

09400

Single Layer Thin Terrazzo Tile

Flooring Specification – Ground and Polished Method

For questions or assistance, please contact:

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PART ONE – GENERAL

1.1 INTRODUCTION

- Wausau Tile is the manufacturer of Wausau Terrazzo Tile and is not responsible for defects that are not related to the manufacture of the tile. The following is provided as a "helpful" guideline and does not tie Wausau Tile to any installation.
- Wausau Tile Precast terrazzo flooring may be installed using the **1/16" minus Ground and Polished Method**. The **Square Edge/Honed** tiles are set with a **1/16" minus** joint and then the tiles are ground flush. A minimal grinding is required to remove any lippage for a smooth, monolithic finish. Final polishing follows, providing the same appearance as conventional terrazzo flooring.
- The **Ground and Polished Method** allows for the use of a cement-based terrazzo flooring in thinset applications. This installation method also offers ease of installation and the expanded use of designs, patterns and color combinations. Terrazzo tile produced in a precision controlled manufacturing process offer greater product uniformity and strict tolerances.
- Wausau Tile Precast terrazzo flooring is to be installed following the tile setting procedures of the Tile Council of America. Sealing and maintenance procedures must follow the floor care product manufacturer's instructions.

1.2 SUMMARY

- A. Types of Precast Terrazzo work included:
 - 1. Precast terrazzo flooring
 - 2. Precast terrazzo accessories - stair and base
- B. Setting materials, expansion joints, grouts, crack isolation and leveling underlayment
- C. Polishing and finishing maintenance materials
- D. Related work not specified under this section
 - 1. Cast-in-place concrete: substrate

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C-150 4. ASTM C-293 7. ASTM C-627 10. ASTM D-56
 - 2. ASTM C-33 5. ASTM C-1028 8. ASTM D-226
 - 3. ASTM C-140 6. ASTM C-131 9. ASTM D-2103
- B. American National Standards Institute (ANSI)
 - 1. ANSI A108.5 3. ANSI A108.10 5. ANSI A118.6
 - 2. ANSI A108.1 4. ANSI A118.4
- C. National Terrazzo and Mosaic Association (NTMA)
- D. Tile Council of America (TCA)

1.4 QUALITY ASSURANCE

- A. Setting and Grouting Materials: Provide materials obtained from one source for each type and color of grout and setting materials.
- B. NTMA Standards: Comply with specified provisions and recommendations of NTMA
- C. TCA Standards: Comply with specifications under the current Handbook for Tile Installation
- D. Manufacturer to supply a written Quality Assurance Program and Procedure Manual

- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Packaging and Shipping: Precast terrazzo to be stretch-wrapped in rows and banded on pallets, delivered in original unopened packaging with legible manufacturer identification, including size, quantity, manufacture date, and inspector initials.
 - B. Storage and Protection: Precast terrazzo to be stored indoors, sheltered from moisture in original packaging. Protect from damage by other trades.
- 1.6 PROJECT CONDITIONS
- A. Inspect surfaces to receive precast but do not proceed with installation of precast terrazzo until improper conditions have been corrected.
 - B. Provide temperatures in precast terrazzo areas during installation and after completion as required by installation standard or manufacturer's instructions, but not less than 50 degrees F.
- 1.7 WARRANTY
- A. Precast terrazzo flooring and precast specialties are warranted for one year from final inspection and acceptance against manufacturing defects. For complete warranty, contact Wausau Tile, Inc.
- 1.8 MAINTENANCE
- A. Extra Materials: Deliver supply of maintenance materials to the owner. Furnish maintenance materials from same lot as materials installed, and enclosed in protective package with appropriate identifying labels.
 - 1. Furnish not less than one percent of total product installed maintenance stock for each type, color pattern, and size of precast terrazzo product installed.

PART TWO – PRODUCTS

- 2.1 MANUFACTURERS
- A. Acceptable product manufacturers include Wausau Tile, Inc.
 - B. Clarification Note: Drawings and installation specifications are based on manufacturer's proprietary literature. Other manufacturers shall comply with the minimum levels of material specifications and detailing indicated on the drawings or specified herein.
- 2.2 MATERIALS
- A. Portland Cement: ASTM C-150 specifications for Portland cement
 - B. Aggregates: All aggregates to meet ASTM C-33, ASTM C-131 specifications
 - C. Coloring: Pigments used shall be inorganic, resistant to alkalinity, and used per manufacturer's recommendations
 - D. **Color Blending: Precast terrazzo has a natural color range in the aggregate. This can cause variances in overall color. Tile is to be blended at the job site from multiple pallets in numerical sequence.**
 - E. Setting Materials:
 - 1. Wausau Tile Mortar – exceeds ANSI A118.4
 - F. Grouting Materials
 - 1. Latex-Portland Cement Grout: Comply with ANSI A118.6 and the following:
 - a. Water emulsion latex additive: Add at project site to pre-packaged dry grout mix, with type of latex and dry grout mix specified or recommended by latex manufacturer or pre-packaged polymer modified grout
 - 1. Latex additive: Concentrated Acrylic Latex Additive
 - 2. Grout type: Standard **unsanded** grout
 - 2. Grout colors: To be determined by architect, selected from manufacturer's standard range or custom color
 - G. Crack Isolation Membrane
 - One part liquid applied for non-directional cracks, shrinkage cracks and where crack transfer is suspected.
 - 1. Sheet applied membrane for relocating control joints and for bridging saw cuts and cold joints.

- H. Expansion Joint Materials:
 - 1. Polyurethane Sealant backed by 16-gauge angles
- I. Sealing and Polishing Materials:

Our Single Layer – Thin Terrazzo Tile are not factory sealed. After the field polishing of the tile is complete the tile need to be sealed. Apply the final seal using a product compatible with cement terrazzo and following the sealer manufacturer’s instructions

2.3 MANUFACTURED UNITS

- A. Precast Terrazzo
 - 1. Size: 11-13/16" x 11-13/16" x 1/2"; 7.0 lbs. (approx.)
15-13/16" x 15-13/16" x 5/8"; 14.0 lbs. (approx.)
23-13/16" x 23-13/16" x 7/8"; 42.0 lbs. (approx.)
 - 2. Square face edges
 - 3. Surface to be honed to 45 grit, free of holes or rough areas
 - 4. Surfaces to be uniform in appearance.
 - 5. Finish/Color:
 - a. Selected from Wausau Tile Color Palette
 - 1. Micro and Accent - Aggregate chips – approx. 1/8"
 - 2. Traditional - Aggregate chips – approx. 1/4" to 3/8"
 - 3. Neptune - Mother of Pearl chips added to any of the above
 - b. Custom - Colors selected from the NTMA color palette or blended aggregate and matrix color

2.4 MIXES

- A. Aggregate: Natural, sound, crushed marble chips without excessive flats or flakes complying with NTMA requirements
- B. Matrix Pigments: Pure mineral or synthetic pigments, resistant to alkalis and non-fading.
- C. Single Layer – Thin Terrazzo tile shall have 70 percent coverage of the precast terrazzo face with marble and/or recycled glass aggregate

2.5 FABRICATION

- A. Mechanically vibrated in molds
- B. Hydraulically pressed by 900-ton/3250 psi press
- C. Steam-cured with 100 percent humidity for 12 hours at 170 degrees F
- D. Factory finish: In-line grinding
- E. Tolerances:
 - 1. Dimensional tolerances: Fact: toe - 1/32"; thickness - +/-1/32"
 - 2. Warpage: Along with any edge +/- 1.5 percent
On either diagonal +/- 1.5 percent
 - 1. Wedging: Not to exceed 1.0 percent

2.6 SOURCE QUALITY CONTROL

- A. Tests: Manufacturer to supply independent laboratory for test results on:
 - 1. Flexural strength ASTM C-293
 - 2. Water absorption ASTM C-140
 - a. Compressive strength ASTM C-140
- B. Inspections:
 - 1. Documented inspection of precast terrazzo quality control tests

PART THREE – EXECUTION

3.1 PREPARATION GUIDELINES

- A. The following work should be complete and approved before installation of precast terrazzo is begun:
 - 1. **Surface to receive precast terrazzo tile shall be plumb, level, and true with square corners, maximum variation from required plane shall be 1/8" in 10**

feet. Concrete surface to be troweled with a fine steel broom finish and free of sealers and curing compounds.

2. Apply Self-Leveling Underlayment to concrete floors where determined by architect in conjunction with the terrazzo tile contractor. Leveling coat shall be compatible with the setting mortar.
3. Before setting, ensure surfaces are free from coatings, curing membranes, oil, grease, wax, or dust.
4. All anchors, outlets and other inserts must be in place.
5. **Report all unacceptable surfaces to architect; do not set until surface areas are corrected.**
6. Crack Isolation Membrane to be used on non-directional cracks, shrinkage cracks, and all areas where crack transfer is suspected.
7. Locate and determine expansion joints based on building control joints, cold joints, sawed joints, and recommend expansion joints based on TCA specifications current issue of EJ 171.

3.2 INSTALLATION GUIDELINES

- A. All work should be performed by trade contractors, tile and marble setters, and finishers who are thoroughly competent to execute the work and have had successful experience with projects of similar magnitude to this project.
- B. Follow all current TCA/NTMA guidelines and ANSI A108-1B.
 1. **TCA - F111-03: Cement Mortar, Cleavage Membrane**
 - a. Inspection of areas to receive underbed for:
 1. Defects in existing concrete work that affect the proper execution of precast terrazzo work
 2. Variances beyond allowable tolerances (i.e. cracks, deflection, voids, etc.)
 - b. Commence work only after all defects have been corrected by appropriate trades
 - c. Installation of underbed
 1. Area to be covered with dry sand not to exceed 1/16" in height
 2. Install cleavage membrane of 15 pounds roofing felt ASTM D-226, or 4 mm polyethylene film, ASTM D-2103, overlapping all ends and edges a minimum of three inches
 3. Install 2" x 2" 16 gauge welded wire mesh. Overlap at ends and edges a minimum of two squares
 4. Place underbed mix in a uniform thickness of 1-1/4" to 2" maximum
 5. Screed underbed to elevation below finished floor elevation to receive terrazzo tile to be set by the Thin Set Method
 2. **TCA - F112-03: Cement Mortar, Bonded**
 - a. Inspection of areas to receive underbed for:
 1. Defects in existing concrete work that affect proper execution of terrazzo work
 2. Variances beyond allowable tolerances (i.e. cracks, deflection, voids, etc.)

Note: Structural cracks in substrate will usually be transmitted through precast terrazzo. All cracks to have a control joint installed directly over crack. Small cracks can use Crack Isolation Membrane System.
 - b. Commence work only after all defects have been corrected by appropriate trades
 - c. Installation of underbed
 1. Thoroughly saturate concrete sub floor with water, slush, and broom with neat cement paste
 2. Place underbed mix approximately 1" to 1-1/4"
 3. Screed underbed to elevation below finished floor elevation to receive terrazzo tile to be set by the Thin-Set Method
 3. **TCA - F113-03: Latex-Portland Cement Mortar Bonded**

- a. Inspection of areas to receive tile for:
 1. Defects in existing concrete work that affect proper execution of terrazzo work
 2. Variances beyond allowable tolerances (i.e. cracks, deflection, voids, etc.)
 3. Maximum variation in sub floor not to exceed 1/8" in 10 feet from required plane
 - i. (Recessed Areas) - Self-leveling underlayment in areas not meeting allowable tolerances
 - ii. (Raised Areas) - Scarify or grind high areas not meeting allowable tolerance
- b. Precast terrazzo installation
 1. Follow the practices in the TCA Handbook for Tile Installation and ANSI A108.5
 2. Use 1/4" x 1/4" x 3/8" U-notched trowel for 1/2" tile or 1/4" x 1/4" x 1/2" U-notched trowel for 5/8" and 7/8" thick tile
 3. Precast terrazzo tile setting into combed mortar bed to obtain coverage of 95 percent minimum
 4. Protect for 24 hours - colder temperatures will require more time
 5. All units to be installed level, square, parallel, except where otherwise indicated in a true plane with adjacent units and other floor finishes
 6. Maintain a maximum joint of 1/16" or less
 7. Layout to be designed without precast terrazzo smaller than half-size.
 8. Junctions: Areas that meet other flooring to require metal divider strips of 16 gauge metal angle
 9. Control joints are required:
 - i. Over all structural expansion joints, follow TCA spec EJ 171
 - ii. Every 24 to 36 lineal feet and at all corridor intersections
 - iii. All perimeter edges to have soft joints
 - iv. Joints to be of Polyurethane backed by 16 gauge angles
 - v. Architect to determine final locations of all control joints

3.3 PRECAST TERRAZZO FINISHING GUIDELINES

- A. Follow all current TCA/NTMA guidelines and standards.
- B. Grouting:
 1. Prepare, mix, and apply latex Portland cement grout mix in strict adherence with material manufacturer's instructions
 2. Ensure full penetration of entire joint depth. Extra care should be exercised during grouting so that the grout joints are left over-filled and a heavy grout film is left on the surface of the tile.
- C. Grinding and Polishing
 1. Grind floor with either 80 to 100 grit diamond or vitrified abrasive stones of 24 to 40 grit
 2. Carefully clean and inspect floor
 3. Polish floor, traditional polishing is done with 80 to 120 grit vitrified abrasive stones
 4. Inspect floor; make sure it is free of scratches or swirl marks
 5. Allow floor to dry thoroughly

6. **Our Single Layer – Thin Terrazzo Tile are not factory sealed. After the field polishing of the tile is complete the tile need to be sealed. Apply the**

final seal using a product compatible with cement terrazzo and following the sealer manufacturer's guidelines.

D. Protection

1. Upon completion, floor to be submitted for final inspection and acceptances of owner or appointed agent
2. Upon acceptance, general contractor shall provide protection of finished floor.