PRESSION DE HERTZ

CYLINDRE DANS CAVITE CYLINDRIQUE

Hypothèse admise Jeux 0.1 mm entre cylindre et longueur d'appui 1 mm

VIS ACIER

$Eac := 220000 \cdot \frac{N}{mm^2}$

$\nu ac := 0.39$

$Rac := 4.95 \cdot mm$

PLAQUE ALU

$Eal := 72500 \cdot \frac{N}{mm^2}$

$\nu al := .35$

$Ral := 5 \cdot mm$

$Ph := 3500 \cdot N$

$Lh := 1 \cdot mm$

$$\sigma h := 0.5642 \cdot \sqrt{\frac{Ph}{Lh} \cdot \frac{\frac{Ral - Rac}{Ral \cdot Rac}}{\left(\frac{1 - \nu ac^2}{Eac} + \frac{1 - \nu al^2}{Eal} \right)}}$$

$$\sigma h = 375.562 \cdot \frac{N}{mm^2}$$

$$Ce := \frac{1 - \nu ac^2}{Eac} + \frac{1 - \nu al^2}{Eal} \qquad Ce = 1.596 \times 10^{-11} \frac{1}{Pa}$$

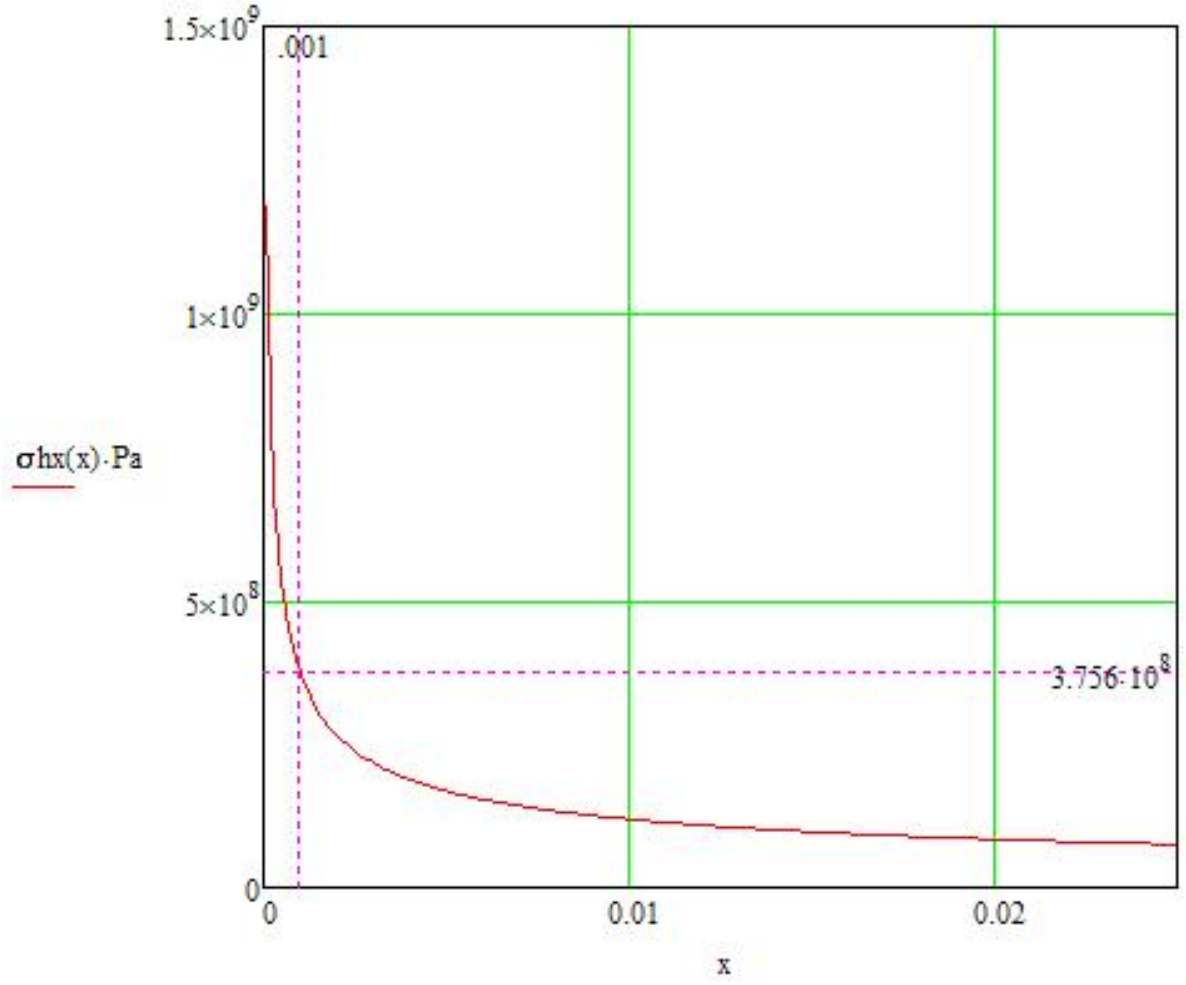
$$Kd := \frac{2Ral \cdot 2 \cdot Rac}{2Ral - 2Rac} \qquad Kd = 990 \cdot mm$$

$$\sigma c := 0.789 \cdot \sqrt{\frac{\frac{Ph}{Lh}}{Kd \cdot Ce}}$$

$$\sigma c = 371.373 \cdot \frac{N}{mm^2}$$

$x := .1mm, .2mm .. 25mm$

$$\sigma hx(x) := 0.5642 \cdot \sqrt{\frac{Ph}{x} \cdot \frac{\frac{Ral - Rac}{Ral \cdot Rac}}{\left(\frac{1 - \nu ac^2}{Eac} + \frac{1 - \nu al^2}{Eal}\right)}} *$$



$$\sigma hx(1 \cdot mm) = 375.562 \frac{N}{mm^2}$$

$$\sigma hx(1 \cdot mm) = 3.756 \times 10^8 Pa$$

$\sigma hx(x) =$

$1.188 \cdot 10^3$	$\frac{N}{mm^2}$
839.782	
685.679	
593.816	
531.125	
484.848	
448.882	
419.891	
395.877	
375.562	
358.084	
342.84	
329.39	
...	