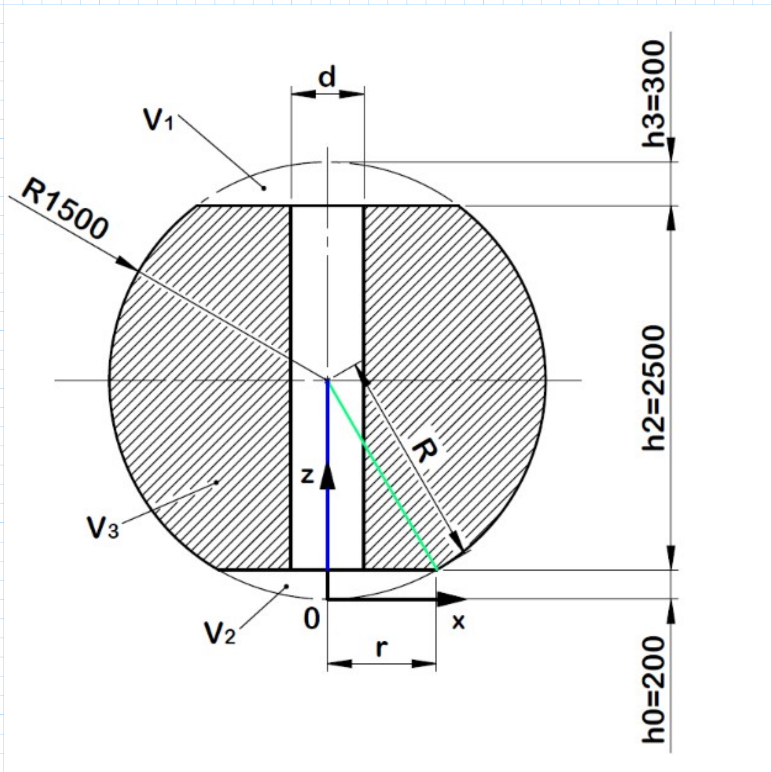

$R := 1500$ $\quad d := 200$

$$V_{tot} := \frac{4}{3} \cdot \pi \cdot R^3 = 1.414 \cdot 10^{10}$$

Radius of the wall as function of z:

$$r(z) := \sqrt{R^2 - (z - R)^2}$$

...good old Phytagoras...

$$V_1 := 2 \cdot \pi \cdot \int_{2700}^{3000} \int_{0}^{r(z)} r \, dr \, dz = 3.958 \cdot 10^8$$

$$V_2 := 2 \cdot \pi \cdot \int_{0}^{200} \int_{0}^{r(z)} r \, dr \, dz = 1.801 \cdot 10^8$$

$$V_3 := 2 \cdot \pi \cdot \int_{200}^{2700} \int_{\frac{d}{2}}^{r(z)} r \, dr \, dz = 1.348 \cdot 10^{10}$$

$$V_4 := \left(\frac{\pi}{4} \cdot d^2\right) \cdot (2500) = 7.854 \cdot 10^7$$

$$\frac{V_1 + V_2 + V_3 + V_4}{V_{tot}} = 1$$

$$\frac{2 \cdot \pi \cdot \int_{2700}^{3000} \int_{0}^{r(z)} z \cdot s \, \mathrm{d}s \, \mathrm{d}z}{V_1} = 2801.786$$

$$\frac{2 \cdot \pi \cdot \int_{0}^{200} \int_{0}^{r(z)} z \cdot s \, \mathrm{d}s \, \mathrm{d}z}{V_2} = 132.558$$

$$\frac{2 \cdot \pi \cdot \int_{200}^{2700} \int_{\frac{d}{2}}^{r(z)} z \cdot s \, \mathrm{d}s \, \mathrm{d}z}{V_3} = 1480.34$$