8.6	10.2	13.3	16.6	19.7	24.3	28.7
	10.9	3.4	4.3	5.2	6.1	7.9	9.7	11.5	15.1	18.6	22.1	27.2	32.3
	12.9	3.6	4.6	5.6	6.5	8.4	10.3	12.3	16.1	19.8	23.5	28.9	34.2
568 (S690)	8.8	3.0	3.8	4.6	5.4	7.0	8.6	10.1	13.2	16.5	19.6	24.1	28.6
	10.9	3.3	4.2	5.2	6.0	7.8	9.6	11.4	15.0	18.5	21.9	27.1	32.1
	12.9	3.6	4.5	5.6	6.5	8.4	10.3	12.2	16.1	19.7	23.4	28.9	34.2
580	8.8	2.9	3.8	4.6	5.4	6.9	8.5	10.1	13.1	16.4	19.4	23.9	28.3
	10.9	3.3	4.2	5.2	6.0	7.8	9.5	11.3	14.9	18.3	21.7	26.8	31.8
	12.9	3.6	4.5	5.5	6.4	8.3	10.2	12.2	16.0	19.7	23.3	28.7	34.0
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

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.