Division 4 - Masonry,
Section 04270 Glass Unit Masonry

PART 1 - GENERAL

1.01 Summary
This specification has been prepared by Pittsburgh Corning Corporation using generally accepted and appropriate technical information but is not intended to be solely relied upon for specification design or technical applications. Having no control over the elements of design, installation, workmanship or site conditions, Pittsburgh Corning assumes that the actual design choices and installation will be made by persons trained and qualified in the appropriate disciplines. Therefore, Pittsburgh Corning disclaims all liability potentially arising from the use or misuse of this specification.

1.02 Section Includes
A. Glass Block Units, hollow or solid
B. Integral Joint Reinforcement
C. Mortar

1.03 Related Sections
A. Steel Channels
B. Sills, lintels, jambs
C. Sealant (caulk)
D. Packing Material

1.04 References
A. ASTM A82—Spec. for Cold Drawn Steel Wire
B. ASTM A153—Class B-2, Spec. Zinc Coating (Hot dip) on iron and steel hardware (Canada same)
C. ASTM C144, Spec. for Aggregate for Masonry (Canada - A179-94)
D. ASTM C150, Spec. for Portland Cement (Canada-CANICSA-A5-93)
E. ASTM E613, Fire Test of Window Assemblies (equivalent to UL® 9 and CAN 4-S106-M80)
F. ASTM C207, Spec. for Hydrated Lime for Masonry Purposes (Canada same)
G. ASTM C270, Spec. for Mortar for Unit Masonry (Canada - A179-94)
H. ASTM D1187, Type II—Spec. for Asphalt-Base Emulsions (For Metal Surfaces)
I. ASTM D1227, Type III—Spec. for Emulsified Asphalt (For Porous Surfaces)

1.05 System Description
Knowledge of the following basic information is essential for proper installation of Pittsburgh Corning Glass Block units:

1. Glass block panels shall not be designed to support structural loads.
2. Maximum deflection of structural members supporting glass block panels shall not exceed L/600.
3. Sills of all panels must be painted with a heavy coat of asphalt emulsion and must dry for two hours before first mortar bed is placed.
4. Provision for expansion and movement must be made at jambs and heads of all panels. Mortar must not bridge expansion spaces.
5. Mortar should be mixed and applied in accordance with the recommendations of Pittsburgh Corning Corporation. See Materials.

1.06 Submittals
A. Product Data
   Submit two (2) copies of manufacturer’s literature and two (2) copies of manufacturer’s installation instructions.
B. Samples
   1. Submit two (2) glass block units of each type specified showing size, design and pattern of faces.
   2. Submit representative samples of (panel reinforcing), (panel anchors), (expansion strips), and (sealant).

C. Test Reports —
   Fire Tests
   Submit documents verifying glass block units are classified for a 3/4, 1 or 1 1/2-hour fire exposure according to ASTM E163. Underwriters Laboratories of Canada CAN 4-S106-M80 or UL® 9 “Fire Tests of Window Assemblies.” All such glass block unit cartons shall carry appropriate UL® labels.

1.07 Storage and Protection
A. Store unopened cartons of glass block in a clean, cool, dry area.
B. Protect opened cartons of glass block against windblown rain or water run-off with tarpaulins or plastic covering.

1.08 Project/Site Conditions
A. Do not install glass block units when temperature is 40°F (4°C) and falling. Maintain the temperature of glass unit masonry above 40°F (4°C) for the first 48 hours after construction.

1.09 Warranty
A. Pittsburgh Corning Corporation offers a limited 5-year warranty on Pittsburgh Corning Glass Block units. See warranty statement.

PART 2 - PRODUCTS

2.01 Acceptable Manufacturers
A. The drawings and specifications are based on catalog data, specifications and products of Pittsburgh Corning Corporation and designate the type and quality of work intended under this section.
1. Products of other manufacturers proposed as equivalent quality must be submitted through the bidding contractors for written approval of the architect ten days prior to the bid date.
2. Supporting technical data, samples, published specifications and the like must be submitted for comparison.
3. Contractor shall warrant that proposed substitutions, if accepted, will provide performance equivalent to the materials specified herein.
4. These specifications have been developed by Pittsburgh Corning Corporation based on extensive tests of panels composed of Pittsburgh Corning Glass Block masonry units manufactured by Pittsburgh Corning Corporation. These specifications do not apply to panels made from glass block masonry units produced by any other manufacturer.

2.02 Glass Block Units
A. Glass block units, nominally ___ inch x ____ inch x ____ inch thick shall be partially evacuated hollow units made of clear, colorless glass with a polivinyl butyral edge coating.
   Pattern type: ____________________________
B. Solid glass units, nominally ___ inch x ____ inch x ____ inch thick made of clear colorless glass with a polivinyl butyral edge coating.
   Pattern Type: VISTABRIK® solid glass block.

NOTE: Pittsburgh Corning Corporation offers a polivinyl butyral edge coating for better bonding and to provide for an expansion/contraction mechanism for each block.

2.03 Accessories
A. Panel Reinforcing: two parallel 9-gauge wires either 1 1/4 inch or 2 inch on center with electrically butt-welded cross-wires spaced at regular intervals, galvanized after welding, by Pittsburgh Corning Corporation.
B. Panel Anchors: 20 gauge perforated steel strips 24 inches long by 1 1/4 inches wide, hot-dipped galvanized after perforation, by Pittsburgh Corning Corporation.
C. Expansion Strips: made of polyethylene foam with a thickness of 3/8 inch, by Pittsburgh Corning Corporation.
D. Asphalt Emulsion: a water-based asphalt emulsion, by Karnak Chemical Corp. (Karnak 100, 1-800-526-4236), or equal.
E. Sealant (caulk): non-staining, waterproof mastic, (silicone), (urethane), (___________) type.
F. Packing (Backer Rods): polyethylene foam, neoprene, fibrous glass or equal as approved by sealant manufacturer.
2.04 Mortar Materials

A. Mortar: Type S in accordance with ASTM C270. Mortar shall be 1.204 Mortar Materials

PART 3 - EXECUTION

C. Freshly mixed mortar may create skin irritation. Avoid direct contact where possible and wash exposed skin areas promptly with water. If any mortar gets into the eyes, rinse immediately with water and get prompt medical attention.

3.01 Preparation

A. Mortar: Type S in accordance with ASTM C270. Mortar shall be 1.204 Mortar Materials

3.02 Installation

B. Where panel anchors are used at jambs and heads in lieu of channel, reinforcing and panel anchors should be considered, an unobtrusive area.

For VISTABRIK® solid glass block units, typical mortar joint is 3/8 inch plus or minus 1/16 inch. Special VISTABRIK® spacers that provide a 1/8 inch thick mortar joint are available.

F. Install panel reinforcing every 16 inches o.c. maximum in the horizontal mortar joint and in joints immediately above and below all openings within panels. Run reinforcing continuously from end to end of panels. Lap reinforcing not less than 6 inches whenever it is necessary to use more than one length. NOTE: In corrosive atmospheres, (i.e. saline air, chlorine air, etc.), the use of stainless steel channels, reinforcing and panel anchors should be considered.