Practical No.9: Assemble one and half Brick thick wall in a given Bond.

I. Practical Significance- Brick masonry is a process of arranging bricks in courses in order to develop longitudinal and transverse interlocking for individual bricks. Assembling a one and a half brick thick wall in a given bond results in practical outcomes related to structural integrity, uniform appearance, proper load distribution, construction efficiency, and ease of maintenance. These outcomes collectively contribute to the overall success and longevity of the constructed wall.

II. Industry or Employer Expected Outcome-

Undertake safe building construction practices with relevant building materials.

III. Course Level Learning Outcome-

Undertake the given type of building construction activity for the given component of building structure.

IV. Laboratory Learning Outcome-

Assemble one and half Brick thick wall in a given Bond. (English Bond).

V. Relevant Affective domain related Outcome

1. Follow safety practices & precautions.
2. Demonstrate working as a leader/a team member.
3. Maintain tools and equipment. Practice good housekeeping

VI. Relevant Theoretical Background

1. Cement mortar is used for plastering of stone and brick masonry.
2. It is also used for grouting and guniting.

Properties of cement mortar-

Brick masonry is the arrangement of bricks in successive courses in order to tie brickwork Together to achieve maximum strength called bond. It is required to know importance of Selection and soaking of bricks. It is required to make use of line string, plumb-bob, and Spirit level to maintain verticality and horizontally in the construction of brick wall in English Bond. This bond is produced by laying alternate courses of headers and stretchers.

For breaking Joints vertically, it is essential to place queen closer after the header quoin in the Heading course

5. The first queen closure is also fixed as corner brick. Check the level and alignment. Lay other bricks to form thickness of one and half brick thick wall.
6. After laying first course spread the mortar over entire course and arrange the bricks to get bond.
7. Similarly lay down the corner at another end of wall the corner construction will guide for filling between bricks of various courses.
8. Stretch the line string along top of the first course laid at each corner of wall the course is then raised. The line string is then shifted up and second course is constructed this process is repeated for consecutive courses.
9. The verticality and horizontality is checked by plumb bob and spirit level for every course.
10. The joints should be cleaned after every day's work.

XI. Observation Table

Sr.No.	Type of bond	No. of bricks	Observation
1	stretcher bond	10	simple pattern
2	Header bond	12	strong bond
3	English bond	14	strongest bond
4	Flemish bond	13	Asthetic but needs
5	Rat trap bond	11	better thermal insulation

XII. Result

We have prepared cement mortar of properion $\frac{1}{4}$

XIII. Interpretation of results

if 1:4 we had taken 1 part of the cement and four parts as a sand

XIV. Conclusions and Recommendations

1:4 this proportion for plaster 1:6 this praportion use for brick weight.

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XV. Practical Related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO. Write answers of minimum three questions.

1. Suggest suitable type of bond for compound wall and partition wall.
2. Explain the method to break the continuity of vertical joint.
3. State the function of line string, plumb bob, masons square, level tube.
4. Give the reasons for following.
   a) The bricks are soaked in water before its use
   b) Brickwork is kept moist for seven days
   c) English bond is stronger than Flemish bond
   d) The frog is kept upward while placing in position.

Q. 1) ——————> ?

Ans:- Compound walls should be strong weather resistance, and durable. the following bond types are suitable :- ① English bond ② Flemish bond ③ Stretcher bond ④ Rat trap bond.

Partition wall:- partition wall are primarilly used for dividing spaces and do not need as much strength as compound wall. the following bond types are suitable ① stretcher bond ② Hollow Block bond ③ gypsum Board or drywall portion ④ glass Brick bond.

Q. 2) ——————> ?

Ans:- Breacking the cantincaity of vertical joints is crucial in brick mesonary to ensure structural stability strength and proper load distribution continuous verticle joints can create weak paints in the wall, making it subceptible to crecks and failure. Here are the common methods used to break the contity of Verticaly joints.

Q. 3) ⟶ ?

Ans:- 1) line string :- used in mansary and construction to ensure straingth alignment of bricks or blocks while laying wall. it helps maintain a uniform and level course.

2) plumb bob :- A painted weight suspended from a string that helps determine verticle alignment it is essential for cheaking weather a wall or column is perfectly upright.

XVI. References/ suggestions for further Reading

Sr. No.	Links	Discription
1	https://youtu.be/M4fle5ov0JY?si=Z1pdw_njZMV38o7K	English bond
2	https://youtu.be/1R8mW2ZJJCo?si=bDeURVU00cMxgdOl	English bond