Compressive Strength Experiment

**Apparatus**

Compression testing machine, the compression plate of which shall have ball seating in the form of portion of a sphere center of which coincides with the centre of the plate.

### Sampling of Bricks

Remove unevenness observed the bed faces of bricks to provide two smooth parallel faces by grinding. Immerse the bricks in water at room temperature for 24 hours, then remove the specimen and drain out any surplus moisture at room temperature.

Fill the frog and all voids in the bed faces flush with cement mortar (1 cement, 1 clean coarse sand of grade 3mm and down). Store it under the damp jute bags for 24 hours filled by immersion in clean water for 3 days. Remove and wipe out any traces of moisture.

### Procedure of Compressive Strength Test on Bricks

1. Place the specimen with flat face s horizontal and mortar filled face facing upwards between plates of the testing machine.
2. Apply load axially at a uniform rate of 14 N/mm2 (140 kg/cm2) per minute till failure occurs and note maximum load at failure.
3. The load at failure is maximum load at which the specimen fails to produce any further increase in the indicator reading on the testing machine.

### Calculation

**Compressive Strength of Bricks = Maximum Load at Failure (N)/Average area of bed face (mm2)**

**Range Calculation**

Maximum compressive strength =

Contact area =

Maximum expected load =

The range to be selected is …………………

### Result

Average compressive strength of the given bricks =………….. N/mm2

### Specifications of Bricks

**Speciation of Common Clay Building Bricks**

**Dimensions**: The standard size of clay bricks shall be as follows

|  |  |  |
| --- | --- | --- |
| **Length (mm)** | **Width (mm)** | **Height (mm)** |
| 190 | 90 | 90 |
| 190 | 90 | 40 |

### Classification of Bricks based on Compressive Strength

The common burnt clay shall be classified on the basis of average compressive strength as given in table.

|  |  |  |
| --- | --- | --- |
| **Bricks Class Designation** | **Average compressive strength of Bricks** | |
| **Not less than (N/mm2)** | **Less than (N/mm2)** |
| 350 | 35 | 40 |
| 300 | 30 | 35 |
| 250 | 25 | 30 |
| 200 | 20 | 25 |
| 175 | 17.5 | 20 |
| 150 | 15 | 17.5 |
| 125 | 12.5 | 15 |
| 100 | 10 | 12.5 |
| 75 | 7.5 | 10 |
| 50 | 5 | 7.5 |
| 35 | 3.5 | 5 |