



Amtico International
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Amtico Installation Guidelines

General

COMMUNICATION: Contact Amtico International Technical Services for guidance about subfloor testing and Amtico installation recommendations. Technical Services can be reached Monday to Friday, 8:30 a.m. to 4:30 p.m. EST at (877) 238-7869.

The installation of Amtico is straightforward and similar to the installation procedures that apply to all quality resilient tile floors. Good preparation is essential for a trouble-free installation. Do not install Amtico until jobsite 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. Documentation of Moisture and pH test results is required when processing claims.

- Amtico is recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates.
- Amtico can be used with radiant heating systems (maximum subfloor surface temperature of 81° F).
- Amtico is not suitable for external installation or unheated locations.
- Amtico tiles, adhesive, jobsite and subfloor must be acclimated to a stable condition before installation.
- Following installation, Amtico should be protected from traffic for 24 hours, point loads and rolling traffic for 48 hours and should not be washed for 5 days.
- The flooring should remain at a temperature between 55°-81° F (13°-27° C) during its service life.
- Always follow other manufacturers' written recommendations when using their proprietary materials for subfloor preparation.

A. Material Receiving, Handling & Storage

1. Immediately remove any shrink wrapping and verify materials delivered are correct style, color and quantity.
2. Report discrepancies immediately to Amtico International Customer Service at (800) 268-4260. Labor claims for installation of products installed with visual defects or incorrect style will not be honored.
3. Store all materials off the floor (keep cartons flat) in a weather-tight enclosure between 55°-81° F (13°-27° C).
4. Acclimate tile, adhesive and jobsite to a stable condition between 64°-81° F (18°-27° C) and 50% +/- 10% RH for 48 hours before, during and after installation. Acclimate all materials onsite and off stack tile cartons to a single layer keeping cartons flat. Temporary heating and cooling should be used if permanent HVAC is not operational.
5. Tiles should not be stored close to exterior walls, in direct sunlight or near HVAC vents.

B. Jobsite Testing

1. Before jobsite testing, the building envelope must be sealed (walls, roofing, windows, doorways etc., installed).
2. Anticipated environmental conditions must be maintained or 75°F +/- 10°F (24°C +/- 6°C) and 50% +/- 10% RH a minimum of 48 hours before and during testing (ASTM F 710).
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 1/8" in 10 ft (3 mm in 3 m). To check flatness, place a 10 ft straight edge on the surface and measure the gap or use another suitable method.



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5. Concrete Subfloors:

- a. Concrete subfloors must be finished and cured without additives, curing compounds, hardeners or surface treatments that may prevent proper bonding of the flooring materials (ACI 302.1 and ASTM F710).
 - b. Randomly check concrete subfloor for porosity using the drop water test. Place a 1 inch 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.
 - c. Concrete subfloors must have a minimum compressive strength of 3000 psi.
 - d. Concrete subfloors shall not consist of lightweight concrete or gypsum with less than 100 lbs. /cubic foot density.
 - e. 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). Internal RH readings above 80% or MVER readings above 5 lb/1000 SF/24 hours require a moisture suppressant system.
 - f. Alkalinity: Must test surface alkalinity (ASTM F710). A 7.0 to 10.0 pH is acceptable. Reduce higher pH by mopping on a vinegar/water solution: 1 pint vinegar to 2 gallons water.
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 panels should be within 3% and have a maximum moisture content of 14% or less. Effective moisture control in basements and crawlspaces is essential for achieving a successful long term installation.

C. Moisture Suppressant System

Concrete subfloors that exceed 80% RH or 5 lbs MVER 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.

Amtico International suggests that you reference the current ASTM F710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring" and 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
Uzin Ltd.	(800) 505-4810	www.ufloorsystems.com

D. Subfloor Preparation

Careful subfloor preparation is vital for an excellent floor appearance and good tile 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 beneath the slab. Crawlspaces and basements directly beneath the new floor installation should be maintained with a relative humidity +/- 10% of the room relative humidity where the flooring is installed. This can be accomplished by proper ventilation and air circulation or using a dehumidifier. Always follow other manufacturers' written recommendations for the use and installation of their proprietary surface preparation materials.



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1. Record site conditions, test results and corrective action(s). Amtico International requires written documentation of site conditions, test results and corrective action(s) before processing claims.
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, free of movement, excessive moisture and high alkalinity.
3. Slick surfaces such as power troweled concrete shall be profiled to allow for a mechanical bond between the adhesive and subfloor.
4. Remove existing resilient floor covering, **100%** traces of old adhesives, paint or other contaminants by scraping, sanding, grinding, shot blasting or scarifying the substrate. **The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and may void the 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.

5. Perform corrective actions necessary for elevated moisture or high alkalinity conditions.
6. Surface Flatness for all Subfloors: The surface shall be flat to 1/8" in 10 ft (3 mm in 3 m). 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:
 - a. For concrete subfloors, use only high quality Portland cement based materials (minimum 3000 psi compressive strength according to ASTM C109). 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 bondbreaker causing tiles to release at the interface of the subfloor and patching material.
 - b. 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 manufacturers' instructions.

E. Installation Procedures

Before starting the Amtico installation, ensure the following are satisfactorily completed. Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work.

- Acclimation: Acclimate tiles (keep cartons flat), adhesive, jobsite and subfloor to a stable condition between 64°-81° F (18°-27° C) and 50% +/- 10% RH for a minimum of 48 hours before and after installation.
- Flooring Materials: Check quantity of Amtico tile and adhesive are sufficient for area to be installed. Check tile for visual defects before installation. Installation of flooring acknowledges acceptance of materials.
- 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 be 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.
- 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



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alkali-resistant, and shall provide a minimum of 3000 psi compressive strength after 28 days, when tested in accordance with Test Method C 109 or Test Method C 472, whichever is appropriate.

- 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.
- Inspect Substrate: Perform final acceptance inspection of substrate.
- Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
- Flooring Protection: Amtico should be the last material installed to prevent other trades from disrupting the installation and adhesive set-up or damaging the floor.

Amtico comes in plank, rectangle and square tile formats, stripping, borders, motifs and custom sizes as specified. Install tiles running in the same direction (block or staggered), quarter turned or as specified. Amtico plank flooring should have end joints offset by at least 6" and staggered to create a random appearance that avoids alignment of end joints. Amtico can be laid out to run either parallel or diagonal to the room or primary wall. The following conditions must be given consideration when determining how Amtico will be installed:

1. Layout: **Layout shall be specified by end user, architect or designer.**
 - a. 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.
 - b. Wet-Set Application: 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.
 - c. All Installations: Spread only the amount of adhesive that can be covered within the working time specific to the adhesive being used. Skinned over or dried Universal Two Part and Amtico 373 Adhesive must be scraped off the subfloor and replaced with new adhesive before continuing the installation.

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 flooring implies acceptance of materials.

2. Adhesives: Amtico International recommends 3 adhesives for use with Amtico tiles: Amtico 373 Adhesive, Amtico Universal 2-part Adhesive, or Amtico PS (pressure sensitive) Adhesive. Only the recommended adhesives should be used. Other adhesives will not give adequate performance, may fail and are not warranted by Amtico International.
 - a. Amtico 373 Adhesive: Amtico 373 is solvent-free, nonflammable, freeze/thaw stable and nearly odor-free acrylic latex Adhesive. It is suitable for both residential and commercial climate controlled environments, including busy homes and apartments, retail stores, hotels, office buildings, hospitals, schools, restaurants and nursing homes, etc. Amtico 373 contains micro-biocides to inhibit the growth of mold and mildew. Amtico 373 can be used to install resilient tile over porous (using a 1/16"x1/16"x1/16" square-notch trowel) and non-porous (using a 1/32"x1/32"x1/16" fine-notch trowel) subfloors. It should be used as a semi wet-set adhesive. **DO NOT USE AMTICO 373 AS A PRESSURE SENSITIVE ADHESIVE.** Over Porous Surfaces: After spreading the Amtico 373 adhesive allow 5 to 10 minutes open time before installing the floor covering. Over Non-Porous Surfaces: After spreading the Amtico 373 adhesive allow 10 to 30 minutes open time before installing the floor covering. The working time will vary depending on the temperature, humidity, and porosity of the subfloor. Amtico 373 spreads easily, exhibits quick grab and has excellent resistance to moisture and plasticizer migration. Do Not use



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Amtico 373 adhesive in wet areas like locker rooms, in areas exposed to direct sunlight, areas with temperature fluctuations or in locations with heavy point loads.

- b. Universal 2-Part Adhesive: Universal 2-Part Adhesive is solvent-free and nearly odor free 2-component polyurethane adhesive for professional use only. Although primarily used for commercial applications, it is equally suitable for moisture and temperature sensitive residential environments. Universal 2-Part works well over both porous and non-porous substrates (using a 1/16" x 1/16" x 1/16" V-notch trowel). It is recommended for all areas subject to some heat and moisture variations like what may be found adjacent to sunny windows and bathrooms. Universal 2-Part must be used for installing Amtico and Spacia flooring in wet areas such as locker rooms and should also be used for areas with high point loads and direct sun exposure.
- c. Amtico PS (pressure sensitive) Adhesive is a low VOC, solvent free adhesive that can be bonded to concrete, terrazzo, plywood, and many other surfaces provided appropriate patching/prepping compounds have been used. It has a working time of 3 hours which must not be exceeded. Amtico PS Adhesive can be used to install resilient tile over porous (using a 1/16"x1/16"x1/16" square-notch trowel) and non-porous (using a 1/32"x1/16"x1/32" fine-notch trowel) subfloors. Adhesive should be stirred before use, and holding the appropriate trowel at an angle of 60° spread evenly only as much adhesive that can be covered within the 3 hour working time. Start installation when adhesive has tacked up dry to touch, generally 10 to 30 minutes depending upon atmospheric conditions, before laying tile. Adhesive left open beyond the 3 hour working time must be scraped off the substrate and fresh adhesive applied. Light traffic is allowable after 4-8 hours. Floors should be protected from point loads and heavy traffic for 48 hours.

3. Universal 2-Part Adhesive Preparation:

- a. The adhesive container consists of two separate units packaged inside each other. The upper portion contains the hardener and the lower portion contains the resin. Pierce upper container 2 or 3 times with a pointed tool or screwdriver. Push tip straight through center plastic seal and bottom of the upper container. Do not twist or pry sideways as this may prevent all of the hardener from flowing into resin container.
- b. Break seal between upper and lower container to allow hardener to flow into resin container.
- c. Remove plastic seal and visually inspect upper container to ensure that all hardener has flowed into lower resin container.
- d. Do not dilute or mix part of each can together. Mix entire contents of hardener (upper container) with entire contents of resin (lower container).
- e. Remove upper container when it is empty (2-3 min).
- f. Promptly mix both parts of adhesive together thoroughly (3-5 min) to a uniform color. Use low speed electric drill and clean mixing paddle. DO NOT MIX BY HAND. Immediately spread adhesive after mixing.

CAUTION: 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.

4. Adhesive Application: Follow the instructions on the adhesive labels.

- a. Use a trowel with appropriate notch size. Do not use worn trowels (approximately 600 sf usage on concrete).
- b. Spread adhesive evenly with proper trowel held at 60 degree angle avoiding skips or voids and excessive adhesive application.
- c. Only spread sufficient adhesive that can be covered within the adhesive working time.



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- d. Tiles must be placed into adhesive as specified (follow label directions). Promptly remove all skinned over or dried Universal Two Part and Amtico 373 adhesive from the subfloor and replace with new adhesive before continuing the installation.
 - e. Install rows to chalk line making sure tiles are precisely aligned with chalk line and adjacent tiles.
 - f. If using Universal 2 Part Adhesive or Amtico 373 Adhesive, randomly check tiles 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 the adhesive has flashed off adequate bonding will not be possible. Scrape the flashed off adhesive from the floor and spread fresh adhesive.
 - g. If tiles shift, use releasable masking tape diagonally over seams to keep tiles tight and aligned.
 - h. Wet-Set Application: **Do not work on top of freshly installed tiles.** This will minimize tile shifting, adhesive displacement and wet adhesive from oozing up and getting onto the face of the tiles. If you must work on top of newly installed tiles, use kneeling and or walk boards.
 - i. The floor must be rolled in both directions using a 100 lb 3-section roller. Roll floor as soon as conditions permit without tiles sliding or adhesive bleeding to the surface. Roll floor again 90 degrees to the first within 1 hour. Universal Two Part adhesive and Amtico 373 should provide 100% uniform adhesive transfer (no visible trowel ridges) onto the back of the tile (and not cause adhesive to squeeze out between tiles). Amtico PS (pressure sensitive) Adhesive will not transfer 100% to the backing of the tile, be sure not to exceed the 3 hour working time.
 - j. Clean excess adhesive as you install before it is allowed to dry. Use a soapy clean soft cloth to remove wet excess 373 Adhesive or Amtico PS Adhesive and use a clean soft cloth moistened with Denatured alcohol to remove wet excess Universal 2-Part Adhesive. Dried Amtico 373 adhesive can be removed by carefully scraping it off the tile, or by using a clean cloth moistened with mineral spirits. Universal Two Part adhesive allowed to dry on the tile surface may not be removable. **DO NOT USE MINERAL SPIRITS OR SOLVENTS ON AMTICO STRATICA TILE.**
 - k. Clean up all debris as you work.
 - l. Wait 24 hours for normal foot traffic and wait 48 hours for point and rolling loads after installation.
 - m. Wait 5 days after installation before washing finished floor.
5. Special Considerations:
- a. Radiant Heat: Radiant heating systems must be switched off for a minimum of 48 hours before, during and 48 hours after the Amtico flooring installation. Use supplemental heat, if necessary to maintain a stable room temperature. When the radiant heat system is re-started, the temperature should be raised no more than 1° - 2° F (1° C) per day until reaching the desired temperature. The flooring surface should not go below 55° F (13° C) and not exceed 81° F (27° C) during its' service life. Do not use Amtico 373 or Amtico PS adhesive over floors with radiant Heating.
 - b. Existing Resilient Flooring: Existing resilient flooring and adhesive should be mechanically removed. **Do not use adhesive removers or solvents.**
 - c. Asbestos Abatement removal: Amtico International recommends following the Resilient Floor Covering Institute Guidelines for removal of existing tile and mastic. **Do not use adhesive removers or solvents.** Any mastic remover residue including Soy or Citrus products can attack and break down the new adhesive resulting in tiles releasing. **Floor covering warranties do not cover instances where adhesive removers or solvents cause damage to the flooring or installation failure.**
 - d. Concrete Curing, Sealing, Hardening or Parting Compounds: Amtico International recommends wet curing concrete for 7 days if at all possible to avoid the use of Curing, Sealing, Hardening or Parting Compounds. If a chemical compound must be used, prior to use, obtain a written performance guarantee from the concrete compound manufacturer stating that the application of their product will



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not interfere with the adhesion of acrylic or polyurethane adhesives to the concrete slab or obtain their guaranteed removal process.

- e. Expansion Joints: Expansion joints are incorporated into concrete floor slabs in order to permit movement without causing cracks in the concrete. These joints must not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covers should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.
- f. Protecting New Installations: New Installations must be protected while the adhesive sets. Early foot traffic, point or rolling loads can cause adhesive displacement or breaking of the bond between the adhesive and the tile or substrate.

F. Amtico Initial Maintenance

To get your new Amtico floor looking its best, and to keep it that way, Amtico International recommends the following initial maintenance procedures. For detailed recommendations, see the Amtico Maintenance Instructions.

- Use non-staining matting system at exterior doors that is appropriate for soil load and weather conditions.
- Use appropriate floor protectors, glides and wheels and do not drag or slide objects across the surface of the floor.
- Do not use abrasive cleaners that can scratch the floor surface or detergent cleaners that leave a residue.

SAFETY FIRST: Before commencing work, put out signs or safety cones to warn that cleaning is in progress.

Day 1

- Stay off the new floor.

Day 2 to 4

- Dust mop, sweep or vacuum the floor to remove loose dirt and grit.
- Lightly damp mop (well wrung out mop) floor with properly diluted Neutral cleaner solution.

Day 5

- Choose from multiple routine maintenance options to suit individual circumstances and end user preference.
- Apply floor finish if desired.

Routine Maintenance

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.

Maintenance Precautions and Safety Information

A slippery floor can cause accidents. This 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.

Note: The optional MPS Urethane coating does not require a dressing. Finishes should not be buffed with any pad more abrasive than a red 3M pad.