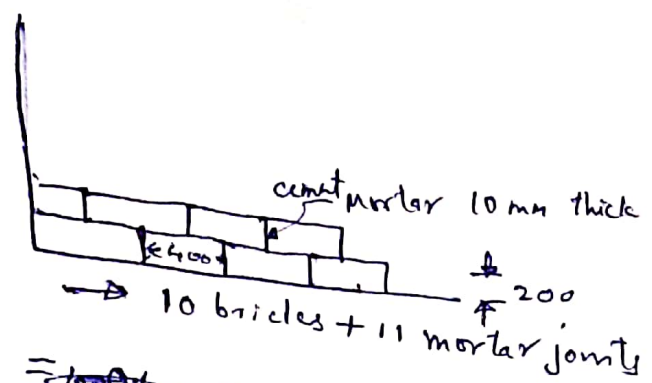


$$\begin{aligned} & 15 \text{ bricks} + \\ & 16 \text{ mortar joints} \\ \Rightarrow & 15 \times 0.20 + 16 \times 0.01 \\ & = 3.16 \text{ m} \end{aligned}$$



$$\begin{aligned} & \text{Total length} = 10 \times 0.40 + 11 \times 0.01 = 4.11 \text{ m} \\ & \text{Total height} = 3.16 \text{ m} \end{aligned}$$

Suppose you use Porotherm Bricks of size $200 \text{ mm} \times 200 \text{ mm} \times 400 \text{ mm}$ ($8'' \times 8'' \times 16''$) for brick wall 200 mm thick. Consider a brick wall 200 mm thick of dimensions $4.11 \text{ m} \times 3.16 \text{ m}$ as shown above.

Total Volume of brick wall = $4.11 \times 3.16 \times 0.20 = 2.60 \text{ m}^3$

Volume of bricks alone = $\underbrace{10 \times 15}_{\text{number}} \times 0.20 \times 0.20 \times 0.40 = 2.40 \text{ m}^3$

Volume of cement mortar joints alone = $2.60 - 2.40 = 0.20 \text{ m}^3$

Suppose the wall is plastered on both sides. Say the total thickness of plaster is 25 mm .

Volume of total plastered area = $4.11 \times 3.16 \times 0.025$ (plaster) = 0.32 m^3

\therefore Total volume of mortar & plaster = $0.20 + 0.32 = 0.52 \text{ m}^3$

Total volume of brickwork + plaster = $2.60 + 0.32 = 2.92 \text{ m}^3$

Density of brick = 780 kg/m^3 . Density of mortar/plaster = 2200 kg/m^3

\therefore Density of plastered brick wall =

$$(2.40 \times 780 + 0.52 \times 2200) / 2.92 = 1033 \text{ kg/m}^3$$