



Bolt M10-8.8 **without plasticity**
 Single-Pass Adaptive: computing time 27 minutes

$E := 210000 \text{ MPa}$

$\sigma_{vm_max} := 1995 \text{ MPa}$

$c := \frac{\sigma_{vm_max}^2}{E} = 18.953 \text{ MPa}$

$F_{preload_el} := 34.5 \text{ kN}$

$\sigma_{true} := 684 \text{ MPa}$

acc. to Neuber

(preload force is lost due to plasticity)

Bolt M10-8.8 **with plasticity**
 but **Quick Check**

$F_{preload_pl} := 30 \text{ kN}$

