

SECTION 10

MASONRY

OBJECTIVE

The purpose of special observation (level 1 or 2) for masonry is to verify that the workmanship and materials meet the minimum standards required by code and by the approved project plans and specifications. This is particularly difficult in masonry work where so much is dependent upon the capabilities of the individual mason. This requires the inspector to rely on knowledge, experience and judgment while applying the requirements of the applicable code to the particular condition.

The Statement of Special Inspections, prepared by the responsible design professional, will define the special inspection task(s) required. Qualified special inspectors who diligently perform the duties listed below while under the direct supervision of the materials engineering laboratory can best achieve this objective.

OBSERVATION DUTIES

A. Documents

1. Review the approved plans, specifications, and Statement of Special Inspections with the masonry contractor and architect's representative in a preconstruction meeting.
2. Verify whether high lift or low lift procedures have been approved and documented for use.

B. Mill Test Reports

1. Verify that mill test certifications for unit masonry, cement, reinforcing steel, and embedded anchors have been furnished by supplier and are acceptable to the architect/engineer.

C. Sampling of Materials

1. Sample and verify that the following materials are delivered to laboratory for testing when required:
 - a) Concrete block or brick
 - b) Aggregates and cement for mortar and grout
 - c) Reinforcing steel as delivered

D. Storage of Materials

1. Verify cement, lime, block, and brick are supported on pallets and covered to protect from exposure to excessive moisture or drying.
2. Verify aggregates for mortar and grout are stored free from contamination and in such a manner as to minimize segregation.
3. Verify reinforcement, ties, and metal accessories are stored off the ground and in a manner to prevent permanent distortions.

E. Preparation for Lay-Up

1. Verify size and spacing of reinforcing dowels.
2. Verify length of dowel protruding from footing is of sufficient length to allow for the splicing of vertical reinforcing steel as required.
3. Verify that foundation concrete is clean and prepared as required by specifications.

F. Lay-Up or Placing of Masonry Units

1. Verify that cleanouts are provided for first course of each pour, if high lift method is used.
2. Verify plumb and lay-up configuration.
3. Verify moisture condition of masonry units.
4. Verify that proper mortar ingredients and batching techniques are being used and prepare mortar compression test specimens.
5. Verify mortar time on board.

6. Verify that head joints are the same thickness as face shells or that full head joints are used when specified.
7. Verify that mortar extrusions (fins) are cleaned off inside.
8. Verify whether joints are tooled as specified.
9. Verify required frequency of masonry wall prisms and observe construction of same as specified.
10. Observe horizontal and vertical reinforcing steel to verify:
 - a) Reinforcing steel is of specified size and grade.
 - b) Reinforcing steel is located and spliced as specified.
 - c) Lap splices are staggered in bond beams and corners as required.
 - d) Hooks are specified size and bent as required.
 - e) Ties are specified size, spacing, and bent as required.
 - f) Reinforcing steel is properly secured and minimum clearances are as required.
11. Verify embedded items are:
 - a) Placed at proper location and secured.
 - b) Proper size and clearances are as required.
12. Verify masonry is protected from weather:
 - a) When ambient or CMU temperature falls below 40°F.
 - b) When ambient temperature exceeds 100°F or 90°F (wind velocity greater than 8 mph).

G. Pre-grouting Tasks

1. Verify that cells and starting beds are clean.
2. Verify dowels, anchor bolts, and inserts are all in place, particularly at rooflines, floor lines, and intersecting wall lines.
3. Verify installation of cleanout closures.

H. Grouting Observations

1. Verify grout mix for conformance to approved mix design.
2. Verify slump is in accordance with the specifications.
3. If low lift grouting, verify maximum masonry height is in accordance with the code before grouting.
4. Verify consolidation (mechanical vibrating or puddling) during placement, and later during reconsolidation.
5. Monitor time since batching of grout.
6. Monitor flow of grout throughout wall and each grout pour height for conformance to specifications.
7. Preparation of any required grout specimens and/or prisms shall be observed. Note mortar specimens are no longer required.
8. Verify grout is stopped below top for keying where required.
9. Verify curing requirements are being followed.

I. Reports

1. Submit written progress reports describing the tests and observations made and showing the action taken to correct nonconforming work. Itemize any changes authorized by architect/engineer. Report all uncorrected deviations from plans or specifications.