



CERAMIC TILE INSTITUTE OF AMERICA, INC.
12061 Jefferson Blvd., Culver City, CA 90230-6219

CTIOA FIELD REPORT 0-106-68 (R-96)

SUBJECT: Suggested Specifications for Glass Mosaic Tile Installed on Exteriors in Portland Cement Mortar

SCOPE

Furnish all labor, materials, tools, equipment, transportation and services required to complete the installation of glass mosaic tile work indicated on drawings and as specified herein (list scope of work).

WORK SPECIFIED IN OTHER SECTIONS

- A. All surfaces to receive glass mosaic tile over wood or steel stud construction shall be left with a scratch coat applied to a thickness of not less than 3/8" nor more than 3/4" from the structural face. Scratch coat shall be mixed in proportions of one part portland cement (ASTM C150-85), half part hydrated lime and four parts dry sand or five parts damp sand by volume; or one part portland cement and three parts dry sand or four parts damp sand by volume. Finished scratch coat shall be plumb within 1/4" in 8' (feet).

Wood or steel studs shall be covered with one of the following moisture barrier materials: 15 lb. asphalt saturated building felt (ASTM D226-88) or polyethylene sheeting 0.004" thick (ASTM D4397-91).

Wire reinforcing shall be furred out 1/4" from the studs and shall be 2" x 2" -16/16 or 1 1/2" x 2" - 16/13 (ASTM A82 and A185) or shall be flat expanded metal lath weighing not less than 2.5 pounds per square yard (ASTM C847).

- B. Direct Bond: All masonry surfaces to receive glass mosaic assembly shall be heavily sand blasted to remove surface contamination and or slickened surface caused by forms or troweling.
- C. After masonry surfaces are prepared they shall receive a dash coat mixed in proportions of one part portland cement to one and one half parts graded sharp,

fine sand. Add one part anti-hydro to five parts of water and mix into premixed dry sand and cement to bring to proper consistency. Prepared masonry surfaces shall be cleaned with and well saturated with water prior to application of dash coat. Maintain moisture in dash coat by covering or by fog or mist spraying until cured to acceptable hardness and bond (usually 72 hours). Prior to installing scratch and or brown coat, dash coat shall be checked for acceptable hardness and bond to masonry surface.

MATERIALS

- A. Glass mosaic tile shall be of the highest quality, sizes and colors mounted on paper sheets, with a uniform joint. Glass shall be (state brand to be used) or approved equal colors and shades shall be as specified and specifier shall be sampled in sufficient quantity to determine acceptable shade variation of bulk supplied material. Those materials shipped to job shall fall within the shade range of the approved sample palette.
- B. Portland cement shall conform to ASTM C150, Type 1.
- C. Hydrated lime shall be for masonry purposes and conform to ASTM C207.
- D. Sand shall comply with "Method for Test for Organic Impurities in Sand for Concrete", ASTM C40, and "Specifications for Aggregate for Masonry Mortar", ASTM C144.
- E. Water clean and fit for human consumption.
- F. Grout and buttering mix one part graded extra fine sand aggregate (#80 or #60 grit silica), two parts common cement, and optionally up to 1/2 (one-half) part hydrated lime and color pigment if desired.
- G. Bond coat latex portland cement mortar, ANSI A118.4, or, at contractors option, pure portland cement mixed with water to a trowelable paste.
- H. Mortar setting or leveling bed shall be mixed in the proportions of one part portland cement, one part hydrated lime, six parts of clean sharp sand.
- I. Grout - See "F"

WORKMANSHIP

NOTE: Glass mosaic tile should be installed by experienced professional tile setters familiar with setting procedures of this type. Knowledge in setting clay ceramic tile only may not be adequate for setting glass mosaic tile.

A. **Installation of Mortar Bed :**

Install mortar setting or leveling to a uniform thickness not to exceed 3/4". Finish bed to a uniform plumb and flat surface, bring within 1/8" in 8' tolerance.

B. **Installation of tile:**

Note: The glass tile can be set while the mortar leveling bed is either in a still plastic state or after the mortar bed has cured a minimum of 72 hours. The bond coat of portland cement paste is to be used only when the mortar bed is plastic, the latex portland cement coat can be used on either the plastic or cured state of the mortar bed. In either instance the bond coat is applied to the substrate (mortar leveling bed) in as close proximity of time as is the butter mix to the back of the tile, and in some cases the butter mix is also applied over the bond coat.

1. Apply bond coat to substrate with flat side of trowel pressing hard to attain good contact. Bond mortar is then combed with tooth edge of trowel to achieve uniformity of amount. The ridges are then re-combed with the flat side of the trowel to render a flat, ridge free, uniform application of bonding mortar. This will prevent voids or air pockets when applying mosaic sheets. Spread only as much bonding mortar that will allow for installation of tile, paper removal and reworking (straightening) of tile while bonding mortar is still in a fresh condition and has not taken its initial set.
 2. Apply butter coat to back of tile with flat side of trowel insuring complete coverage. Apply butter coat as uniformly as possible. Apply buttered sheet immediately as once moisture from the butter coat contacts the mounting paper (on the opposite side) singular glass tiles will begin to debond from the paper. Butter coat and install only as many sheets of mosaic as can be finished by initial rub or beat in, removal of mounting paper, final rub or beat in, reworking (straightening) of tile, cleaning of excess butter mix as can be achieved while butter coat is in a fresh condition and has not taken its initial set.
- C. Installation of grout. Install grout mix that is the same as the butter mix after tile has achieved its initial set but before butter mix has become unworkable within tile joints, usually within one hour of initial tile placement. Grout joints shall be full and uniformly finished.
 - D. All excess grout, glue, and scum shall be removed from the face of the tile leaving the finished surface clean. Care shall be taken not to abrade the surface of the glass mosaic tiles during cleaning.
 - E. Maintain moisture in grout by covering or by fog or mist spraying for 72 hours.
 - F. Seal penetrations in tile work at control joints in tile and at expansion or control joints in structure that penetrate through tile work.

Notes to Specifier: Variations in the matrix of scratch coat, brown coat, bond coat and butter coat are permissible and should be left to the discretion of the mechanic. Expansion joint requirements will vary depending on substrata, climate and size of installation.