

Recommended Long Form Specification for Structural Glazed Brick

Section 04200

Structural Glazed Brick

1.0 General

1.1 Summary

- A. System Description: Work described in this section covers requirements for Structural Glazed Brick Unit Masonry and its installation and maintenance.
- B. Products installed but not furnished in this section:
 - 1. Section 04100: Mortar
 - 2. Section 04150: Masonry Accessories

1.2 References

- A. Applicable Standards of the following as referenced:
 - 1. American Society for Testing and Materials (ASTM)
 - 2. Brick Industry Association (BIA)
 - 3. Underwriters' Laboratories, Inc. (UL)

1.3 Definitions

- A. Terms
 - 1. Structural Glazed Brick: Extruded and manufactured clay masonry unit with a ceramic glazed face that is a structural unit.
 - 2. Glazed Face: Exposed ceramic glazed face on brick.
 - 3. Bed Joint: Horizontal mortar joint between two brick.
 - 4. Head Joint: Vertical mortar joint between two brick.

1.4 Submittals

- A. Strap Samples: Submit three samples to indicate the approximate range of color and texture to be expected in the completed wall for each color or texture.
- B. Field Panel: Construct not less than 4' wide and 4" high sample panel of material and accessories representative of completed wall.
- C. Certificates:
 - 1. Material Safety Data (MSDS)
 - 2. Certification Letter: Submit a certified letter from manufacturer prior to delivery of Glazed Brick to job site for compliance of specification requirements.

1.5 Quality Assurance

- A. Sample Field Panel: Construct a wall panel 4' wide and 4' high for Glazed brickwork. Locate as directed by Architect.
- B. Panel to indicate quality representation of:
 - 1. Glazed Brick color and texture range.
 - 2. Bonding pattern.
 - 3. Mortar color.
 - 4. Joint tooling.
 - 5. Reinforcement/Ties.
 - 6. Workmanship.
- C. Sample Field Panel should be erected at least 14 days prior to shipment of the Glazed Brick to the job site.
- D. Approved Sample Panel shall act as the standard of comparison and quality to be expected throughout the work.
- E. Approved Sample Panel should be maintained through job completion and not destroyed until instructed by the Architect.
- F. Erect separate Sample Panels for each color and texture, mortar color or combinations specified or as indicated on drawings.

1.6 Delivery, Storage and Handling

- A. Deliver Glazed Brick to Project Site as packaged by manufacturer. Offload Glazed Brick packages using equipment that will not damage the glazed face(s). No Glazed Brick is allowed to be in direct contact with the ground. Do not double stack cubes of Glazed Brick.
- B. Cover Glazed Brick with non-staining waterproof membrane covering. Keep units dry. Allow air circulation around units. Installation of wet or stained Glazed Brick is prohibited.
- C. Keep Glazed Brick units in the individual cardboard packaging provided by the manufacturer until the unit is ready to be laid in the wall. Never use brick tongs or "pitch" the Glazed Brick to upper levels of scaffolding.

1.7 Project Conditions

- A. Environmental Requirements:
 - 1. Do not lay Glazed Brick and mortar when ambient temperatures are below 40 degrees F., unless properly protected in a heated enclosure and accepted means are provided to heat units and mortar, with specific written approval from Architect. (Reference: BIA Technical Notes for Guide Specifications for Brick Masonry.)
 - 2. Maintain air temperature above 40 degrees F. on both sides of masonry for at least 72 hours after erection of walls.
 - 3. Protect masonry construction from direct exposure to wind and sun when erected in ambient air temperatures of 95 degrees F. in shade with relative humidity less than 50%.

4. Take all precautions necessary to protect units from damage.
 - a. Handle and store in protective cartons or trays until actual installation in the wall.
 - b. Damaged units will not be accepted in the wall.

2.0 Products

2.1 Structural Glazed Brick

- A. Pattern or Type:
 1. As detailed and required.
- B. Characteristics:
 1. Meet ASTM C-126-94 for properties of finish.
 2. Meet ASTM C-1405, Grade S or SS, Type I or II, Class Exterior or Interior, as specified.
 3. Must meet UL requirements for zero flame spread and zero smoke developed.
 4. Face dimensions as required:
 - a. 2-1/4" high x 7-5/8" long.
 - b. 2-5/8" high x 9-5/8" long.
 - c. 3-5/8" high x 11-5/8" long.
 - d. 3-5/8" high x 7-5/8" long.
 - e. 7-5/8" high x 7-5/8" long.
 - f. 11-5/8" high x 11-5/8" long.
 5. Bed Depth: 3-5/8", or as required.
 6. Shapes: furnished as shown on the plans in accordance with current standard production of the manufacturer. All external corners, sills and jambs shall be square unless otherwise noted. Lintels and internal corners shall be square unless otherwise noted.
 7. Approved manufacturer:
 - a. Or approved equal

2.2 Accessories

- A. Mortar: As specified in mortar section.
- B. Joint Reinforcing: Masonry joint reinforcing as specified in Masonry Accessories section.
- C. Wall Ties: Installed as per BIA recommendations, such as, with a 4" or less width cavity, use corrosion resistant metal ties, minimum of on 3/16" diameter steel wall tie in every 4-1/2 sq. ft.; for vertical-cell hollow masonry units the tie shall be rectangular or U-shaped, or for horizontal-cell, hollow masonry units or solid masonry units shall be "Z" shaped (Reference BIA Tech Note 21C).
- D. Lateral support as required.

3.0 Execution

3.1 Preparation

A. Protection of Work:

1. Protect the surfaces of the installed Glazed Brick. Cover freshly-laid weather exposed masonry at the end of each day or the start of each shut down period, with non-staining waterproof material in such a manner which will ensure that the covering will overhang the masonry not less than 2' on each side of the masonry. Anchor on each side of wall. Finished walls to be covered with 15# felt paper and erect wooden barriers to protect walls at areas that are subject to large amounts of construction traffic or material movement. Protect glazed face from exposure to welding burns, stains, etc.

3.2 Installation

A. Workmanship:

1. Lay only dry masonry units.
2. Lay masonry plumb, level and true to line.
3. Lay units in bonding pattern as specified.
4. Cut units with masonry saw using a wet diamond blade. Do not use units less than 4" in length.

A. Build in work of other trades indicated to be built-in with Glazed Brick as work progresses.

B. Glazed Brick wall construction recommendations:

1. Vented cavity wall construction (Reference: BIA Engineering and Research Digest, "Vented Walls".)
2. Install flashing, vents (weep holes), and vapor barrier (Reference BIA Technical Note 13).
3. Expansion joints shall be installed.
4. Provide flexible anchorage to columns and beams.

C. Mortar Joints:

1. Lay joints of each first course in full width bed of mortar.
2. Vertically cored units:
 - a. Lay Glazed Brick units with coring vertical to allow for drainage to weepholes via flashing.
 - b. Head and Bed Joints: Fill full joints of face shell thickness.
3. Remove and replace mortar with fresh mortar where adjustment must be made after mortar has started to set.
4. Keep bed and head joints uniform in width, except for minor variations required to maintain bond and locate returns.
5. Both bed and head mortar joints standard thickness:
 - a. Use 3/8", +/- 1/16".

D. Joint Treatment:

1. Tool or strike mortar joints on exposed face when they are "thumb print" hard.

2. Tool all Glazed Brick joints concave using a non-metallic tool 1" in diameter or larger unless otherwise noted.

3.3 Application

A. Acceptable Tolerances:

1. Walls must be straight in plane.
2. Maximum variation from plumb: 1/4" in 10'0"; not exceeding 3/8" in 20'0".
3. Maximum variation from level: 1/4" in 20'0"; not exceeding 1/2" in 40'0" or more.
4. Maximum variation in linear building line from location indicated: 1/4" in 20'0".

3.4 Cleaning

- A. It is intended that with careful adherence to this specification that extensive cleaning will not be necessary. During construction, wipe glazed surface clean after tooling of joints or within 30 minutes after laying, with coarse rag. Keep wall clean as work progresses to avoid more difficult cleanup. Use no metal scrapers, abrasive powders or unauthorized cleaning agents. Use wooden paddles or scrapers to clean away mortar residue or lumps. Wash with clean water. A mild detergent may be used. Rinse with clean water. Wipe with clean cloths, sponges or similar item.
- B. In event of unexpected contamination of Glazed Brick walls, perform any cleaning with other than a non-metallic scraper, stiff bristled brush or wooden paddle only after approval by Architect and necessary tests to insure against any wall damage.

End of Section 04200