

ATTACHMENT 6: Department of Veterans Affairs
NTX Halls and Walls Project (Replace Atrium Flooring)
Project Number 549-16-164
SECTION 09 66 16
TERRAZZO FLOOR TILE

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. This section specifies requirements for terrazzo tile for installation over concrete floors.

1.2 RELATED WORK:

- A. Resilient Base: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.
- B. Color, Size, Thickness, Finish and Type: Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Subfloor Testing and Preparation: Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES.

1.3 QUALITY ASSURANCE:

- A. Approval by Contracting Officer Representative (COR) is required of products or service, or proposed manufacturer, suppliers and installers, and will be based upon submission by Contractor of certification that:
 - 1. Manufacturer has manufactured terrazzo tile as one of his principal products for a minimum of three (3) years. Submit list of not less than five (5) installations. List is to include name of project, and owner and location of project. Submit manufacturer's qualifications.
 - 2. Installer has installed terrazzo tile for a minimum of three (3) years. Submit installer's qualifications.

1.4 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
 - 1. Postconsumer and pre-consumer recycled content as specified in PART 2 - PRODUCTS.
 - 2. For flooring adhesive installation containing volatile organic compounds, provide documentation indicating applicable volatile organic compounds per volume as specified in PART 2 - PRODUCTS.
- C. Flooring Manufacturer's Literature and Data: Printed pre-installation and installation instructions for conditions indicated.

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- D. Certificates: Indicating materials conform to specified requirements. Indicating flooring manufacturer's approval of underlayment, substrate preparation, adhesive finishes and cleaners.
- E. Samples: Terrazzo Tile each color, size, finish, and type to be used.
- F. Manufacturer's qualifications including list of installations.
- G. Installer's qualifications.
- H. Moisture and pH test results as per Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES.
- I. Manufacturer's warranty.

1.5 DELIVERY:

- A. Deliver materials to job in manufacturer's original unopened containers, free of damage, with manufacturer's brand name marked thereon.

1.6 STORAGE:

- A. Store materials in a protected area. That is kept dry and has a temperature not lower than 18 degrees C (65 degrees F) or higher than 27 degrees C (80 degrees F).

1.7 PROJECT CONDITIONS:

- A. Do not install tiles until all other work that could cause damage to the finish flooring has been completed. Acclimate tiles and maintain spaces where tile is to be installed to a temperature of not less than 21 degrees C (70 degrees F) for at least 48 hours before, during and after the installation of tiles. A minimum temperature of 13 degrees C (55 degrees F) is to be maintained thereafter.

1.8 WARRANTY:

- A. Construction Warranty: Comply with FAR clause 52.246-21, "Warranty of Construction".

1.9 APPLICABLE PUBLICATIONS:

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.
- B. ASTM International (ASTM):
C97/C97M-09.....Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

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- C109/C109M-13.....Compressive Strength of Hydraulic Cement
Mortars
- C501-84 (R2009).....Test Method for Relative Resistance to Wear of
Unglazed Ceramic Tile by the Taber Abraser
- E84-14.....Test Method for Surface Burning Characteristics
of Building Materials
- E90-09.....Standard Test Method for Laboratory Measurement
of Airborne Sound Transmission Loss of Building
Partitions and Element
- E413-10.....Classification for Rating Sound Insulation
- E492-09.....Standard Test Method for Laboratory Measurement
of Impact Sound Transmission Through Floor-
Ceiling Assemblies Using the Tapping Machine
- E648-14c.....Critical Radiant Flux of Floor Covering Systems
Using a Radiant Heat Energy Source
- E989-06.....Standard Classification for Determination of
Impact Insulation Class
- F1869-11.....Test Method for Measuring Moisture Vapor
Emission Rate of Concrete Subfloor Using
Anhydrous Calcium Chloride
- F2170-11.....Test Method for Determining Relative Humidity
in Concrete Floor Slabs Using in Situ Probes
- C. Code of Federal Regulation (CFR):
- 40 CFR 59.....Determinations of Volatile Matter Content,
Water Content, Density Volume Solids, and
Weight Solids of Surface Coating
- D. Tile Council of North America (TCNA):
- DCOF AcuTest-2012.....Dynamic Coefficient of Friction Test

PART 2 - PRODUCTS

2.1 TERRAZZO TILE:

- A. Provide terrazzo tile that is of color, size, thickness, finish and type as specified in Section 09 06 00, SCHEDULE FOR FINISHES. Tiles are to consist of either marble, granite chips embedded in a flexible thermoset resin matrix. Provide marble chips graded to 6 mm (5/8)

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maximum size. Provide granite chips that are manufacturer's standard gradation. Provide tile with the following properties.

1. Recycled Content of Terrazzo Products: Post-consumer content plus one-half of pre-consumer content not less than 30 percent.

TERRAZZO TILE PROPERTIES		
PROPERTY	TEST METHOD	VALUE
Compressive strength	ASTM C109/C109M	20 MPa (3000 psi) minimum
Water Absorption	ASTM C97/C97M	0.7 percent maximum
Abrasive Wear	ASTM C501	Index 28
Coefficient of Friction	TCNA DCOF Acutest	0.42 when wet
Flame Spread	ASTM E84	Class A
Critical Radiant Flux	ASTM E648	Class I

2.2 ADHESIVE:

- A. Provide terrazzo tile manufacturer's standard product or a product recommended by the terrazzo tile manufacturer.
 1. Adhesive to have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, (EPA Method 24).

2.3 RESILIENT BASE:

- A. See Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

2.4 TERRAZZO BASE/STRIPS:

- A. Provide terrazzo base/strips matching the requirements of terrazzo tile and being a manufacturer's standard product. Color, size, thickness, finish and type as specified in drawings.

2.5 METAL EDGE STRIPS:

- A. Extruded aluminum, butt-type, 38 mm (1-1/2 inches) wide with thickness to set top surface flush with top of tile and with bevel at exposed edge. Edge strips to have countersunk holes, within 12 mm (1/2 inch) of

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each end and spaced at no more than 203 mm (8 inches) on center for securement.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Provide terrazzo tile flooring on floor surfaces and walls where shown on the construction documents. After becoming familiar with details of the work, verify dimensions in the field, and advise the COR of any discrepancy before performing the work.

3.2 SUBFLOOR TESTING AND PREPARATION:

- A. Prepare and test surfaces to receive terrazzo floor tile and adhesive as specified in Section 09 05 16, SUBSURFACE PREPARATION FOR FLOOR FINISHES.

3.3 INSTALLATION:

- A. Install tile in accordance with the tile manufacturers approved installation instructions, except as specified herein. Lay design symmetrical about center lines of rooms. Joints are to be maximum 0.79 mm (1/32 inch) and in true alignment. Cut tile to fit snugly at pipes and other fixed vertical surfaces. Seal joints at pipes with silicone. Remove spots or smears of adhesive immediately. Make entire surfaces of finished tile floors smooth, straight, and free from bleeding adhesive, buckles, waves or projecting tile edges upon completion.
- B. Metal Edge Strips: Secure strips with No. 10 aluminum alloy, counter sunk flathead machine screws with expansion sleeves. Provide metal edge strips, in one (1) piece, at any exposed edges of tile.
- C. Terrazzo Base/Strips: Continuous and adhesively applied. Joints are to be tight and formed in same manner as floor tile.

3.4 CLEANING:

- A. Upon completion and after adhesive has cured, clean flooring in accordance with manufacturer's recommendations.

3.5 PROTECTION:

- A. From the time of laying until acceptance, protect the flooring from damage. Replace damaged, loose, broken, or curled tiles. Except as necessary to install new tile, keep all traffic off new tile for at least 24 hours after installation.

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