CORRIGE

Question n°1 :

$$\text{Pression de contact} = \frac{\frac{800\times10}{4}}{0{,}180\times0{,}180} = 0{,}062.10^{6}\ Pa$$

19,65

Question n°2 :

$$\text{Charge} = N = \frac{800\times10}{4} = 2000\ N$$

$$F_c = \frac{\pi^2.E.I}{L_k^2} = \frac{\pi^2.2{,}1.10^{11}.19{,}65.10^{-8}}{1{,}5^2} = 181\ 009\ N$$

Question n°3 :

$$\sigma_{t\ Rampe} = \frac{P.D_m}{2.e} = \frac{6.10^5\times(0{,}0337-0{,}003)}{2\times0{,}003} = 3{,}1.10^{6}\ Pa$$

$$\sigma_{t\ Tube} = \frac{P.D_m}{2.e} = \frac{6.10^5\times(0{,}150-0{,}004)}{2\times0{,}004} = 11{,}0.10^{6}\ Pa$$

$$\frac{R_e}{s} = \frac{235}{1} = 235\ MPa$$