

## Integra HP® Installation Guidelines

### GENERAL INFORMATION

Integra HP is Mannington Commercial's high performance integrated backing system for broadloom carpet. Mannington Commercial adheres to the Carpet and Rug Institute's (CRI) Installation Standard which details minimum requirements for site conditions, floor preparation and installation. Mannington Commercial's Installation Guide provides additional details specifically for carpet styles with Integra HP backings. These details are necessary to help assure a successful installation with full warranty coverage.

All recommendations are based on the most recent available information. The information on this sheet provides general subfloor guidelines. For complete details consult Mannington Commercial's General Installation Guide or visit our website at [manningtoncommercial.com](http://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 Commercial 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.

### MANNINGTON COMMERCIAL OFFERS TWO OPTIONS FOR IN-SLAB MOISTURE CONCERNS

- **Option 1:** Requires full range of ASTM moisture and pH testing, but does not require the use of Mannington's Universal Primer.
- **Option 2:** Requires the use of Mannington's Universal Primer, but eliminates the need for concrete moisture testing when subfloor chemical pH is 9 or lower.

Before starting the installation you must first determine which option is best for your specific project. Select Option 1 or 2 and then proceed to Site Conditions.

### SUBFLOOR TESTING FOR OPTION 1

Concrete subfloors must be tested in accordance with ASTM protocol to determine whether chemical pH and moisture emission levels are suitable. Test methods, locations and results must be fully documented for future reference. Independent certification is recommended. Results should be as follows for full warranty coverage:

- pH test, ASTM F710, should be 9 or less.
- Relative Humidity, ASTM F2170 is the preferred method, should be 85% or less.
- Calcium Chloride, ASTM F1869, should be 8 lbs or less.

### SUBFLOOR TESTING FOR OPTION 2

Integra HP backing installations using Mannington's Universal Primer, Integra 2 wet set adhesive and MT-800 seam sealer will no longer require moisture vapor emission rate (MVER) or Relative Humidity (RH) testing, but only when meeting the following conditions:

- No free liquids present.
- No evidence of moisture staining.
- pH is 9 or less. pH tests are required for all installations of Integra HP backing.

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**Important note: Testing must show the concrete surface has a chemical pH of 9.0 or lower at the time of installation and must maintain a pH of 9.0 or lower throughout the life of the carpet.** Experience has shown that test accuracy is improved for moisture vapor emission, Relative Humidity and chemical pH when temperature and humidity levels are maintained within ranges expected during occupancy for two full weeks prior to testing. Even so, these tests indicate moisture and pH levels only at time of testing. Moisture and pH levels can increase over time. Mannington Commercial is not responsible for product or installation failures caused by such changes in subfloor conditions occurring after installation.

**SITE CONDITIONS**

Regardless of option chosen for moisture warranty, these conditions and standards must also be met:

- **Vapor retardant membrane.** Integra HP should not be used on concrete slabs that do not have a vapor retardant membrane properly placed below the concrete slab.
- **Control the environment.** The building should be fully enclosed with an HVAC system functioning to maintain temperature within a range similar to when space is occupied.
- **Temperature and humidity.** Maintain temperature between 60-85°F with ambient humidity between 40-60% for 48-72 hours before, during and after installation.
- **Levelness of finish.** Must meet or exceed American Concrete Institute standards, ACI 301.
- **Leveling compounds.** Use only leveling compounds containing Portland based cement. Latex is included in some levelers and should be mixed with water according to manufacturer's instructions. Avoid all Gypsum based patching compounds.
- **Curing agents.** Mechanically remove any concrete curing agent determined incompatible with adhesives or sealers required for installing Integra HP backed carpets. Many concrete curing compounds can inhibit or prevent an adhesive from developing an adequate bond with the subfloor. If concrete curing agents have been used, determine whether that specific curing agent is compatible with sealers and adhesives necessary for the installation. Determining compatibility may require involving manufacturers of each product.
- **Chemical removers.** Avoid using chemical agents to remove curing compounds or old adhesives. That includes citrus based removers. These solvents can absorb into the subfloor and prevent an adequate bond with sealer or adhesives.

**TESTING FOR SUBFLOOR PH**

All concrete subfloors must be tested for pH and found to have a pH range of 9 or less before starting the installation. The test must be performed on a bare concrete surface according to standards set in ASTM F710, with careful attention to the following:

- **Clean the test site.** Mechanically clean away adhesives, primers, curing compounds and contaminants to expose the thin carbonation layer on the concrete surface.
- **Don't over-clean.** Over-cleaning or scraping can remove or damage the thin carbonation layer and cause higher pH readings.
- **Wet prepared site.** Slightly wet the prepared site with a small amount of distilled water and allow the water to stand for one minute.
- **Apply test strips or meter.** Apply pH test strips or a pH meter to the wet concrete surface and leave intact for one full minute so the test paper can absorb some of the distilled water.
- **Determine pH from test strip.** The pH test strip will change colors depending upon the pH of the concrete.

**LOWERING PH LEVELS**

Mannington's Universal Primer is required for all Option 2 installations of Integra HP backing but can be applied to lower chemical pH levels to 9 or below as required. Primer should be applied and pH retested as follows:

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- **Application.** 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, an airless rig or similar spray equipment.
- **Testing.** pH can be retested after subfloor has fully dried (no transfer when touched). If pH is still testing above 9, a second application will be necessary.
- **Patched areas.** All patched areas must receive a full application of Universal Primer.
- **Coverage.** Coverage is approximately 350-400 ft<sup>2</sup> per gallon.

**Important note: Primer required. Mannington's Universal Primer is required for all Option 2 installations of Integra HP backing on concrete when pH levels are  $\leq 9$  and no moisture tests are performed. Regardless of installation Option all patched areas must receive a full application of Mannington's Universal Primer as well as any subfloor that is porous, gritty, chalky or dusty.** Excessively porous subfloors or those with chemical pH above 9 may require a second application. Allow the primer to dry completely prior to second application or before applying adhesive. Primer is dry if there is no transfer when touched.

### OTHER SUBFLOOR TYPES

Any subfloor surface must be smooth, level, clean, and secure prior to installing carpets with Integra HP backing. To achieve maximum product performance, it is always best to remove existing floor covering and prepare the substrate before installing new 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. Bare wood or plywood subfloors should be sealed with a latex primer.
- **Wooden planks.** Wooden plank flooring should be covered with plywood as detailed above as stable, flat, and suitable for installation.
- **Terrazzo / Marble.** Level all grout lines. Glossy finishes may need to be sanded to provide a suitable surface.
- **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.** Sheet is not a suitable substrate for Integra HP installation and should be removed.
- **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 Commercial'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.

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### ESSENTIAL FIRST STEPS

Integra HP backing provides exceptional performance, but like all high performance backings Integra HP requires special attention to specifics included here. These preliminary steps are essential for a successful installation:

- **Check style and color.** Mannington Commercial requires the carpet be inspected prior to installation for proper style, color, and potential defects.
- **No visible defects.** No claims will be honored if carpet is installed with visible defects.
- **Read instructions.** Read all instructions prior to beginning installation.
- **Material conditioning.** All Integra HP carpet must be allowed to acclimate prior to installation. All carpet should be rolled out and allowed to acclimate for a full 24 hours.
- **Dye lots.** Mannington Commercial does not recommend mixing dye lots, especially in open areas that would be highly visible. Mix dye lots only if necessary in natural break areas where dye lot change would be less noticeable. Always get prior approval before mixing any dye lots.
- **Random, non patterned styles.** For random or non patterned styles, rolls should be sequenced according to roll numbers.
- **Patterned styles.** Stage each roll by pattern length instead of roll number, as outlined below. Implement roll sequence when possible after pattern length.
- **Adhesive.** Mannington's Integra 2 adhesive must be applied in a full-spread application using the correctly notched trowel as detailed later in this guide.

### PATTERNED STYLES WITH INTEGRA HP BACKING

Patterned styles must be staged by pattern length rather than roll number sequencing. Pattern lengths often vary within a run, especially in longer drops. Measure pattern lengths on each roll and sequence rolls as detailed here.

- **Measuring and sequencing.** Rolls with the longest patterns must be installed first, followed by rolls with gradually decreasing pattern length. Rolls with shorter patterns must be power stretched into alignment with longer patterns. Even when pattern sequence is provided, always double check on site and sequence rolls as follows:
  1. **Count full patterns.** Count only full patterns within an approximate 10' length on each roll (5' lengths can be used for very small patterns). Multiple patterns must be measured in a group to get the most accurate sequence possible. The multiples used here can make this important process more simple, consistent and accurate.
  2. **Measure lengths.** Carefully measure the length on a group of patterns, starting at the upper tip of the first pattern and measuring to the lower tip of the last pattern. Pattern grouping will likely be slightly longer or shorter than exactly 120" (10'). Fractions of an inch matter.
  3. **Measure two or more locations.** Check and record pattern lengths in at least two locations on each roll.
  4. **Create sequence list.** Note roll number, pattern count, and length measurement.
  5. **Longest patterns first.** Stage each roll so the roll/rolls with longest patterns are installed first. Install each roll so pattern groups get progressively shorter.
- **Aligning.** Power-stretch shorter patterns into alignment with longer patterns. Maintain stretch, stay nail to hold patterns in alignment and leave nails in place until adhesive has firmly set.

### MAKING CUTS

Integra HP broadloom requires a specific tool and technique for creating seams that are consistently tight and secure. Follow these specific instructions when cutting seams:

- **Seam cutter.** Only use the 575 Commercial Seam Cutter by National Carpet Equipment (800-245-0267) to prevent fullness. Fullness will cause seam to peak before the wet set adhesive can develop grab.
- **Side seams.** The 575 cutter is designed to row cut top width while simultaneously trace cutting a second width positioned underneath. This double cutting method combines row cutting and trace cutting for a net cut without fullness.
- **Dry cut all seams.** Avoid making double or trace cuts after adhesive has been spread.



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Making cuts in wet adhesive (wet cutting) removes adhesive underneath seam; wet glue transfers to the portion of carpet backing being trimmed away. This installation technique will cause seam failure and should never be used. Spread adhesive along the seam area only after cut is made and while subfloor is still adhesive free or dry.

- **Side seam cuts.** Making side cuts requires significantly different techniques depending on whether the carpet style involves a random or distinct pattern.
  - Random or non-patterned styles should be double cut along a straight line.
  - Patterned styles should be row cut on each width separately.

### ADHESIVE

Integra 2 is a wet-set adhesive required and specifically tailored for Integra HP backing. The wet-set properties of Integra 2 differ from other types of adhesives that need some drying or open time before installing flooring material. Integra 2 permits immediate installation of Integra HP and provides essential wet adhesive transfer from subfloor to Integra HP backing. Integra HP requires this transfer of wet adhesive before a secure bond can develop. Integra 2 adhesive is for use with Integra HP only and no other flooring. Note these important precautions prior to installation:

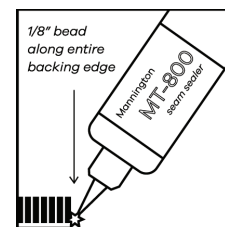
- **Wet only.** Once spread onto the subfloor Integra 2 should never be allowed to skim over or begin drying from the surface before installing carpet with Integra HP backing.
- **Cure times.** Integra HP backing is designed to prevent moisture penetration. That means wet adhesive may need several days for moisture to escape sufficiently for the adhesive to develop a full bond that comes only with drying and curing. Subfloor porosity, temperature and humidity levels can have a major impact on adhesive set up or cure times.
- **Delayed grab.** The wet set properties of Integra 2 will delay grab or tack until the adhesive can begin to cure. When patterned carpet styles are stretched into alignment, use stay nails to hold carpet in place until adhesive is fully set. Please note that Integra 2 wet set adhesive may require three or more days to develop a solid bond.
- **Spread rate.** Once seam edges are trimmed, carefully fold back seams on half of carpet width to expose subfloor. Apply Integra 2 adhesive with a 1/16" x 1/16" x 1/16" square-notch trowel. The square notches are 1/16" wide, 1/16" deep, and 1/16" apart.
- **Coverage.** Spread rate should cover about 15 yd<sup>2</sup> per gallon on smooth subfloor surfaces. Coverage will be less over rough or more porous subfloors, and more adhesive will be required.
- **Roller.** Each carpet width installed must be thoroughly rolled with a 35-75 lb 3-section roller immediately after being placed into adhesive to remove air pockets and ensure adhesive transfer. Push roller away from seam to avoid breaking sealer bond.

**Important note: Mannington Commercial adhesives are specifically formulated to be fully compatible with backings 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, cause installation failure, and/or lead to a chemical reaction, such as hydrolysis, which will permanently damage the backing and will void all applicable warranty coverage. For Mannington Commercial's lifetime limited bond warranty, the appropriate adhesive must be used. Mannington Commercial will not be responsible for adhesive bond where other adhesives have been used.**

### SEAM SEALER

All seams must be chemically welded with Mannington MT-800 seam sealer to assure performance and maintain full warranty coverage. MT-800 should be used as follows:

- **Correct flow.** Fill applicator bottle with MT-800. Adjust flow control nozzle to deliver consistent 1/8" bead (backing thickness).
- **Placement.** Apply a consistent 1/8" bead of MT-800 along Integra HP backing edge first, once carpet width is placed into adhesive. Take care to avoid getting seam sealer onto carpet face fiber.



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- **Making seams.** Place second carpet width into adhesive so two carpet widths come together with slight compression to form a tight seam.
- **Sealer precaution.** The entire seaming process must be completed within 10 minutes to avoid having MT-800 seam sealer harden too soon.
- **Remove excess.** Quickly clean away any excess MT-800 pushed up into the face fiber. MT-900 seam cleaner should be used to remove excess MT-800 while the sealer remains wet.
- **Technique.** Dampen a clean white absorbent cotton cloth with MT-900 and gently rub the seam where sealer has surfaced. Do not pour seam cleaner directly on the carpet. Use this final step as a final check to make sure seam is tight and properly sealed.
- **Coverage.** Expect a 1/8" bead to yield approximately 500 lin ft of seams per pint.

### STAIRWAYS

Integra HP backing will resist conforming to a tight bend necessary for some applications but can be successfully installed on many stairways with the following techniques:

- **Separate cuts.** Carpet with Integra HP backing can be cut to fit each step and riser. Apply adhesive to carpet backing and step/riser.
- **Stair nosing.** Use an appropriate stair nosing to cap carpet edges.

### 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.

### PROTECT 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 any time furniture is moved.

### HELPFUL TIPS

The following tips are offered to help assure a successful installation:

- **Extra manpower.** Additional manpower may be necessary to prevent shifting when long drops are folded back and forth for spreading adhesive or making seams.
- **Along walls.** Fat or excessively full cuts should be avoided to prevent bubbles on Integra HP backing. Trim along walls using a wall trimmer to yield a net cut or slightly less than net.
- **Cross seams.** Minimize seam peaking by reverse rolling or back rolling cross seam edges before placing carpet into adhesive.
- **After install.** Avoid rolling traffic including furniture move-in for full 72 hours. Use plywood runners to protect carpet when moving heavy furniture. Limit foot traffic for 24 hours.
- **Chair pads.** Chair pads are recommended but are not required. Chair pads can prevent premature wear and distortion of carpet's face fiber underneath rolling office chairs, even when carpet casters are used. Use only carpet friendly casters. Casters should be the flat round type with a 5/8" to 1" width minimum.

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**WARRANTY NOTE**

**Installation of Mannington Commercial Integra HP products that exceeds the specifications and limitations provided will void the warranty. All Option 2 projects must be registered under Mannington Commercial's Integra HP job registration form.**

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