

Tiltekningskraft fra tiltrekningsmoment iht. sb-Skrueforbindelser 2016

DIN 976

$$F := 100 \text{ kN}$$

$$\varnothing := 41.44 \text{ mm}$$

$$D_1 := 38.8 \text{ mm}$$

$$P := 4.5 \text{ mm}$$



- a) The Stud Bolt will be according to DIN 976.
 b) Threads will be F.T & conform to Class 2A.
 c) Material High grade carbon/alloy steel & stainless steel.
 d) Heat Treatment Property Class Grade A2, A4, B, B7, B7M, B8, B8M, B8T, L7, L7M, L43.
 e) Coating & Marking will be done as per requirement.
 f) Tolerance of Total Length of Stud Bolt is $-0.0/+3.0$ In required length.
 g) Chemical & Mechanical Properties as per ISO 898-1 or DIN 267.

Nominal	Pitch of thread P	Thread Length b	Major Diameter (D)	Pitch Diameter (D1)	Minor Diameter (D2)
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$$\alpha := 30 \text{ deg} \quad \text{halve gjengevinkelen}$$

$$r_m := \frac{D_1}{2} = 19.4 \text{ mm}$$

$$\varphi := \operatorname{atan}\left(\frac{P}{\pi \cdot \varnothing}\right) = 1.9797 \text{ deg}$$

$$\mu := 0.14 \quad \text{friksjonskoeffisient gjenge}$$

$$\varepsilon_1 := \operatorname{atan}\left(\frac{\mu}{\cos(\alpha)}\right) = 0.1603$$

$$M_V := F \cdot \tan(\varphi + \varepsilon_1) \cdot r_m = 382.8128 \text{ N m}$$

$$\mu' := \mu \quad \text{friksjonsfaktor mellom skruehode / mutter og underlag}$$

$$N := 65 \text{ mm} \quad \text{nøkkelvidde}$$

$$d_h := \varnothing + 3 \text{ mm} \quad \text{antatt}$$

$$r'_m := \frac{N + d_h}{4} = 27.36 \text{ mm}$$

$$M_s := \mu' \cdot F \cdot r'_m = 383.04 \text{ N m}$$

$$M := M_s + M_V = 765.8528 \text{ N m}$$

$$M_s = F_f \cdot r'_m = \mu' \cdot F \cdot r'_m$$

hvor: F_f = friksjonskraft

F = aksialkraften

μ' = friksjonskoeffisienten mellom skruehode / mutter og underlag

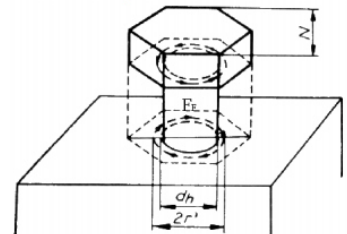
r'_m = den radius som friksjonskraften antas å virke på

$$r'_m = \frac{N + d_h}{4}$$

hvor: N = nøkkelvidde

d_h = hullets diameter

N og d_h finner du i skruetabeller.



Figur 4.8
Ved tiltrekking oppstår friksjonskraft F_f mellom skruehode og underlag.