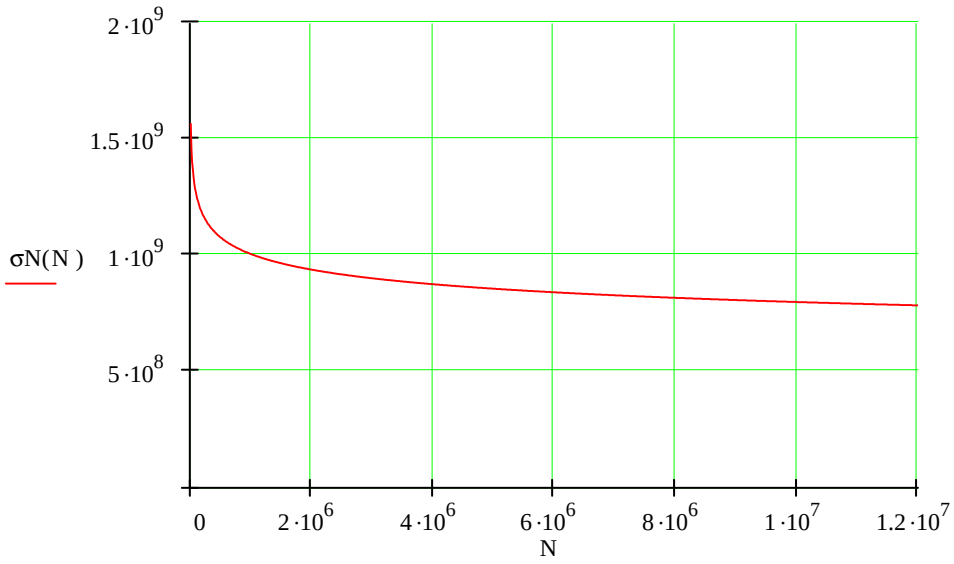
$\sigma D := 800 \cdot \frac{N}{mm^2}$

$ND := 10^7$

$m := 10$

$\sigma N(N) := \sqrt[m]{\frac{\sigma D^m \cdot ND}{N}}$



$N := 8 \cdot 10^6$

$\sigma N(N) = 818.052 \frac{N}{mm^2}$

$d := 70 \cdot mm$

$A := \frac{d^2 \cdot \pi}{4}$

$S := 3$

$\sigma d := \frac{\sigma N(N)}{S}$ $\sigma d = 272.684 \frac{N}{mm^2}$

$F := \sigma d \cdot A$ $F = 1.049 \times 10^6 N$