LONG BEACH CITY COLLEGE DISTRICT
CONTRACTS MANAGEMENT DEPARTMENT
4901 EAST CARSON STREET
LONG BEACH, CA 90808
Ph. (562) 938-4843 | Fax: (562) 938-4640

BID C1994 BUILDING L LIBRARY INTERIOR RENOVATION AT THE LIBERAL ARTS CAMPUS

ADDENDUM NO. 1

April 29, 2019

This Addendum forms a part of the Contract Documents and modifies the original DSA approved bid documents. Acknowledge receipt of the Addendum on Section 1.2 of the Bid Proposal. Failure to do so may result in the bid being deemed non-responsive.

Note: It is the responsibility of all bidders to notify all subcontractors from whom they request bids and from whom they accept bids of all changes contained in this addendum.

ADDENDUM NO. 1 CONTENTS

* * * * * * * * * * *

I. ANSWERS TO PRE-BID INQUIRES

1. ***Q:*** Is the District providing all the carpet, LVT and adhesives required for the new flooring on this project?

   A: *Yes. The District will be providing all the flooring material (LVT, Carpet Tiles, Adhesive, Transition Strips, Base and Base adhesives) for this project. Contractor will also be responsible for cutting in a 6 ft. diameter LB Logo into the carpet tiles, in front of the new reference desk. This LB logo will also be provided by the District. All flooring material to be installed per the attached Mannington LVT and carpet installation guidelines.*

2. ***Q:*** Where will the District deliver the flooring material to?

   A: *All the flooring material will be shipped directly to the project site. It is the Contractors responsibility to store this material within the library renovation project. Contractor to provide 20-day written notice to the District for when this material is to be delivered to site.*

3. ***Q:*** Is there any attic stock required for the ceiling tiles?

   A: *Further to the ceiling work shown on the drawings, the District requires the Contractor to provide 15 boxes of the 2 x 4 ceiling tiles for placement within the existing ceiling grid. These ceiling tiles are to replace random tiles that have previously been damaged by water leaks. All such tiles will be marked by the District for replacement by the Contractor.*

4. ***Q:*** Will any existing furniture or books have to be removed or disposed of?

   A: *The District will be removing all books from the book stacks prior to the Contractor taking possession of the project site. Contractor is to allow for removing and disposing of four (4) 16 x 4 tables and seventy-five (75) study cubicles as shown on SK-03. The Contractor also to allow for removing and disposing of 375 linear feet of periodicals as shown on SK-04.*

5. ***Q:*** Office Painting – The Bid Set includes Drawing A.1.02- ADDM1 that has offices shaded as not in scope but has keynote 115 marked in these areas, saying these offices are to be painted. Are these office part of the scope of work?

   A: *All offices numbered 109, 114, 115, 111, 112, 120, 121, 125, 126 and study rooms 176, 177, 178, 180, 181 and 182 should not have been shaded and are part of the scope of work. These offices / study rooms require all walls and doors to be painted. Contractor will be responsible for relocating all the existing furniture in these spaces to the middle of the room, protecting with plastic and returning back to the existing locations once painting works are complete. See SK-05 for typical furniture layout.*

6. ***Q:*** Existing Department Signage – Are these to remain in place?

   A: *Yes. All Department Signage except two locations are to remain in place and protected during painting. The two block letter signage locations to be removed are shown on SK-06.*

7. ***Q:*** Book Stacks – Drawing A.012 – ADDM1 - Keynote 100, 101, 102, 103 104, 105, and 106 refer to new book stacks, but at the job walk were these not listed as being modified in the field from the existing stacks. Please confirm.

   A: *Yes all book stacks that are listed as new in the above keynotes can be site modified from the existing stacks by a Spacersaver factory trained and certified technician. This will help eliminate any lead time to purchase new. See attached sketch SK-07 showing top panels and supports (utilized from existing redundant end panels) for all book stacks reduced down in size to 36"- 48". Also attached is the certification letter from Spacesaver listing McMurry Stern as the only Spacesaver certified installer for this area.*

II. ATTACHMENTS

1. Attachment: Mannington LVF / LVT and Carpet Tile Installation Guidelines
2. Attachment SK-03: Study Cubicle 16X4 Table Removal
3. Attachment SK-04: Periodicals Removal
4. Attachment SK-05: Office & Study Room Painting
5. Attachment SK-06: Dept. Signage Removal
6. Attachment SK-07: Cantilever Brackets for Laminated Canopy Top

*****END OF ADDENDUM NO. 1*****

LONG BEACH COMMUNITY COLLEGE DISTRICT

Alan Moloney, Deputy Director
Purchasing & Contracts Management

4-09-19
Date

Color Anchor, Divergent, Mannington Select, Nature's Paths, Primary Elements, Uninterrupted, Walkway & Walkway 20 Luxury Vinyl Plank & Tile Installation Guidelines

GENERAL INFORMATION

Contact Mannington Technical Services for guidance about subfloor testing and installation recommendations. Technical Services can be reached Monday to Friday, 8:00 a.m. to 5:00 p.m. EST at 800.241.2262 ext 3.

These instructions cover all fully adhered installations of Mannington Commercial Luxury Vinyl Plank and Tile (LVF). This includes: **Color Anchor, Divergent, Mannington Select, Nature's Paths, Primary Elements, Uninterrupted, Walkway and Walkway 20.** All recommendations are based on the most recent available information. The information on these sheets provides general guidelines. For complete details consult Mannington Commercial's General Installation Guide or visit our website at manningtoncommercial.com. These instructions and recommendations must be followed for a satisfactory installation.

The installation of Mannington Commercial LVF is straightforward and similar to the installation procedures that apply to all quality resilient floors. Good preparation is essential for a trouble-free installation. Do not install Mannington Commercial LVF until job-site testing and subfloor preparations are finished and the work of all other trades is complete. Site conditions must comply with the relevant building codes and local, state and national regulations.

- Mannington Commercial LVF is recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates. Never install Mannington Commercial LVF over residual asphalt type (Cutback) adhesive as "Bleed Through" may occur.
- Mannington Commercial LVF is not suitable for external installation or unheated locations.
- Mannington Commercial flooring, adhesive, job-site and subfloor must be acclimated to a stable condition before installation. (See Job-site Testing).
- Following installation, Mannington Commercial LVF foot traffic should be minimized for 24 hours; point loads and rolling traffic should be minimized for 48 hours, and utilize minimal wet cleaning for 5 days **(except XpressStep)**.
- Mannington Commercial LVF flooring should remain at a temperature between 55°-85°F (13°-29°C) during its service life.
- Adhesive types can have a significantly different moisture tolerance which can influence required subfloor prep as well as install time.

MATERIAL RECEIVING, HANDLING & STORAGE

1. All floor covering products require care during storage and handling. It is important to store flooring products in a dry, temperature-controlled interior area.
2. The temperature range should be between 65°-100°F, and the relative humidity should be controlled and maintained between 30-70%.
3. Material must be conditioned for at least 48 hours before beginning the installation.
4. Flooring materials that are shipped in cartons must also be stored properly. Cartons must be kept squarely positioned on the pallet to prevent distortion of the contents and to be fully supported. Do not store close to exterior walls, in direct sunlight or near HVAC vents.
5. Stored cartons are to be protected from forklift and other traffic that can damage carton corners. Never double-stack pallets of flooring products.

6. Immediately remove all shrink wrapping before acclimation and verify materials delivered are correct style, color and quantity.
7. Report discrepancies immediately to Mannington Commercial at 800.241.2262 ext. 2 (Claims), as installation of products installed with visual defects, mixed production runs or incorrect style will not be honored.

JOB-SITE TESTING

1. Before job-site testing, the building envelope must be sealed (walls, roofing, windows, doorways etc., installed).
2. The installation area and materials to be installed shall be maintained at a minimum of 65°F (18.3°C) and a maximum of 85°F (29.4°C) for 48 hours before, during and for 48 hours after completion of the installation. Relative humidity level extremes should also be avoided. General recommended humidity control level is between 35–55%. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.
3. Test sites must be properly prepared and protected for the duration of testing to achieve valid results.
4. Surface flatness for all subfloors: The surface shall be flat to 3/16" (3.9mm) in 10 ft. (3050 mm) and 1/32" (0.8 mm) in 1 ft. (305 mm). To check flatness, place a 10-ft. straight edge, string, laser level or use another suitable method on the surface, and measure the gap.
5. Concrete subfloors:
    - **Concrete subfloors must be finished, cured, and free of all sealers, coatings, finishes, dirt, film-forming curing compounds or other substances that may prevent proper bonding of the flooring materials (ACI 302.1 and ASTM F710).**
    - Randomly check concrete subfloor for porosity using the drop water test. Place a 1"-diameter drop of water directly onto the concrete subfloor. If the water droplet does not dissipate within 60 to 90 seconds, the subfloor is considered non-porous.
    - Concrete subfloors must have a minimum compressive strength of 3000 psi. Concrete subfloors shall not consist of lightweight concrete or gypsum.
    - Moisture testing: Perform either the preferred In-situ Relative Humidity (RH) Test (ASTM F2170) or the acceptable Moisture Vapor Emission Rate (MVER) Test (ASTM F1869). For acceptable moisture limits please refer to the specifications of the adhesive of choice.
    - Alkalinity: You must test surface alkalinity (pH) as per ASTM F710.
6. Wood subfloors and underlayment panels shall have the moisture content tested using a suitable wood pin meter. Readings between the wood subfloor and underlayment should be within 3% and have a maximum moisture content of 14% or less.

MOISTURE SUPPRESSANT SYSTEM

Concrete subfloors that exceed adhesive specifications will require a Moisture Suppressant System. Due to complexities associated with moisture vapor transmission, emissions and movement of soluble salts (alkalinity) in concrete subfloors, we do not offer, recommend or warranty a specific solution for excess moisture in concrete slabs. However, there are many companies that offer solutions with warranties for excess moisture in concrete slabs.

Mannington Commercial suggests that you reference the current ASTM F710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring," and ASTM F3010, "Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for Use Under Resilient Flooring Systems." Contact one or more of the following or other moisture suppressant system suppliers for assistance:

Ardex: 724.203.5000, www.ardex.com
Koester American Corp.: 757.425.1206, www.koesterusa.com
Mapei: 800.426.2734, www.mapei.com
Schonox: 855.391.2649, www.hpsubfloors.com
Uzin: 800.505.4810, www.ufloorsystems.com

SUBFLOOR PREPARATION

Concrete

Careful subfloor preparation is vital for an excellent floor appearance and good tile/plank adhesion. The subfloor must be smooth, firm, flat, clean, dry, free from defects and fit for purpose. A suitable smoothing compound should be used to ensure that no irregularities show through to the surface of the finished floor. In all cases, the subfloor must meet the moisture and pH requirements before installation.

Below and on-grade concrete subfloors must have a suitable vapor retarder properly installed directly beneath the slab. Always follow manufacturer's written recommendations for the use and installation of their appropriate surface preparation materials.

1. Record and file site conditions, test results and any corrective action(s) taken. It is important to maintain this documentation throughout the warranty period.
2. Subfloor must be clean (free of dirt, sealers, curing, hardening or parting compounds or any substance that may stain or prevent adhesion), smooth, flat, sound, fit for purpose and free of movement, excessive moisture and high alkalinity.
3. Slick surfaces such as power-troweled concrete shall be abraded or profiled to allow for a mechanical bond between the adhesive and subfloor.
4. Remove existing resilient floor covering; remove all residual adhesive, paint or other contaminants following RFCI recommended work practice. The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and may void any warranty.

   WARNING: ASBESTOS & SILICA - Refer to the current Resilient Floor Covering Institute (RFCI) document "Recommended Work Practices for Removal of Existing Resilient Floor Coverings" for guidance (www.RFCI.com).

5. Perform corrective actions necessary for elevated moisture or high alkalinity conditions.
6. Surface flatness for all subfloors: The surface shall be flat to 3/16" (3.9 mm) in 10 ft. (3050 mm) and 1/32" (0.8 mm) in 1 ft. (305 mm). Bring high spots level by sanding, grinding etc. and fill low spots. Smooth surface to prevent any irregularities or roughness from telegraphing through the new flooring.
7. Leveling and patching: For concrete subfloors, use only high quality Portland cement-based materials (minimum 3000 psi compressive strength according to ASTM C109 or ACI). Mix with water only; do not use latex. Caution: Do not lightly skim coat highly polished or slick power-troweled concrete surfaces. A thin film of floor patch will not bond to a slick subfloor and may become a bond breaker, causing flooring to release at the interface of the subfloor and patching material. If in doubt, perform a bond test prior to commencing with the installation.

Wood

1. Wood subfloors require an underlayment (double layer construction) with a minimum total thickness of 1" (25 mm). Use minimum 1⁄4" (6 mm) thick APA rated "underlayment grade" plywood with a fully sanded face, or other underlayment panel that is appropriate for the intended usage. Install and prepare panels and seams according to the manufacturer's instructions. Also refer to ASTM F1482, "Standard Practice for Installation and Preparation of Panel Underlayments to Receive Resilient Flooring."
2. Many times, wood panel subfloors are damaged during the construction process or are not underlayment grade. These panels must be covered with an appropriate underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. It should be understood that underlayment panels cannot correct structural deficiencies.

3. Panels intended to be used as underlayment should be specifically designed for this purpose. These panels should have a minimum thickness of 1/4" (6 mm). Any panels selected as an underlayment must meet the following criteria:
    - Be dimensionally stable
    - Have a smooth, fully sanded face, so graining or texture will not telegraph through
    - Be resistant to both static and impact indentation
    - Be free of any surface components that may cause staining, such as plastic fillers, marking inks sealers, etc.
    - Be of uniform density, porosity and thickness
    - Have a written warranty for suitability and performance from the panel manufacturer, or have a history of proven performance
4. Any unevenness at the joints between panels must be sanded to a level surface. Gaps between panels, hammer indentations and all other surface irregularities must be filled and sanded.
5. Particleboard, chipboard, construction grade plywood, OSB, flake-board and wafer board are not recommended as underlayments. All have inadequate uniformity, poor dimensional stability and variable surface porosity. Mannington Commercial will not accept responsibility for adhered installation over these subfloors. In all cases, the underlayment manufacturer or underlayment installer is responsible for all underlayment warranties.

INSTALLATION PROCEDURE

Before starting the Mannington Commercial LVF installation, ensure the following are satisfactorily completed:

1. Acclimation: The installation area and materials to be installed shall be maintained at a minimum of 65°F (18.3°C) and a maximum of 85°F (29.4°C) for 48 hours before, during and for 48 hours after completion of the installation. Relative humidity level extremes should also be avoided. General recommended humidity control level is between 35-55%. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.
2. Flooring materials: Check that the quantity of Mannington Commercial LVF and adhesive are sufficient for area to be installed. Check material for visual defects before installation. Installation of flooring acknowledges acceptance of materials. Report discrepancies immediately to Mannington Commercial at 800.241.2262 ext. 2 (Claims), as installation of products installed with visual defects, mixed production runs or incorrect style will not be honored.
3. Expansion joints, isolation joints or other moving joints are incorporated into concrete floor slabs in order to permit movement without causing random cracks in the concrete. These joints must be honored and not filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering systems should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.
4. Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall be filled or smoothed with high quality Portland cement-based patching or underlayment compound for filling or smoothing, or both. Patching or underlayment compound shall be moisture, mildew, and alkali-resistant, and shall provide a minimum of 3000 psi compressive strength after 28 days, when tested in accordance with ASTM C109 or ASTM C472, whichever is appropriate.
5. Subfloor preparation: Make sure all surfaces to be covered are completely clean, dry and smooth and that all necessary subfloor preparation has been properly completed and documented.
6. Inspect substrate: Perform final acceptance inspection of substrate.
7. Adjacent surfaces protection: Protect adjacent work areas and finish surfaces from damage during product installation.
8. Flooring protection: Mannington Commercial LVF should be the last material installed to prevent other trades from disrupting the installation and adhesive set-up or damaging the floor.

Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work.

Layout
Mannington Commercial LVF comes in plank and tile formats. All products have arrows imprinted on the back. Lay all arrows pointing in the same direction. Mannington Commercial LVF can be laid out to run either parallel or diagonal to the room or primary wall.

- Tiles should be installed block or staggered; when quarter turned, arrows should alternate.
- Plank flooring should have end joints offset by at least 6″ and staggered to create a random appearance that avoids alignment of end joints. All arrows should point in the same direction.

The following conditions must be given consideration when determining how Mannington Commercial LVF will be installed:

1. **The layout shall be specified by end user, architect or designer.**
2. Establish center marks and determine start point to balance installation in room and have equal tile widths on opposite sides of room. This can be facilitated by dry-laying tiles and marking base lines.
3. The room layout must be set up so that all flooring can be installed while staying off freshly installed tiles. This will minimize tile shifting, adhesive displacement and wet adhesive from oozing up and getting onto the face of the tiles. This can be accomplished by creating work zones outlined with chalk lines to spread adhesive aligned with established base lines. Create work zones that are no wider than the installers' comfortable arm reach and in multiples of the tile width.
4. All installations: Spread only the amount of adhesive that can be covered within the working time specific to the adhesive being used.

When all preparatory work is satisfactorily completed, including dry-fitting cut tiles (if applicable), proceed with installation. Inspect each tile for visual defects before installing. Installation of the flooring implies acceptance of materials.

Adhesives
Mannington Commercial adhesives are specifically formulated to be fully compatible with backings and chemistry and to maximize the performance of Mannington Commercial products. Using substitutes or failing to use Mannington Commercial adhesives as recommended can cut short product life and cause installation failure.

Mannington Commercial recommends the following adhesives for the installation of Mannington Commercial LVF. Only these adhesives should be used. Other adhesives may not provide adequate performance and could result in a failure.

1. **Mannington Commercial V-82 Adhesive:** Solvent-free, acrylic adhesive for installation of Mannington Commercial LVF on porous substrates including concrete. The maximum moisture limits must be no greater than 3 lbs. MVER per ASTM F1869 and/or 75% relative humidity per ASTM F2170. V-82 should be applied with a 1/16″ x 1/32″ x 1/32″ trowel with an approximate spread rate of 150–200 sq. ft. per gallon. See adhesive spec and label for details.
2. **Mannington M-Guard V-88 Adhesive:** Moisture resistant transitional pressure sensitive adhesive. The maximum moisture limits for renovations or older slabs must not exceed moisture tolerances of 8 lbs. maximum MVER, 90% relative humidity and 10 pH. The maximum moisture limits for new construction concrete is 12 lbs. MVER, 99% relative humidity and 12 pH. The adhesive will not correct pre-existing moisture problems in older concrete subfloors. V-88 should be applied over porous subfloors using 1/16″ x 1/32″ x 1/32″ U-notched trowel with an approximate spread rate of 250 sq. ft. per gallon, and over non-porous subfloors using a 1/16″ x 1/32″ x 5/64″ U-notched trowel with an approximate spread rate of 350 sq. ft. per gallon. For non-porous substrates, adhesive must dry completely. See adhesive spec and label for details.

3. **Mannington Commercial V-95 Adhesive:** Solvent-free, 2-component epoxy adhesive for use on non-porous substrates, under hospital beds or operating room tables, in areas with heavy rolling loads, in areas subject to standing water or topical moisture and in areas where high performance is needed. The maximum moisture limits must be no greater than 3 lbs. MVER per ASTM F1869 and/or 75% maximum relative humidity per ASTM F2170. V-95 should be applied with a 1/16" x 1/32" x 1/32" trowel with an approximate spread rate of 185–245 sq. ft. per gallon. See adhesive spec and label for details.
4. **XpressStep Spray Adhesive:** Water based spray adhesive recommended for the installation of Mannington Commercial LVF over porous and non-porous subfloors. Moisture limits are 10 lbs. maximum MVER or 95% relative humidity with a pH maximum limit of 11. Spread rate approximately 150-185 sq. ft. per can.
   XpressStep Premium Spray Adhesive: Moisture limits are 10 lbs. MVER or 98% relative humidity with a pH maximum limit of 12. Spread rate approximately 150-185 sq. ft. per can.
   XpressStep Spray Adhesives may be used under hospital beds and heavy rolling loads.

Mannington Commercial will not assume responsibility for floor covering failure due to hydrostatic pressure or moisture vapor emission. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer. The adhesives are designed to be moisture resistant to accommodate the water of hydration contained in new slabs or initial mixing; they are not to be considered remedial solutions to concrete subfloors with a history of moisture problems.

Important: Temperature directly affects adhesive working and setting times. Warmer temperatures shorten working times and colder temperatures lengthen working times of adhesive. Follow instructions on container for proper application.

Installation

Adhesive application: Follow the instructions on the adhesive labels.

1. Use a trowel with appropriate notch size. Do not use worn trowels (approximately 600 sq. ft. usage on concrete).
2. Spread adhesive evenly with proper trowel held at 60 degree angle, avoiding skips or voids and excessive adhesive application.
3. Only spread sufficient adhesive that can be covered within the adhesive working time.
4. Tiles/planks must be placed into adhesive as specified (follow label directions).
5. Install rows to chalk line making sure tiles/planks are precisely aligned with chalk line and adjacent tiles.
6. Randomly check tiles/planks for complete coverage of adhesive onto back of tile, especially near the end of each adhesive spread. If there is little or no adhesive transfer, or if the adhesive has flashed off or skinned over, adequate bonding may not be possible. Scrape the flashed-off adhesive from the floor, and spread fresh adhesive.
7. If tiles/planks shift, use releasable masking tape diagonally over seams to keep tiles tight and aligned.
8. Wet-set application: Do not work on top of freshly installed flooring. This will minimize tile/plank shifting and adhesive displacement, and prevent wet adhesive from oozing up and getting onto the surface of the new flooring.
9. The floor must be rolled in both directions using a 100-lb. 3-section roller. Roll floor as soon as conditions permit, without the tiles/planks sliding or adhesive bleeding to the surface. Roll floor again, 90 degrees to the first direction, within 1 hour. Adhesives should provide 100% uniform adhesive transfer (no visible trowel ridges) onto the back of the tile/plank, and not cause adhesive to squeeze out between tiles/planks. Pressure Sensitive Adhesive will not transfer 100% to the backing of the tile/plank. Be sure not to exceed the 3 hour working time.
10. Clean excess adhesive as you install, before it is allowed to dry. Use a soapy, clean, soft cloth to remove wet excess adhesive.
11. Clean up all debris as you work.
12. Wait 24 hours for normal foot traffic and 48 hours for point and rolling loads after installation.
13. During first five days, minimize heavy wet cleaning to allow adhesive to fully set.

Special Considerations

1. Radiant heat: Mannington Commercial LVF can be installed over radiant heating (hydronic) systems. The maximum temperature of the subfloor surface must not exceed 85°F. Before installing flooring products over newly constructed radiant heating systems, operate the system at maximum capacity to force any residual moisture from the cementitious topping of the radiant heating system. The system must be switched off for a minimum of 48 hours before, during and 48 hours after flooring installation.
2. Direct sunlight: Installations in areas where there is heavy direct sunlight exposure for long periods of time should utilize window treatments and/or utilize V-95 Adhesive in these areas.
3. Protecting new installations: New installations must be protected while the adhesive cures. Early foot traffic, point or rolling loads can cause adhesive displacement or breaking of the bond between the adhesive and the tile or substrate.

Maintenance Precautions & Safety Information

Effective maintenance includes promptly removing all spills and then thoroughly cleaning with a diluted neutral cleaner or cleaner/maintainer solution. Failure to establish an effective routine maintenance program will not only detract from the appearance of the floor but may shorten its useful life. For complete details refer to Mannington Commercial's maintenance guidelines.

Safety first: Before commencing work, put out signs or safety cones to warn that cleaning is in progress. A slippery floor can cause accidents. Slipperiness can be caused by poor maintenance, surface contamination, spills or when the floor is wet. All hard floors can be slippery when wet. Ensure the floor is clean and dry before resuming use. Use warning signs in commercial areas when performing maintenance or cleaning spills.

Infinity Modular, Infinity 2 & Infinity Cushion Carpet Tile Installation Guidelines

GENERAL INFORMATION

Mannington adheres to basics of the Carpet and Rug Institute's (CRI) Installation Standard, which offers general minimum requirements. In addition to the minimums from CRI, this guide provides specific detail required for Mannington products. Mannington requires site and subfloor conditions like those for any carpet tile. Site should be fully enclosed with an HVAC system functioning to maintain temperature within a range similar to levels maintained when occupied as explained here.

All recommendations are based on the most recent available information. The information on this sheet provides general subfloor guidelines. For complete details consult Mannington's General Installation Guide or visit our website at www.manningtoncommercial.com. All instructions and recommendations must be followed for a satisfactory installation. Good preparation is essential for a trouble-free installation. Do not install Mannington flooring until job-site testing and subfloor preparations are finished, and the work of all other trades is complete. Site conditions must comply with relevant building codes and local, state, and national regulations.

ESSENTIAL FIRST STEPS

- **Check style and color.** Mannington requires the carpet be inspected prior to installation for proper style, color, and potential defects.
- **No visible defects.** No claims will be honored if modules are installed with visible defects.
- **Read instructions.** Read all instructions prior to beginning installation.
- **Confirm layout.** Each style of Mannington carpet tile will have a recommended layout or method for installation that will be specific to that style. Whether the layout is Monolithic, Horizontal Brick Ashlar, Vertical Ashlar, or Quarter-turn, the recommended layout will be listed in the brochure of the architect folder or website. Mannington evaluates each style in a range of layouts to help maximize seam appearance. Customer should evaluate a small mock-up of the recommended layout and tile direction prior to proceeding with full installation. Use of any other layout can compromise seam aesthetics. Mannington will not accept claims for carpet installed using a different layout than recommended. Diagrams are provided on page 5.
- **Site conditions.** Maintain temperature at 60-85°F with ambient humidity between 40-60% for 48-72 hours before, during installation, and at least 48-72 hours after installation. Maintain temperature between 55-90°F for product life.
- **Material conditioning.** Carpet tiles must be allowed to adjust to job-site temperature for a minimum of 48 hours prior to installation.
- **Subfloor testing.** Concrete subfloors must be tested to determine whether chemical pH and moisture emission levels are suitable. Chemical pH should be 10 or less. Relative Humidity, ASTM-F-2170 (preferred test method), should be 90% or less. Calcium Chloride testing, ASTM-F-1869, should be eight (8) pounds or less.
- **Vapor retarder.** Concrete subfloors must have a suitable vapor retarder properly installed directly beneath the slab per ASTM-E-1745.
- **Adhesive.** Mannington's Infinity pressure-sensitive adhesive must be applied in a full-spread application using the correct notched trowel as detailed later in this guide.

Important note: Mannington adhesives are specifically formulated to be fully compatible with backings chemistry and to maximize the performance of Mannington products. Using substitutes or failing to use Mannington adhesives as recommended can cut-short product life, cause installation failure, and/or lead to a chemical reaction, such as hydrolysis, which will permanently damage the tile backing and will void all applicable warranty coverage.

SUBFLOOR PREPARATIONS

Careful subfloor preparation is vital for an excellent floor appearance and good adhesion. The subfloor must be smooth, firm, flat, clean, dry, free from defects, and fit for purpose. A suitable smoothing compound should be used to ensure that no irregularities show through to the surface of the finished floor. In all cases, the subfloor must meet the moisture and pH requirements before installation.

For porous subfloors (concrete or wood) that have a high pH and/or need a primer, use **Mannington's Universal Primer.**

Mannington's Universal Primer is an acrylic latex solution made to neutralize excess alkali and is also recommend as a primer to prevent over absorption of adhesive to ensure a better bond. Gypsum topped or patched areas must receive a full application of Mannington's Universal Floor Primer as well as any subfloor that is porous, gritty, chalky, or dusty. Porous subfloors with chemical pH above 9 may require a second application.

Mannington's Universal Primer can be applied by pouring directly on the subfloor and spreading evenly with a broom or paint roller. Primer can also be applied with a garden sprayer, airless rig, or similar spray equipment. Allow the primer to dry completely prior to second application or before applying adhesive. Primer is dry if there is no transfer when touched. Coverage is approximately 350-400 sq. ft. per gallon. **Note: Do not use primer with epoxy or urethane adhesives.**

CONCRETE

Before proceeding with installation on any concrete subfloor, please make sure:

- Levelness and finish meets or exceeds American Concrete Institute standards, ACI 301.
- Moisture and alkalinity levels meet requirements as detailed earlier.
- Curing compounds are mechanically removed. Many concrete curing agents can prevent adhesives or sealers from forming a proper bond, especially those with silicate compounds.
- Chemical agents are avoided for removal of curing compounds or old adhesives.
- Portland cement-based compounds are always used and mixed according to manufacturer's instructions when patching cracks and holes, and when leveling is required.
- Gypsum-based patching compounds are always avoided.

OTHER SUBFLOOR TYPES

Any subfloor surface must be smooth, level, clean, and secure prior to installing Mannington floor covering products.

- **Wood.** Wood floors must be smooth and level. If floor is uneven, an approved underlayment may be required. Plywood sheets must be solid and secure. Plywood seams may need to be sanded smooth. Dust must be thoroughly vacuumed. Fire-retardant plywood is not recommended.
- **Plank floors.** Plank floors should be covered with plywood as detailed above as stable, flat, and suitable for installation.
- **Terrazzo / Marble.** Level all grout lines with a latex based Portland cement patching compound. Glossy surfaces must be sanded for adhesive bond.
- **VCT.** Tiles must be well secured to the floor or removed. Broken, damaged, or loose tiles must be replaced. Wax must be removed from VCT before applying adhesive.

- **Sheet vinyl.** Must be well secured, consist of a single layer, free of contaminants, not foam backed, not perimeter fastened or loose laid, and no asphalt-based adhesive.
- **Existing carpet.** Unsuitable substrate for new installation. Should be removed prior to installation. Any existing adhesive should be addressed as described here.

EXISTING ADHESIVES

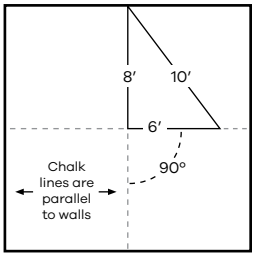
As a rule, for any new installation, existing adhesives from previous installations should always be scraped flat and thoroughly encapsulated with a Latex Portland Based Patch or Mannington Assure. Otherwise, an adverse reaction could occur, voiding applicable warranty coverage and leading to installation or product failure.

- **Multi-purpose/pressure sensitive.** Use one of the following methods to prevent possible reaction between the existing adhesive and the new installation:
  - Scrape adhesive flat and encapsulate with Mannington Assure.
  - Thoroughly remove existing adhesive, sand away remaining residue, and then skim coat with a Portland cement-based patching compound.
- **Cutback.** Existing cutback adhesive must be thoroughly removed and fully encapsulated to prevent possibility of irreversible product damage, installation failure, and voiding Mannington's warranty coverage. Wet with a mixture of water and a small amount of liquid soap. Allow to soak for several minutes before scraping away adhesive. Encapsulate any remaining trace of adhesive residue with Mannington Assure.

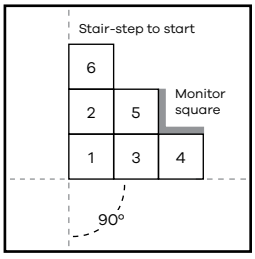
INSTALLATION

A proper start is essential to keeping a carpet tile installation tight and square throughout the installation. Please pay careful attention to these basics:

- **Establish center point.** Measure area to receive carpet and determine a center starting position by measuring from dominant walls or similar architectural features.
- **Adjust for cuts.** Initial placement of the center point may need to shift slightly to make sure perimeter tile cuts are at least half the tile's width (Example: 12" on a 24" x 24" tile).
- **Set perpendicular lines.** Establish two chalk lines that cross at adjusted central point and intersect at right angles. The base line should be the longest measurement in a rectangular area and parallel to a wall or architectural break point. Having four equal quadrants with perpendicular lines at the right angles will provide an essential guide to anchor the first tiles, to help keep the installation square, and to fit tile backings tightly together.



- **Establish a grid.** Keeping the installation tight and square requires creating a grid by establishing two perpendicular chalk lines, calculated at right angles on the area's center point, and then by anchoring first tiles installed snug against the two chalk lines. The two lines intersect to form a right angle and are "square" when two points, one at 8′ vertically and one at 6′ horizontally from center point, are exactly 10′ apart. Use the 3′, 4′, and 5′ formula as described above to set perpendicular chalk lines in smaller areas.
- **Stair-step tiles within grid.** Start by placing first tile backing snug into corner where chalk lines cross. Tile backing should align with chalk lines on two sides. Form steps by sliding each subsequent tile, backing first, into tight alignment with the previous tile. Avoid overly compressing backings or trapping yarn in seams. Second tile goes on top with one side on the vertical chalk line. The third tile goes against the right side of the first tile. Continue in the same manner, etc. Use a carpenter's square to spot check frequently. Please keep in mind that seams on any new carpet tile installation will be more obvious until the yarn has acclimated, relaxed, and blossomed with routine



traffic and vacuuming. To facilitate seam blending it is recommended to tractor seams with a box tractor. Keep tiles square and tight to avoid gaps.

- **Check tightness.** Tightness or gain should be measured periodically to assure tile backings are snug and the installation is square. Determine the amount of gain or growth in the installation by measuring the total distance between 10 tiles in both directions. Ten 24" x 24" tiles have a net measurement of 240". The seam between each tile will always create some amount of gain or addition space in the installation. Measuring 10 tiles or 11 joints in either direction will provide enough seams to accurately represent the amount of gain. Whether the tile is 24" x 24", 18" x 36", or 12" x 48", the gain or space between tiles should never be more than 1/8" greater than a net measurement of 10 tiles or 11 joints. For instance, 10 tiles at 24" each should not exceed 240" in either direction. If the net measurement exceeds a gain of 1/8", the affected area(s) will need to be picked-up and re-installed tighter to stay on grid.

PLAN AHEAD

To help assure a successful project and prevent unexpected surprises, the following are also important steps to consider prior to installing any Mannington carpet tile:

- **Sequencing.** The most uniform installation will be obtained by planning and sequencing carpet tiles in the order they were manufactured. Sequencing can be easily accomplished. Select pallets by numbers located on each carton of tiles starting with the lowest numbers first and progressing lowest to highest numbers. Each pallet should have tile cartons with a similar range of numbers.
- **Packaging.** Mannington's 24" x 24" and 12" x 48" Infinity carpet tiles are packaged 14-tiles, 6.22 sq. yds. per unit. The 18" x 36" tiles are packaged 12-tiles, 6 sq. yds. per unit.
- **Accessibility.** Carpet tile provides easy accessibility the subfloor and flat-wire or cable trenches. Flat-wire should be centered underneath modules.
- **Raised nosing for stairs.** On stairs, always use a raised nosing. Trim tile to fit nosing on both the step and riser.

ADHESIVES

To avoid long-term performance issues and for Mannington warranties to remain in full effect, Infinity Modular, Infinity 2 and Infinity Cushion Carpet Tile must be installed in a full-spread application using adhesive as follows:

Infinity Adhesive:

Use only Infinity pressure sensitive adhesive when concrete subfloor is properly tested to show moisture emission rate and chemical pH are:

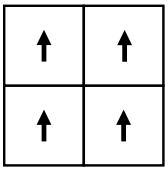
- ≤ 90% RH
- ≤ 10 pH
- ≤ 8 lbs. MVER

Full spread Infinity pressure sensitive adhesive using a 1/16" x 1/32" x 1/32" U-notch trowel as shown. Notches are 1/16" wide, 1/32" deep, 1/32" apart for a spread rate of 25 yds. per gallon. Allow adhesive to fully dry before installing carpet tile.

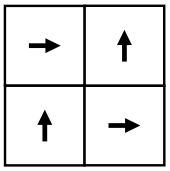
TILE LAYOUT

Mannington carpet tile may have a specific recommended installation method. Refer to brochure inside architect folder or website for installation recommendations. Please note that all patterns and colors may not be aesthetically acceptable with certain installation methods. Mannington evaluates each product and recommends the installation method for the best aesthetics. A mock up area is recommended for review before selection of an alternate method. Mannington cannot be responsible for seam aesthetics if the installation deviates from the recommend layout for a style.

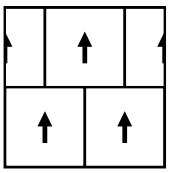
24" x 24" Installation Diagrams (Installation Methods are Style Dependent)



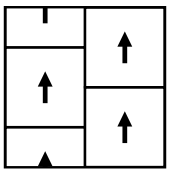
MONOLITHIC



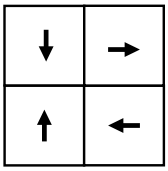
QUARTER-TURN



HORIZONTAL BRICK ASHLAR

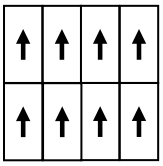


VERTICAL ASHLAR

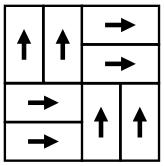


SHUFFLED/ RANDOM

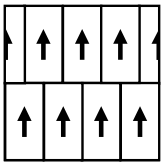
18" x 36" Installation Diagrams (Installation Methods are Style Dependent)



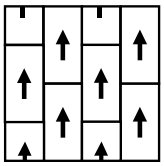
MONOLITHIC



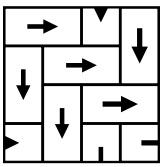
QUARTER-TURN



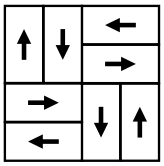
HORIZONTAL BRICK ASHLAR



VERTICAL ASHLAR

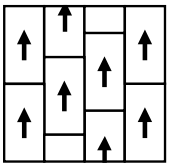


HERRINGBONE

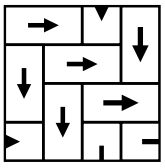


SHUFFLED/ RANDOM

12" x 48" Installation Diagrams (Installation Methods are Style Dependent)



3-STEP VERTICAL ASHLAR



HERRINGBONE

TRANSITIONS

All carpet products must be properly protected when transitioning to other floor covering or exposed stopping points. The use of a transition molding or protective strip covering the carpet edge at 1/2" is required. If a transition cannot be utilized the carpet nap must be level or slightly below the adjacent floor. The carpet edge must be fully seam sealed to protect from raveling or damage.

PRODUCT INSTALLATION

Ideally, carpet should always be installed last in any construction or renovation project. The completed installation should be protected as finish trades complete the project, during customer move-in, or when heavy rolling carts are used.

- **Craft paper.** Bonded-craft paper will protect the completed installation from construction dirt and spills while allowing floor covering primers, sealers, or adhesives to cure properly.
- **Avoid plastic sheeting.** Never use plastic sheeting to protect any installation.
- **Avoid sticky coverings.** Protective coverings with pre-applied adhesive or tackifiers can leave a sticky residue on the carpet face, cause rapid soiling, and should not be used.
- **Heavy rolling carts.** Masonite or plywood should be used in traffic lanes to prevent tile from shifting any time furniture is moved.

AFTER INSTALLATION

As the customer begins to enjoy their new installation of Mannington carpet tile, please also note the following:

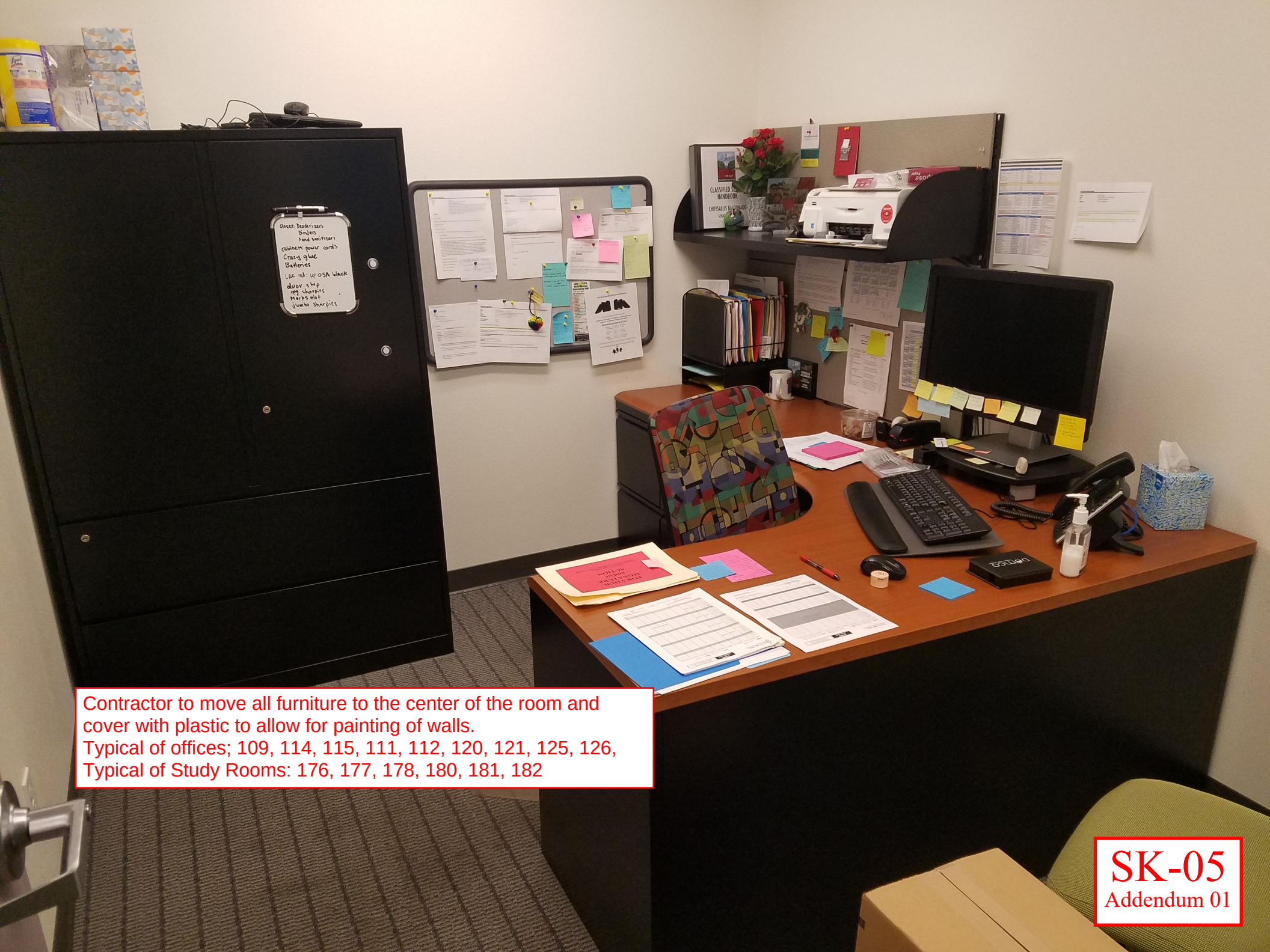
- Roll entire job with a 75-100 lb. roller.
- Chair pads are recommended for use under chairs with rolling casters and required for full warranty coverage on Infinity RE and Infinity Cushion. Chair pads can prevent premature wear even when carpet casters are used. Use only carpet friendly casters. Casters should be the flat round type with 5/8" to 1" width minimum.
- When loop pile carpet is cut into tile, some loops on tile edges will be cut in half. Vacuuming and routine use will expose those cut yarns that remained compressed and hidden during manufacturing or installation. This blossoming is easily remedied by clipping stray fiber exposed along tile edges.
- Some carpet styles require more attention from the installers during installation. Due to the light row, dark row construction of these products, dark lines may appear at the edges. **This is not a manufacturing defect.** These products will require shifting tiles around to avoid dark lines at the edges.
- On occasion, it may be necessary to replace damaged or heavily soiled modules. Modules can be replaced with new Mannington tiles from on-site inventory or from another area of the installation. A difference of appearance may be noticed when modules are replaced; this difference usually diminishes in a short time.
- Carpet module seams are usually noticeable on a new installation and do not typically have a seamless appearance like broadloom carpet. They are die cut from the face, which can create small gaps at the seams. Pile crush can occur from the bottom to the top of the pallets and may appear to have a color shade variance from tile to tile. Both conditions will improve considerably after a "walk-in" period. This allows the yarn to acclimate and respond to the crush from the stacked cartons on the pallets. Normal foot traffic and regular vacuuming will also improve seam appearance.
- To facilitate seam blending the use of a seam tractor can help blend the yarn. Pile lifting, and/or wet extraction can decrease the time needed for "walk-in" acclimation.

If there are any questions or doubts about performing a successful installation of Mannington's carpet tile or Mannington's adhesives, please stop immediately and call Technical Services at 800-241-2262, Ext. 3.


Contractor to remove and dispose of seventy-five (75) total study cubicles.


Contractor to remove and dispose of four (4) total 16'x4' tables.
SK-03
Addendum 01


Contractor to remove and dispose of 375' linear feet of periodicals.
SK-04
Addendum 01

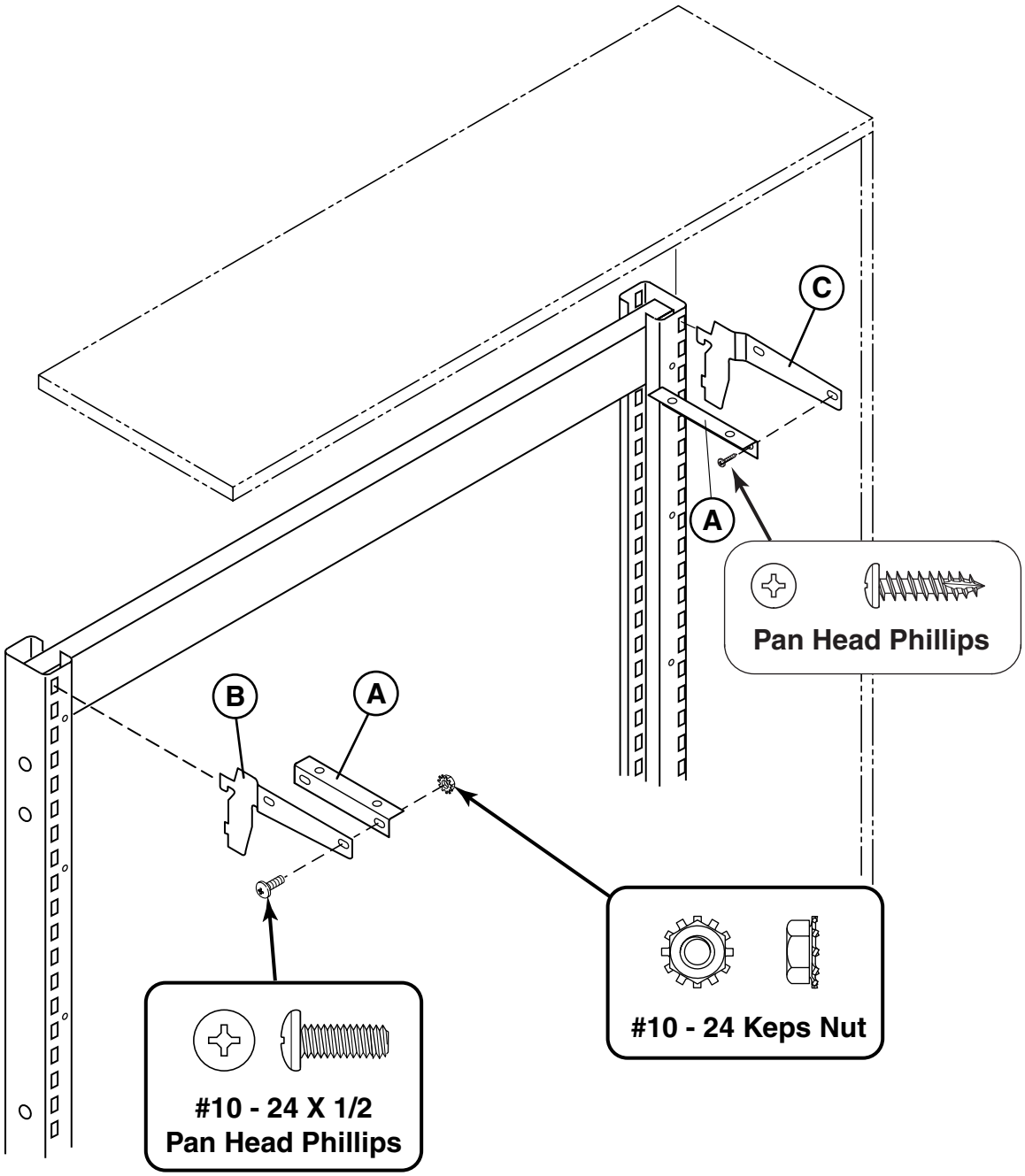

Contractor to move all furniture to the center of the room and cover with plastic to allow for painting of walls.
Typical of offices; 109, 114, 115, 111, 112, 120, 121, 125, 126,
Typical of Study Rooms: 176, 177, 178, 180, 181, 182
SK-05
Addendum 01


AUDIO VISUAL
QUIET STUDY ROOM
MICROFORMS
Contractor to remove and dispose of the "AUDIO VISUAL" and "MICROFORMS" signage.
Patch and paint.
SK-06
Addendum 01

Brackets for Laminated Canopy Top

Catalog No. CCTBL-6L or -6R
(for single face tops with overall depth up to 8"; double face up to 17")
Catalog No. CCTBL-15L or -15R
(for single face tops with overall depth of 9" to 17"; double face 17" to 32")
(shown as used in combination with laminated face panels.)

(L = left side, R = right side)



SK-07
Addendum 01

NOTE: Order LEFT and RIGHT brackets separately.

1. Mount one support bracket **(A)** to each hanger bracket **(B and C)** as shown using two pan head machine screws and keps nuts per bracket.

NOTE: Brackets are stamped “L” (LEFT side) and “R” (RIGHT side).

2. Install hangers **(B and C)** on appropriate side of frame upright using top slot in each side channel.
3. Position canopy top onto brackets and align. Install appropriate hardware through holes in support brackets **(A)** to secure canopy top.

NOTE: Hardware is not provided for laminated canopy top mounting or face panel applications as requirements vary. Use a wood screw which will thread only part way through the laminate panels.

SK-07
Addendum 01