ANSWERS – VOLUME 1: EQUILIBRIUM

Chapter 7, Gas Pressures and Hydrostatic Pressures

Remarks: See §7.2, example 1, page 246 till 250

Answers:

a. $n = 4800 \,\mathrm{N/m}$

- b. At the concrete beam: $n_v = 2400\sqrt{3} \text{ N/m} = 4157 \text{ N/m}$ $\rightarrow A_{\text{beam}} = 0.1\sqrt{3} \text{ m}^2 = 0.173 \text{ m}^2$
- c. The horizontal load on the ring belt is an equally distributed load pointing to the outside of the structure and equal to the horizontal component of the membrane force: $n_{\rm h} = 2400 \,{\rm N/m}$
 - This creates tensile forces in the tie-rods between the concrete beams. $N_{\text{tierod}} = 6000 \text{ N}$

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