Measuring Masonry Work

Masonry Work

- Clay Bricks
- Concrete Bricks
- Concrete Blocks
- Natural and Artificial Stone

Measuring Masonry Work

- Bricks and concrete blocks are measured by number
- First, the area of Masonry is determined
- Then a factor is applied to determine the number of masonry units required for the area.
- In addition, other items associated with masonry must also be taken off including mortar, metal ties, wire reinforcement
- In accordance with the general, masonry work is measured “net in place”

Brick Masonry

- Measurement of brick is affected by many factors including:
  - Size of brick
  - Size of joints between units
  - Wall thickness (for brick walls)
  - Pattern of brick bond applied
- Amount of mortar required is determined from the size of brick and the thickness of the mortar joint.
- Estimators also use reference books that provide the quantities of brick (per sq meter) and the volume of mortar (per 1000 brick)
- Brick courses that are laid differently can be measured by length as “Extra overs”. “Extra over” means that additional cost of material and labor is required.

Concrete Blocks

- Concrete blocks come in varying sizes. The modular size is 200 x 200 x 400 mm
- Simpler to deal with than Brick
- Quantities are determined as in the case of bricks

Determining Quantities Masonry Units and Mortar

1. Determine AREA where masonry units are used
2. Determine the number of units by dividing the AREA by the face area of the masonry unit
3. For mortar
   - Find volume of masonry unit with mortar
   - Find volume of masonry unit alone
   - Determine the mortar volume by finding the difference of the two items above

Bricks

- Nominal size: 100 x 67 x 200 mm
- Specified size: 90 x 57 x 190 mm
- Number of bricks per square meter (running bond)
- 1 / (0.067 x 0.200) = 74.63 bricks

Modular Concrete Block

- Nominal size: 200 x 200 x 400 mm
- Specified size: 190 x 190 x 390 mm
- Number of blocks per square meter
- 1 / (0.200 x 0.400) = 12.5 blocks

Modular Brick

- Nominal size: 100 x 67 x 200
- Specified size: 90 x 57 x 190
- Volume of brick and mortar per 1000 bricks
  - 1000 x 0.100 x 0.067 x 0.200 = 1.34 m3
- Volume of brick alone
  - 1000 x 0.090 x 0.057 x 0.190 = 0.9747 m3
- Volume of mortar
  - 1.34 – 0.9747 = 0.3653 m3

Measuring Notes

- Quantities are measured “net in place”
- Masonry work for curved elements are measured separately
- Mortar is measured by volume
- Reinforcement is measured in linear units
- Incorporating items such as anchor bolts, sleeves, brackets in masonry work must be fully described and enumerated

Measuring Notes

- Bricks
  - Bricks are measured in units.
  - Facing brick is measured separately
  - Brick ties are enumerated and described
- Concrete Blocks
  - Measured in units per type and size
  - Foam insulation, when used in blocks, must be described and quantified by volume
  - Lintel blocks are measured linearly as ‘extra over’
  - Concrete fill to core or lintel blocks is measured by volume for each type or strength
  - Rebar to core fill or lintel blocks is measured linearly by size and type.