

Attachment 1 to SATOC BLDG 9

Carpet Tile, Porcelain Tile & Contoured Resilient wall base

**Building 9 Basement
Renovations**

January 2018

**Department of Veterans Affairs
VA CWM Healthcare System
421 N. Main Street
Leeds, MA 01053**



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Part 1 – General

A. SCOPE OF WORK

The selected Vendor will be required to provide, furnish, deliver, prep concrete substrate and install all components as noted on the attached drawing and described here within. Contractor shall prep the existing concrete floor as necessary for new flooring applications.

Any question regarding this product request shall be directed thru the assigned Contracting Officer.

B. BID REQUIREMENTS

Cost of item (i.e. carpet tile) to be wholly inclusive of all required components, such as substrate prep, adhesives, etc. Do NOT break out costs for any parts or pieces in either the cost or extended cost columns. Cost per Square Yard of carpet to INCLUDE labor/install

- Freight (FOB Destination) of all items to be indicated as a total amount or included in the total.
- Bidders responsible for final quantity counts to furnish the space as indicated
- Bidders responsible for field measurements / verification and any necessary modifications prior to any fabrication or ordering of materials.
- An Installation foreman must be onsite during installation.
- Contractor shall demonstrate successful experience managing projects of similar size and complexity. A list of at least three similar projects in healthcare facilities where products were used shall be provided, along with scope of work, and name/telephone number of individual at facility to contact for product performance.
- Pre-owned or manufacturer's defected or discontinued product not acceptable.
- Each product shall be from the same Manufacturer and same production run in original unopened packaging.
- All products must be an approved GSA Product with recycled content and conforming to the following salient characteristics and requirements herewithin

All items sold to the Government must meet or exceed ANSI and ASTM performance standards

If submitting an OR EQUAL bid, the vendor must supply the substitute flooring binder as well as a full-size sample large enough to show complete pattern repeat. Sample to remain onsite for up to two weeks to undergo a determination of parity for construction quality and applicable use in a healthcare facility. If samples are to be returned, Vendor fully responsible for providing packaging and shipping costs.

Submit samples to Interior Designer, Christine Michalik Building 7 Room 111

C. SUBMITTALS

A. Product Data:

1. Manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of material, base and installation accessories.
2. Manufacturer's printed installation instructions, including preparation of installation substrate, carpet and resilient seaming techniques and recommended adhesives /tapes.
3. Manufacturer's certificate verifying product containing recycled materials include percentage of recycled materials as specified.
4. Adhesive: Literature indicating each type and for what product to be used with. MSDS sheets must be submitted to medical center for pre-approval.

B. Samples:

1. Carpet: "Production Quality" samples, (4)24" x 24" pieces, showing quality, pattern and color specified in Part 2 – Carpet Requirements
2. Floor Edge Strip (Molding): (6 inches) long of each color and type specified.
3. Base Edge Strip (Molding): (6 inches) long of each color specified.
4. One Porcelain Tile sample of each size specified by VA Interior Designer.
6. Certificates: Quality Control Certificate Submittals and lists

C. Shop Drawings: Installers layout plan showing seams and cuts for carpet. Indicate orientation of directional patterns. Show flooring detail layouts at corner conditions and in/around alcoves and protrusions.

D. Maintenance Data: manufacturer's maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning

E. Project close-out Data:

- Provide (2)labeled binder indicating location of each floor type, cleaning information, and product information (model #'s, color #'s, etc. for re-orders)
- Provide technical and operational instructions and user's manuals for all components. Manufacturer's instructions outlining maintenance requirements and Location and telephone number of nearest service organization.

D. DELIVERY AND STORAGE

- A. Deliver products in manufacturer's original wrappings and packages clearly labeled with manufacturer's name, brand, type and color, size, dye lot number, date of manufacture and related information.
- B. Deliver adhesives in containers clearly labeled with manufacturer's name, brand name, number, installation instructions, safety instructions and flash points.
- C. Store in a clean, dry, well ventilated area, protected from damage and soiling. Maintain storage space at a temperature above 16 degrees C (60 degrees F) for 2 days prior to installation.
- D. Materials from containers which have been distorted, damaged or opened prior to installation will be rejected.
- E. Protect material from damage by handling and construction operations before, during and after installation.
- F. Delivery [FOB Destination], unloading and installation must be managed and completed to ensure government occupancy and facility operations. Contractor must adhere to VA CWM hours, restrictions and regulations. This includes, but is not limited to the following:
 - Trucks cannot be left unattended and must be removed from unloading area after unloading. VA CWM cannot guarantee parking provisions for Contractors.

- Drop shipping is not acceptable. All deliveries must be received and handled by installers, VA is not responsible for receiving of any products.
- All necessary equipment and manpower must be included in bid.
- VA CWM will not provide on-site storage. Necessary storage must be included in proposal if required.
- Any damage to the VA CWM facility incurred through the installation process must be repaired within 30 days at the Contractor's expense.
- Contractor is responsible for registering with VA Police upon entrance and exit of the building As well as notifying the VA Contractor's Representative as well as the Interior Designer in advance of arrival and departure, providing review of all product and site conditions before sign off.
- Work is to be performed between 8:00am and 4:30pm weekdays unless specifically coordinated otherwise.

E. ENVIRONMENTAL REQUIREMENTS

Areas in which carpeting is to be installed shall be maintained at a temperature above 16 degrees C (60 degrees F) for 2 days before installation, during installation and for 2 days after installation. A minimum temperature of 13 degrees C (55 degrees F) shall be maintained thereafter for the duration of the contract. Traffic or movement of furniture or equipment in area shall not be permitted for 24 hours after installation. Other work which would damage the flooring shall be completed prior to installation.

Provide adequate ventilation to remove moisture from areas and to comply with regulations limiting concentrations of hazardous vapors.

F. WARRANTY

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

B. Manufacturer Warranty:

Refer to PART 1-PRODUCTS for minimum years from date of installation per each floor type. Final acceptance by the Government. Submit manufacturer warranty.

G. QUALITY ASSURANCE

A. Installer Qualifications: A company specializing in carpet/Porcelain Tile and base installation with a minimum three (3) years' experience and employing experienced flooring installers who have retained, and currently hold, an INSTALL Certification, or a certification from a comparable certification program, and a valid OSHA 10 certification.

1. Installers to be certified by INSTALL or a comparable certification program with the following minimum criteria:

- a. US Department of Labor approved four (4) year apprenticeship program, 160 hours a year
- b. Porcelain Tile Master grade certificate, ANSI A137.1.
- c. Career long training
- d. Manufacturer endorsed training
- e. Fundamental journeyman skills certification

B. Mockup: Install (4 ft. x 4 ft.) minimum mockup of each material to verify selections made under sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation. Engage a qualified independent inspector approved by Contracting Officer Rep. (COR) to examine carpet/resilient flooring and base installation

workmanship of mockup and evaluate the workmanship according to the criteria established by INSTALL's Certification Program submit a report of installation evaluation. COR approved mockups may become part of the completed Project if undisturbed at the time of Substantial Completion.

- C. The floor covering manufacturer shall certify that products supplied for installation comply with local regulations controlling use of volatile organic compounds (VOC's).
- D. Furnish materials from the same single source and production run, which shall be indicated on packaging labels

H. **APPLICABLE PUBLICATIONS**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):
 - ANSI/NSF 140-10 Sustainable Carpet Assessment Standard
- C. American Association of Textile Chemists and Colorists (AATCC):
 - 16-04..... Colorfastness to Light
 - 134-11 Electric Static Propensity of Carpets
 - 165-08 Colorfastness to Crocking: Textile Floor Coverings-AATCC Crockmeter Method
 - 174-11 Antimicrobial Activity Assessment of New Carpets
- D. ASTM International (ASTM):
 - D1335-12..... Tuft Bind of Pile Yarn Floor Coverings
 - D3278-96(R2011) Flash Point of Liquids by Small Scale Closed-Cup Apparatus
 - D5116-10..... Determinations of Organic Emissions from Indoor Materials/Products
 - D5252-11..... Operation of the Hexapod Tumble Drum Tester
 - D5417-11..... Operation of the Vettermann Drum Tester
 - E648-14c Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
- E. Code of Federal Regulation (CFR):
 - 40 CFR 59..... Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating
- F. The Carpet and Rug Institute (CRI):
 - CIS Carpet Installation Standard
- G. International Standards and Training Alliance (INSTALL)
- H. International Organization for Standardization (ISO):
 - 2551-81 Machine-Made Textile Floor Coverings
- I. U.S. Consumer Product and Safety Commission (CPSC):
 - 16 CFR 1630 Surface Flammability of Carpets and Rugs
- Resilient flooring:
 - D2047-11..... Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
 - D2240-05(R2010) Test Method for Rubber Property—Durometer Hardness
 - D4078-02(R2008) Water Emulsion Floor Finish
 - E648-14c Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
 - E662-14 Specific Optical Density of Smoke Generated by Solid Materials
 - E1155/E1155M-14 Determining Floor Flatness and Floor Levelness Numbers

F510/F510M-14.....	Resistance to Abrasion of Resilient Floor Coverings Using an Abrader with a Grit Feed Method
F710-11.....	Preparing Concrete Floors to Receive Resilient Flooring
F925-13.....	Test Method for Resistance to Chemicals of Resilient Flooring
F1066-04(R2014)	Vinyl Composition Floor Tile
F1344-12(R2013)	Rubber Floor Tile
F1700-13a	Solid Vinyl Floor Tile
F1303-04(2009).....	Sheet Vinyl Floor Covering with Backing.
F1913-04(2010).....	Sheet Vinyl Flooring without Backing
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
F2195-13.....	Linoleum Floor Tile
C.....	Code of Federal Regulation (CFR):
40 CFR 59.....	Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating
American National Standards Institute (ANSI):	
A10.20-06(R2011).....	Safe Operating Practices for Tile, Terrazzo and Marble WorkA108/A118/A136-14 Installation of Ceramic Tile
A108.01-13.....	Subsurfaces and Preparations by Other Trades
A108.02-13.....	Materials, Environmental, and Workmanship
A108.1A-14	Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar
A108.1B-10.....	Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar
A108.1C-10.....	Contractors Option; Installation of Ceramic Tile in the Wet-Set method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar
A108.4-09.....	Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive
A108.6-10.....	Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy
A108.8-10.....	Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout
A108.10-10.....	Grout in Tilework
A108.13-10.....	Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone
A118.1-12.....	Dry-Set Portland Cement Mortar
A118.3-13.....	Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive
A118.4-12.....	Latex-Portland Cement Mortar
A118.5-10.....	Chemical Resistant Furan Mortars and Grouts
A118.6-10.....	Cement Grouts for Tile Installation
A118.7-10.....	High Performance Cement Grouts for Tile Installation
A118.9-10.....	Cementitious Backer Units
A118.10-14.....	Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation
A136.1-13.....	Organic Adhesives for Installation of Ceramic Tile
A137.1-12.....	American National Standard Specifications for Ceramic Tile

C. ASTM International (ASTM):

A666-10.....	Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar
A1064/A1064M-14.....	Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
C109/C109M-13	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 inch. or [50-mm] Cube Specimens)
C241/C241M-13	Abrasion Resistance of Stone Subjected to Foot Traffic
C348-14	Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
C627-10	Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
C954-11	Steel Drill Screws for the Application of Gypsum Board on Metal Plaster Base to Steel Studs from 0.033 in (0.84 mm) to 0.112 in (2.84 mm) in thickness
C979/C979M-10	Pigments for Integrally Colored Concrete
C1002-14	Steel Self-Piercing Tapping Screws for the Application of Panel Products
C1027-09	Test Method for Determining Visible Abrasion Resistance of Glazed Ceramic Tile
C1127-01(R2009)	Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with an Integral Wearing Surface
C1178/C1178M-13	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
C1325-14	Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units
C1353/C1353M-09(R2013) ..	Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform, Double-Head Abraser
D1204-14.....	Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
D2240-05(R2010)	Test Method for Rubber Property – Durometer Hardness
D2497-07(R2012)	Tolerances for Manufactured Organic-Base Filament Single Yarns
D3045-92(R2010)	Heat Aging of Plastics Without Load
D4397-10.....	Standard Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications
D5109-12.....	Standard Test Methods for Copper-Clad Thermosetting Laminates for Printed Wiring Boards
D.	Code of Federal Regulation (CFR):
40 CFR 59.....	Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating
E.	Marble Institute of America (MIA): Design Manual III-2007
F.	Tile Council of North America, Inc. (TCNA):
Handbook for Ceramic Tile Installation (2014)	
DCOF AcuTest-2012	Dynamic Coefficient of Friction Test

Part 2 – Products

A. CPT-1

Carpet as indicated on drawings based on Shaw Contract, Collective Time Collection, styles: Rest, unwind & Activity Modular Carpet tiles or equal approved GSA Product with recycled content and conforming to the following salient characteristics and requirements:

Salient Characteristics:

- | | |
|------------------------|---|
| • Construction: | Multi-level pattern loop |
| • Face Fiber: | Type 6,6, Extreme Nylon |
| • Dye Method: | 100% Solution dyed |
| • Installation Method: | To be determined in field. Provide dry mock-up |
| • Width: | 24"x24" |
| • Warranties: | lifetime commercial limited |
| • Color #: | Shall be multi-colored. No solid colors allowed |
| • Pattern: | Shall come from a collection with a min. of 3 patterns, organic/patterns suitable for a healing environment style |

B. RB-1: Contoured Resilient Wall Base (500 linear feet)

Contoured Resilient Wall Base shall be equal to Johnsonite Commercial Millwork Wall base, 6"h Style: Monarch profile or as approved by the Government and conforming to the following salient characteristics and requirements: Locations: All walls and columns receiving new flooring.

Salient Characteristics:

- Shall replicate routed wood moulding profiles
- Pre-mitered inside and outside corners to be provided
- No rolls, strips only
- Base shall meet the requirements of ASTM F1861, Type TP, Group 1
- 3/8" Thick TP Rubber base with type-B cove bottom – satin finish
- Install base per the Manufacturer's required installation instructions in order to uphold the Warranty.
- Adhesives meet VOC content limit of SCAQMD Rule 1168
- Made in the USA
- Minimum 5 year warranty

Note: VA and/or Representatives reserves the right to have test portions of material installation removed to check for non-uniform adhesion and spotty adhesive coverage.

C. PT-1: Colorbody Porcelain Tile

Colorbody Porcelain Tile shall be by DalTile Style Fabrique P686 3/8" Thickness

Floor Color: Gris Linen 12x24 and 24x24 Laticrete Grout Color #67

Wall Color: Crème Linen 12x24 Laticrete Grout Color #90

1. Slip Resistant Tile for Floors:

Coefficient of friction, when tested in accordance with ANSI A137.1 and measured per the TCNA DCOF AcuTest. Equal to or greater than .42 for level interior tile floors that will be walked on when wet.

2. Factory Blending: For tile with color variations, within the ranges selected during sample submittals blend tile in the factory and package so tile units taken from one (1) package show the same range in colors as those taken from other packages and match approved samples.
3. Factory-Applied Temporary Protective Coating:
 - Protect exposed face surfaces (top surface) of tile against adherence of mortar and grout by pre-coating with a continuous film of hot applied petroleum paraffin wax.
 - Do not coat unexposed tile surfaces.
 - Pre-wax tiles set or grouted with epoxy or latex modified mortars.
2. Trim Pieces: Square internal and external corner joints are not acceptable.
 - Use aluminum schluter products for bullnose base around perimeter of room, inside/outside corners of walls and cap on wainscot walls.

5. SETTING MATERIALS OR BOND COATS:

- A. Conform to TCNA Handbook for Ceramic Tile Installation.
- B. Portland Cement Mortar: ANSI A108.02.
- C. Latex-Portland Cement Mortar: ANSI A118.4.
- For wall applications, provide non-sagging, latex-portland cement mortar complying with ANSI A118.4.
- Prepackaged Dry-Mortar Mix: Factory-prepared mixture of portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to which only water needs to be added at Project site.
- D. Dry-Set Portland Cement Mortar: ANSI A118.1. For wall applications, provide non-sagging, latex-portland cement mortar complying with ANSI A118.1.
- E. Organic Adhesives: ANSI A136.1, Type 1.
- F. Chemical-Resistant Bond Coat:
- Epoxy Resin Type: ANSI A118.3.
- Furan Resin Type: ANSI A118.5.

6. GROUTING MATERIALS:

- A. Coloring Pigments:
 1. Pure mineral pigments, lime proof and nonfading, complying with ASTM C979/C979M.
 2. Coloring pigments may only be added to grout by the manufacturer.
 3. Job colored grout is not acceptable.
- B. Water-Cleanable Epoxy Grout: ANSI A118.3 //, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59 (EPA Method 24) //.
 1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 60 and 100 degrees C (140 and 212 degrees F), respectively, and certified by manufacturer for intended use.

7. METAL DIVIDER STRIPS:

- A. Install metal divider strips in floor joints between ceramic and quarry tile floors and between tile floors and adjacent flooring of other materials where the finish floors are flush unless shown otherwise on construction documents.
- B. Set divider strip in mortar bed to line and level centered under doors or in openings.

1. **QUANTITIES**:

See floor plan, provided in a separate document.

2. **CARPET PHYSICAL CHARACTERISTICS**:

All carpet shall comply with the following minimum characteristics:

- Carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.
- Manufacturers standard construction commercial carpet:
 - b. Modular Tile: 660 mm (24 inches) square tile.
- Provide static control to permanently control static build upto less than 2.0 kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.
- Backing materials: Manufacturer's unitary backing designed for glue-down installation using recovered materials.
- Appearance Retention Rating (ARR): Carpet shall be tested and have the minimum 3.5-4.0 Severe ARR when tested in accordance with either the ASTM D 5252 (Hexapod) or ASTM D 5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified.
- Tuft Bind: Minimum force of 40 N (10 lb) required to pull a tuft or loop free from carpet backing. Test per ASTM D1335.
- Colorfastness to Crocking: Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating.
- Colorfastness to Ozone: Comply with AATCC 129, minimum rating of 4 on the AATCC color transfer chart.
- Methenamine Pill Test: Passes (ASTM-D-2859)
- Delamination Strength: Minimum of 440 N/m (2.5 lb/inch) between secondary backing.
- Flammability and Critical Radiant Flux Requirements:
 - a. Test Carpet in accordance with ASTM E 648.
 - b. Class I: Not less than 0.45 watts per square centimeter.
 - c. Carpet in corridors, exits and Medical Facilities: Class I.
- Density: Average Pile Yarn Density (APYD):
 - a. Corridors, lobbies, entrances, common areas or multipurpose rooms, open offices, waiting areas and dining areas: Minimum APYD 6000.
- VOC Limits: Use carpet and carpet adhesive that comply with the following limits for VOC content when tested according to ASTM D 5116:
 - a. Carpet, Total VOCs: 0.5 mg/sq.m x hr.
 - b. Carpet, 4-PC (4-Phenylcyclohexene): 0.05 mg/sq.m x hr.
 - c. Carpet, Formaldehyde: 0.05 mg/sq.m x hr.
 - d. Carpet, Styrene: 0.4 mg/sq.m x hr.
 - e. Adhesive, Total VOCs: 10.00 mg/sq.m x hr.
 - f. Adhesive, Formaldehyde: 0.05 mg/sq.m x hr.
 - g. Adhesive, 2-Ethyl-1-Hexanol: 3.00 mg/sq.m x hr.
- Indoor air quality: CCI/CRI Green Label Plus

3. ADHESIVE AND CONCRETE PRIMER

- A. Waterproof, resistant to cleaning solutions, steam and water, nonflammable, complies with air-quality standards as specified. Adhesives flashpoint minimum 60 degrees C (140 degrees F), complies with ASTM D 3278.
- B. LVT / Rubber adhesive for heavy traffic, Physical Therapy use.

4. EDGE STRIPS (MOLDING)

- A. Metal: Equal to Schluter
 - 1. Hammered surface aluminum, pinless, clamp down type designed for the carpet being installed, equal to schluter products.

2. Floor flange not less than 38 mm (1-1/2 inches) wide, face not less than 16 mm (5/8 inch) wide.
3. Finish: Clear anodic coating unless specified otherwise.
- B. Rubber:
 1. ADA compliant designed for the carpet being installed, equal to Johnsonite products. VA to select color.

5. LEVELING COMPOUND (FOR CONCRETE FLOORS)

- A. Provide and install Portland cement bases polymer modifier with latex or polyvinyl acetate resin manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable. Products equal to Maxxon Level-right and approved for use with carpet adhesives.

PART 3 - EXECUTION

A. SURFACE PREPARATION

- A. Examine surfaces on which carpeting is to be installed.
- B. Clean floor of oil, waxy films, paint, dust and deleterious substances that prevent adhesion, leave floor dry and cured, free of residue from curing or cleaning agents and existing carpet materials.
- C. Correct conditions which will impair proper installation, including trowel marks, pits, dents, protrusions, cracks or joints.
- D. Fill cracks, joints depressions, and other irregularities in concrete with leveling compound.
 1. Do not use adhesive for filling or leveling purposes.
 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joint lines.
- E. Test new concrete subfloor prior to adhesive application for moisture and surface alkalinity per CRI 104 Section 6.3.1 or per ASTM E1907.

Porcelain Tile:

1. Prepare surface by grinding, chipping, self-contained power blast cleaning or other suitable mechanical methods to completely expose uncontaminated concrete or masonry surfaces. Follow safety requirements of ANSI A10.20.
2. Remove existing concrete fill or topping to structural slab. Clean and level the substrate for new setting bed and waterproof membrane or cleavage membrane.

B. INSTALLATION

1. FLOORING:

- A. Do not install flooring until work of other trades including painting is complete and dry.
 1. Relax flooring in accordance with CRI and Manufacturer's guidelines
 1. Maintain temperature in accordance with CRI and Manufacturer's guidelines.
- B. Secure carpet to subfloor of spaces with adhesive applied as recommended by carpet manufacturer.
- C. Follow flooring manufacturer's recommendations for matching pattern and texture directions.

- D. Cut openings in flooring where required for installing equipment, pipes, outlets, and penetrations.
- 2. Use additional adhesive to secure flooring around pipes and other vertical projections.

2. EDGE STRIPS INSTALLATION:

- A. Install metal edge strips over exposed carpet edges adjacent to uncarpeted finish flooring. Transitions must comply with ABA and OSHA requirements.
- B. Anchor metal strips to floor with suitable fasteners. Apply adhesive to edge strips, insert carpet into lip and press it down over carpet.

3. CONTOURED RESILIENT WALL BASE:

- A. Location:
 - 1. Unless otherwise specified or shown, where base is scheduled, install base over toe space of base of casework, lockers, laboratory, pharmacy furniture island cabinets and where other built-in equipment occurs.
 - 2. Extend base scheduled for room into adjacent closet, alcoves, and around columns.
- B. Application:
 - 1. Apply adhesive uniformly with no bare spots.
 - 2. Set base with joints aligned and butted to touch for entire height.
 - 3. Before starting installation, layout base material to provide the minimum number of joints with no strip less than 600 mm (24 inches) length.
 - a. Short pieces to save material will not be permitted.
 - b. Locate joints as remote from corners as the material lengths or the wall configuration will permit.
- C. Roll base for complete adhesion.

4. PORCELAIN TILE:

- 1. Lay out tile work so that no tile less than one-half full size is used. Make all cuts on the outer edge of the field. Align new tile work scheduled for existing spaces to the existing tile work unless specified otherwise.
- 2. Set tile firmly in place with finish surfaces in true planes. Align tile flush with adjacent tile unless shown otherwise on construction documents.
- 3. Form intersections and returns accurately.
- 4. Cut and drill tile neatly without marring surface.
- 5. Cut edges of tile abutting penetrations, finish, or built-in items:
 - a. Fit tile closely around electrical outlets, piping, fixtures and fittings, so that plates, escutcheons, collars and flanges will overlap cut edge of tile.
 - b. Seal tile joints water tight around electrical outlets, piping fixtures and fittings before cover plates and escutcheons are set in place.
- 6. Completed work is to be free from hollow sounding areas and loose, cracked or defective tile.
- 7. Remove and reset tiles that are out of plane or misaligned.
- 8. Floors:
 - a. Extend floor tile beneath casework and equipment, except those units mounted in wall recesses.
 - b. Align finish surface of new tile work flush with other and existing adjoining floor finish where indicated in construction documents.
 - c. In areas where floor drains occur, slope tile to drains.
 - d. Push and vibrate tiles over 203 mm (8 inches) square to achieve full support of bond coat.

9. Walls:
 - a. Cover walls and partitions, including pilasters, furred areas, and freestanding columns from floor to ceiling, or from floor to nominal wainscot heights if indicated in construction documents with tile.
 - b. Finish reveals of openings with tile, except where other finish materials are indicated in construction documents.
 - c. At window openings, provide tile stools and reveals.
 - d. Finish wall surfaces behind and at sides of casework and equipment, except those units mounted in wall recesses, with same tile as scheduled for room proper.
10. Joints:
 - a. Keep all joints in line, straight, level, perpendicular and of even width unless shown otherwise on construction documents.
 - b. Make joints 2 mm (1/16 inch) wide for glazed wall tile and mosaic tile work.
 - c. Make joints in quarry tile work not less than 6 mm (1/4 inch) nor more than 9 mm (3/8 inch) wide. Finish joints flush with surface of tile.
 - d. Make joints in paver tile, porcelain type; maximum 3 mm (1/8 inch) wide.
11. Back Buttering: For installations indicated below, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108/A118/A136 series of tile installation standards:
 - a. Tile wall installations in wet areas, including showers, tub enclosures, laundries and swimming pools.
 - b. Tile installed with chemical-resistant mortars and grouts.
 - c. Tile wall installations composed of tiles 203 by 203 mm (8 by 8 inches) or larger.
 - d. Exterior tile wall installations.
12. porcelain tile installed with latex portland cement BONDING mortar:
 - A. Due to the denseness of porcelain tile use latex portland cement bonding mortar that meets the requirements of ANSI A108.01. Mix bonding mortars in accordance with manufacturer's instructions. Provide liquid ratios and comply with dwell times during the placement of bonding mortar and tile.
13. THIN SET CERAMIC and porcelain TILE INSTALLED WITH DRY-SET PORTLAND CEMENT AND LATEX-PORTLAND CEMENT MORTAR:
 - A. Installation of Tile: ANSI A108.1B, except as specified otherwise.
 - B. Slope tile work to drains at not less than 3 mm in 305 mm (1/8 inch per foot).
14. THIN SET CERAMIC and porcelain TILE INSTALLED WITH ORGANIC ADHESIVE
 - A. Installation of Tile: ANSI A108.4.
15. THIN SET CERAMIC and porcelain TILE INSTALLED WITH CHEMICAL-RESISTANT BOND COAT:
 - A. Epoxy Resin Type: Install tile in accordance with Installation of Tile with Epoxy Mortar; ANSI A108.6.
16. CERAMIC and porcelain TILE INSTALLED WITH ELASTOMERIC BOND COAT:
 - A. Surface Preparation: Prepare surfaces as specified.
 - B. Installation of Elastomeric Membrane: ANSI A108.10 and TCNA F122-14 (on ground concrete) and F122A-14 (above-ground concrete).
 1. Prime surfaces, where required, in accordance with manufacturer's instructions.
 2. Install first coat of membrane material in accordance with manufacturer's instructions, in thickness of 0.76 to 1.3 mm (30 to 50 mils).
 3. Extend material over flashing rings of drains and turn up vertical surfaces not less than 101 mm (4 inches) above finish floor surface.
 4. When material has set, recoat areas with a second coat of elastomeric membrane material for a total thickness of 1.3 to 1.9 mm (50 to 75 mils).
 5. After curing test for leaks with 25 mm (1 inch) of water for 24 hours.

C. Installation of Tile in Elastomeric Membrane:

1. Spread no more material than can be covered with tile before material starts to set.
2. Apply tile in second coat of elastomeric membrane material in accordance with the coating manufacturer's instructions in lieu of aggregate surfacing specified in ASTM C1127. Do not install top coat over tile.

C. CLEANING:

1. CARPET:

- A. Remove waste, fasteners and other cuttings from carpet floors.
- B. Vacuum carpet and provide suitable protection. Do not use polyethylene film.
- C. Do not permit traffic on carpeted surfaces for at least 48 hours after installation. Protect the carpet in accordance with CRI 104.
- D. Do not move furniture or equipment on unprotected carpeted surfaces.
- E. Just before final acceptance of work, remove protection and vacuum carpet clean.

2. CONTOURED RESILIENT WALL BASE:

- A. Clean all exposed surfaces of base and adjoining areas of adhesive spatter before it sets.
- B. Keep traffic off resilient material for at least 72 hours after installation.
- C. Clean and polish materials in the following order:
 1. After two weeks, scrub resilient base materials with a minimum amount of water and a mild detergent. Leave surfaces clean and free of detergent residue. Polish resilient base to a gloss finish.
- D. Where protective materials are removed and immediately prior to acceptance, replace damaged materials and re-clean resilient materials. Damaged materials are defined as having cuts, gouges, scrapes or tears and not fully adhered.

3. PORCELAIN TILE:

- A. Thoroughly sponge and wash tile. Polish glazed surfaces with clean dry cloths.
- B. Methods and materials used are not permitted to damage or impair appearance of tile surfaces.
- C. The use of acid or acid cleaners on glazed tile surfaces is prohibited.
- D. Clean tile grouted with epoxy, furan and commercial portland cement grout and tile set in elastomeric bond coat as recommended by the manufacturer of the grout and bond coat.

D. PROTECTION:

- A. Protect installed flooring as recommended by flooring manufacturer against damage from rolling loads, other trades, or placement of fixtures and furnishings.
- B. Keep traffic off flooring for 72 hours after installation.
- C. Where construction traffic is anticipated, cover flooring with reinforced kraft paper properly secured and maintained until removal is authorized by the Resident Engineer.
- D. Where protective materials are removed and immediately prior to acceptance, repair any damage, re-clean flooring.

END OF DOCUMENT