

ETAG 001 resultant flexural resistance of anchor

$$M_{Rk,s} = M_{Rk,s}^0 (1 - N_{Sd}/N_{Rd,s}) \quad [\text{Nm}] \quad (5.5a)$$

5.2.3.2 Steel failure

b) Shear load with lever arm

The characteristic resistance of an anchor, $V_{Rk,s}$, is given by Equation (5.5).

$$V_{Rk,s} = \frac{\alpha_M M_{Rk,s}}{\ell} \quad [\text{N}] \quad (5.5)$$

where

α_M = see 4.2.2.4

ℓ = lever arm according to Equation (4.2)

$$M_{Rk,s} = M_{Rk,s}^0 (1 - N_{Sd}/N_{Rd,s}) \quad [\text{Nm}] \quad (5.5a)$$

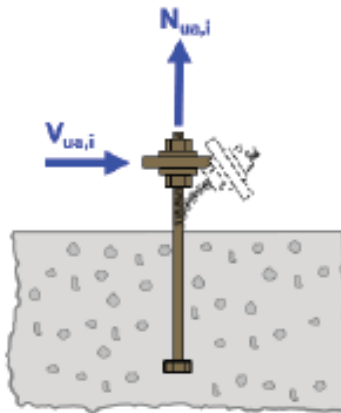
$$N_{Rd,s} = N_{Rk,s} / \gamma_{Ms}$$

$N_{Rk,s}$, γ_{Ms} to be taken from the relevant ETA

$$M_{Rk,s}^0 = 1.2 W_{el} f_{uk} \quad [\text{Nm}] \quad (5.5b)$$

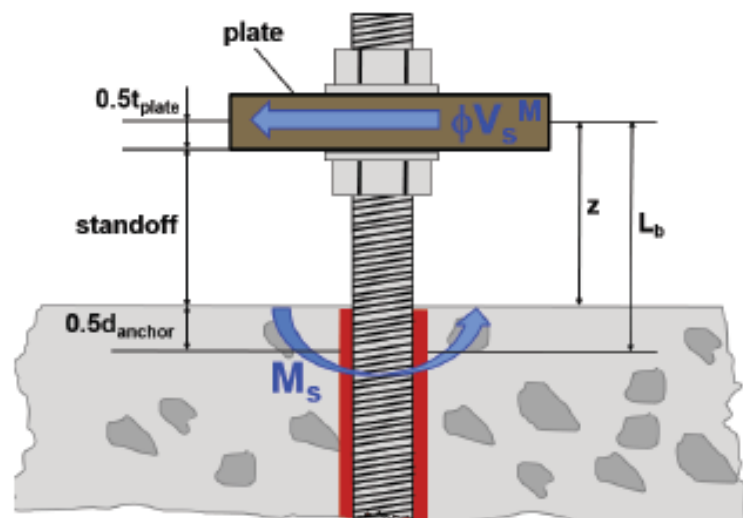
The figures below illustrate ETAG 001 design assumptions with respect to bolt bending. PROFIS Engineering nomenclature for ACI 318 calculations is used in the illustrations.

Shear and tension load act on an anchorage with standoff.



PROFIS Engineering calculation.

$$\phi V_s^M = \phi \left(\frac{\alpha_M M_s}{L_b} \right)$$



Reference the **Equations** section of the report for more information on the following PROFIS Engineering parameters.

M_s^0 : Characteristic flexural resistance of the anchor

$(1 - N_{ua}/\phi N_{sa})$: Reduction factor for tension load

Reference the **Variables** section of the report for more information on the following PROFIS Engineering parameters:

N_{ua} : Factored tension load

ϕN_{sa} : Design steel strength in tension

Reference the **Calculations** section of the report for more information on the following PROFIS Engineering parameters.

M_s^0 : Characteristic flexural resistance of the anchor

$(1 - N_{ua}/\phi N_{sa})$: Reduction factor for tension load

M_s : Resultant flexural resistance of the anchor