

Installation Guide for Resilient Flooring

Commercial Vinyl-Back Installation System

Product	Gauge	Adhesive and Seaming Options					
		Full Spread		Concentrated Static & Dynamic Load Areas	Perimeter Plus***	Heat Weld	S-761
		Porous (Optional) S-599 or S-543* Set-in-Wet	Porous and Nonporous S-599, S-543* or Flip Dry-to-Touch	Flip or S-240**	S-599 or S-543 with S-240** Flip with S-240**		
Medintech and Medintone with Diamond 10 Technology coating Accolade Plus	0.080" (2.0 mm)	X	X	X		X	X
Safety Zone Sheet	0.080" (2.0 mm)	X	X	X	X	X	

* It is necessary to smooth out the adhesive trowel ridges using a medium nap paint roller.

** It is necessary to smooth out the adhesive trowel ridges using a 3/16" (4.8 mm) nap paint roller. The purpose of this is to create a uniform application of the adhesive.

*** Recommended for Safety Zone Sheet in wet areas such as showers or areas that may be exposed to frequent water spills and/or cooler temperatures. These include entryways, areas around freezers/refrigerator cases and produce areas.

Installation:

- Location: All grade levels
- Pattern Match: No: reverse pieces (Trademark (TM) edge to Trademark (TM) edge)
(Accolade Plus and Safety Zone sheet do not include a trademark)
- Seam Method: Recess scribe
- Seam Treatment: Heat weld or S-761 Seam Adhesive
- Fitting: All methods

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Suitable Substrates:

All substrates listed below must be properly prepared and meet the requirements discussed in Chapter 3, Subfloors and Underlayments. There may be other exceptions and special conditions for these substrates to be suitable for the Commercial Vinyl-Backed Installation System.

- Concrete (on all grade levels)
- Steel, stainless steel, aluminum
- Approved suspended wood
- Ceramic tile, terrazzo, marble
- Existing resilient floors
- Polymeric poured (seamless) floors

Job Conditions/Preparation:

- Resilient flooring should only be installed in temperature-controlled environments. It is necessary to maintain a constant temperature before, during and after the installation. Therefore, the permanent or temporary HVAC system must be in operation before the installation of resilient flooring. Portable heaters are not recommended, as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the substrate or cause a discoloration of the flooring from below. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate, they must be mechanically removed prior to the installation of the flooring material.
- In renovation or remodel work, remove any existing adhesive residue* so that 100% of the overall area of the original substrate is exposed.
- Allow all flooring materials and adhesives to condition to the room temperature for a minimum of 48 hours before starting the installation.
- The area to receive the resilient flooring should be maintained at a minimum of 65° F (18° C) and a maximum of 100° F (38° C) for 48 hours before, during and for 48 hours after completion.

NOTE: When using S-240 Epoxy Adhesives, the maximum room temperature should not exceed 85° F (29° C).

- During the service life of the floor, the temperature should never rise above 100° F (38° C), nor fall below 55° F (13° C). The performance of the flooring material and adhesives can be adversely affected outside this temperature range.
- For concrete substrates, conduct moisture testing (moisture vapor emission rate [MVER]) and/or percent relative humidity (in-situ probe). Bond tests must also be conducted for compatibility with the substrate. Please refer to Chapter 3, Subfloors and Underlayments.
- Radiant-heated substrates must not exceed a maximum surface temperature of 85° F (29° C).
- Concrete floors should be tested for alkalinity. The allowable readings for the installation of Armstrong® flooring are 5 to 9 on the pH scale.

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** Some previously manufactured asphaltic “cutback” adhesives contained asbestos (see warning statement on page xvi). For removal instructions, refer to the Resilient Floor Covering Institute’s publication Recommended Work Practices for Removal of Resilient Floor Coverings.*

Fitting:

- Unroll material and lay flat to allow the roll curl to relax before fitting.
- Material must be adhered within 4 hours of cutting and fitting.
- Before installing the material, plan the layout so seams fall at least 6" (15.24 cm) away from subfloor/underlayment joints. Do not install over expansion joints.
- When installing over an existing resilient floor, plan the layout so the new seams do not coincide with seams or joints of the existing installation.
- Recommended fitting procedures include freehand knifing, straight scribing or pattern scribing.

Abutting Different Gauges of Resilient Flooring:

When installing thinner gauge material next to thicker gauge materials, install thicker material first and then butt a 12" (30.5 cm) wide piece of S-153 Scribing Felt against the thicker material. Adhere the Scribing Felt to the subfloor with S-235 Adhesive. Use the fine notching of the S-891 Trowel over nonporous substrates such as existing resilient flooring, and use the regular notching of the S-891 Trowel over porous subfloors such as wood and concrete. Use S-184 Fast-Setting Cement-Based Patch and Skim Coat or S-194 Patch, Underlayment and Embossing Leveler to feather the edge of the S-153 Scribing Felt to the level of the substrate. Allow the patch to dry completely before installing the flooring. Scribing Felt is not recommended to be used under the entire installation.

Procedure:

- See Chapter 5, Adhesives, Trowel Notchings, Seam Treatments and Grout.
- Clean adhesive residue from the surface of the flooring using a clean white cloth dampened with a neutral detergent and water. Give special attention to seam areas as they must be clean and dry before proceeding with heat welding or sealing.
- Cut pieces to the proper length, allowing enough material at each end to flash 1-1/2" (31.8 mm) up the walls for fitting.

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Adhesive Open Times and Trowel Notchings

Product and Adhesive	Open Time Porous Subfloors	Open Time Nonporous Subfloors
Medintone and Medintech with Diamond 10 Technology Coating Accolade Plus Heterogeneous Sheet Safety Zone Sheet with S-599 or S-543*	Set-in-Wet: (Optional) Approximately 10–20 minutes (paste-like consistency) Dry-to-Touch: Approximately 30 minutes (no transfer of adhesive to finger) Fine Notch: 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 5/64" (2 mm) apart Flip—Dry-to-touch only (no transfer of adhesive to finger)	Dry-to-Touch: Approximately 30 minutes (no transfer of adhesive to finger) Fine Notch: 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 5/64" (2 mm) apart

** It is necessary to smooth out the adhesive trowel ridges using a 3/16" (4.8 mm) nap paint roller. The purpose of this is to create a uniform application of the adhesive.*

Adhesive Open Times and Trowel Notchings

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Product and Adhesive	Open Time Porous Subfloors	Open Time Nonporous Subfloors
Medintone and Medintech with Diamond 10 Technology Coating Accolade Plus, Safety Zone Sheet Heterogeneous Sheet with Flip Spray Adhesive	Dry-to-Touch: Approximately 30–40 minutes (no transfer of adhesive to finger) Refer to the provided spray patterns for proper application	Dry-to-Touch: Approximately 30–40 minutes (no transfer of adhesive to finger) Refer to the provided spray patterns for proper application
Medintone and Medintech with Diamond 10 Technology Coating Accolade Plus, Safety Zone Sheet Heterogeneous Sheet with S-240** adhesive	Set-in-Wet: Approximately 10–20 minutes (do not allow to dry-to-touch) Fine Notch: 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 5/64" (2 mm) apart	Set-in-Wet: Approximately 10–20 minutes (do not allow to dry-to-touch) Fine Notch: 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 5/64" (2 mm) apart
Medintone and Medintech with Diamond 10 Technology Coating Accolade Plus, Safety Zone Sheet Heterogeneous Sheet with S-580 (Flash cove areas only)***	Dry-to-Touch: Approximately 30 minutes (no transfer of adhesive to finger) Trowel Notching: Brush-On or Roll-On	Dry-to-Touch: Approximately 30 minutes (no transfer of adhesive to finger) Trowel Notching: Brush-On or Roll-On

** It is necessary to smooth out the adhesive trowel ridges using a medium nap paint roller.

*** Apply two coats of S-580 Flash Cove Adhesive with a brush or roller 4" (10.2 cm) onto the floor as well as up the entire cove area. Allow adhesive to dry to a pressure-sensitive state between applications. S-580 has unlimited working time.

NOTE: If you cover wet areas or cover the adhesive too soon, blisters will form after rolling. Blisters caused by inadequate drying time will begin to show within one hour after rolling. The amount of open time will vary according to job conditions, temperature, humidity, air flow and type of substrate. All adhesives are applied with fine notching [1/32" (0.8 mm) deep, 1/6" (1.6 mm) wide, 5/64" (2 mm) apart].

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Sheet Installation:

Full Spread with S-599 or S-543

1. Apply adhesive with fine notching of the S-891 Trowel. When installing over nonporous substrates such as existing resilient flooring, allow enough open time for adhesive to dry until tacky with no transfer to the finger (dry-to-touch) before placing the material into the adhesive. When installing over porous subfloors such as concrete and wood, allow the adhesive to thicken to a paste-like consistency (set-in-wet) before placing the material into the adhesive. The adhesive should show good transfer to the finger before placement of the floor. Recess scribe seams. Use S-580 Adhesive in flash cove areas. Before installing the material, plan the layout so seams fall at least 6" (15.24 cm) away from underlayment joints, seams in existing resilient flooring and/or saw cuts in concrete. Do not install over expansion joints.
2. Cut pieces from the roll to the specified length, allowing enough material at each end to flash 1-1/2" (31.8 mm) up the wall for fitting.
3. Recommended fitting procedures include freehand knifing, pattern scribing and straight scribing methods.
4. Fit piece #1 and position in the room.
5. Prepare the seam edge by trimming the factory seam edge using an edge trimmer.
6. Draw a pencil line on the subfloor along the length of the trimmed factory edge.
7. Carefully lap the material back halfway to expose the subfloor.
8. Starting at the lap point and working toward the end wall, apply the S-599 Adhesive up to the pencil line using the fine notching of the S-891 Trowel.
9. Allow the recommended open time before placing the material into the adhesive. Use extreme care when positioning the flooring over S-599 Adhesive, which has a firm grab and does not allow repositioning.
10. Starting at the center and working toward the edges, roll the material in two directions using a 100-lb. roller, staying 2" (5.1 cm) away from the seam. Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water.
11. Repeat steps #7 through #10.
12. Cut piece #2 allowing enough material at each end to flash 1-1/2" (31.8 mm) up the wall for fitting.
13. Install pieces as recommended, TM edge to TM edge or TM edge to non-TM edge.
14. Overlap piece #2 onto piece #1 approximately 1/2" (12.7 mm). Prepare the seam edge on the opposite side of the sheet by trimming the factory seam edge using an edge trimmer.
15. Draw a pencil line on the subfloor along the length of the trimmed factory edge.
16. Carefully lap the material back halfway to expose the subfloor.
17. Starting at the lap point and working toward the end wall, apply the S-599 or S-543 Adhesive up to the pencil line using the fine notching of the S-891 Trowel.
18. Allow the recommended open time before placing the material into the adhesive. Use extreme care when positioning the flooring over the S-599 Adhesive, which has a firm grab and does not allow repositioning.
19. Starting at the center and working toward the edges, roll the material in two directions using a 100-lb. roller staying 2" (5.1 cm) away from the seam. Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water.

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20. Repeat steps #16 through #19 for the remaining half of piece #2.
21. Recess scribe the seam using a recess scribe. When heat welding, seams may be recess scribed slightly open [1/64" (0.4 mm)] to make guiding the router easier. When using S-761 Seam Adhesive, cut the seams net.
22. Before cutting the seam, protect the floor by inserting a piece of scrap material beneath the scribe mark. With the scrap on the same side as the cutting hand, cut the seam holding a straight blade knife straight up and down.
23. When using S-761 Seam Adhesive option cut seams net.
 - a. Cut the tip of the S-761 Seam Adhesive applicator bottle and apply a continuous 1/8" (3.18 mm) bead of S-761 Seam Adhesive along the seam edge of piece #1.
 - b. Tuck the seam edge into place, forcing the S-761 Seam Adhesive up through the seam.
 - c. Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water.
 - d. Refer to Chapter 7, Seams, S-761 Seam Adhesive Procedure for more detail.
24. Roll the seam into place using a hand roller and roll again with a 100-lb. roller.
25. Follow the same procedures for the remaining pieces, completing one piece at a time until the job is finished.
26. When heat welding seams, follow recommendations in Chapter 7, Seams, Heat Welded Seams.
27. Do not allow traffic on the flooring for 24 hours after installation.
28. Newly installed flooring should not be exposed to rolling load traffic for at least 72 hours after installation to allow setting and drying of the adhesive.

Flip Spray Adhesive — See Flip Spray Adhesive Installation Method

Medintech, Medintone, Accolade Plus, and Safety Zone Sheet in Environmental Conditioning Units

1. Maintain temperature of the room at a minimum of 65° F (18° C) for 48 hours before installation, during installation, and for 72 hours after installation. Maximum room temperature is 100° F (38° C). If these temperatures are not maintained for the recommended period of time, the flooring material and adhesives may not perform as they should.
2. Follow installation and seaming details for Full Spread S-599, S-240. Seams must be heat welded.
3. Use S-240 Epoxy Adhesive at all floor drains.
4. Mix the entire contents of Part A and Part B together with a stirring motion while at the same time lifting from the bottom. Mix thoroughly for 3 to 5 minutes to a uniform color. Do not over mix. Never mix S-240 Epoxy Adhesive on the subfloor surface.
5. Immediately pour the entire unit of mixed adhesive onto the substrate. Do not leave mixed adhesive in cans as it shortens pot life and working time, and may generate excessive heat. Maximum pot life of S-240 is approximately 15 minutes, depending on temperature and humidity.
6. Apply a 3" (7.6 cm) band of S-240 Adhesive around any floor drains in area of installation.

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7. Roll the material in two directions using a 100-lb. roller. Roll immediately after placement of flooring and re-roll again 1 hour later. Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water. Dried S-240 Adhesive cannot be removed.
8. Immediately after installation, apply a bead of silicone caulk along the top of the cap strip and onto the wall.
9. After the material has been installed and allowed to condition for 72 hours as outlined in Step #1, gradually lower the temperature of the room over a period of 3 days. The temperature of the room should never go below 34° F (1° C).
10. Do not allow traffic on the flooring for 24 hours after installation.
11. Newly installed flooring should not be exposed to rolling load traffic for at least 72 hours after installation to allow setting and drying of the adhesive.

Perimeter Plus with S-599, S-543 or Flip/S-240:

Use a full spread of S-599, S-543 or Flip in field areas with a 3" (7.6 cm) band of S-240 Adhesive at the perimeter of the room. Recommended for Safety Zone Sheet in wet areas such as showers or areas that may be exposed to frequent water spills and/or cooler temperatures. These include entryways, areas around freezers/refrigerator cases and produce areas.

1. Follow installation and seaming details for Full Spread with S-599, S-543 or Flip except for the S-240 Epoxy Adhesive at the perimeter of the room and at floor drains.
2. Mix the entire contents of S-240 Part A and Part B together with a stirring motion while at the same time lifting from the bottom. Mix thoroughly for 3 to 5 minutes to a uniform color. Do not over mix. Never mix S-240 Adhesive on the subfloor surface.
3. Immediately pour the entire unit of mixed adhesive onto the substrate. Do not leave mixed adhesive in cans as it shortens pot life and working time, and may generate excessive heat. Maximum pot life of S-240 is approximately 10 minutes, depending on temperature and humidity. We require a push in 'ring and clamp' floor drain fitted prior to the installation of the flooring (Figure 1). Safety Zone Sheet is to be installed into the pull down base with S-240 Epoxy Adhesive and clamped with the clamp ring and grate set.

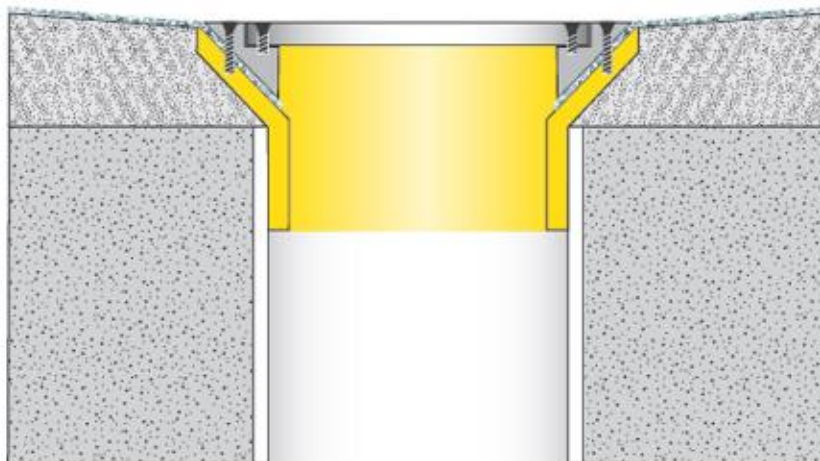


Figure 1

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4. Apply a 3" (7.6 cm) band of S-240 around the perimeter of the room and at all floor drains. Full spread the remaining area using S-599, S-543 or Flip Spray Adhesive. Allow the recommended open time before placing the material into the adhesive. Working time of the S-240 is approximately 1 hour. Do not allow the S-240 to dry completely.
5. Starting at the center and working toward the edges, roll the material in two directions [staying 2" (5.1 cm) away from any seams] using a 100-lb. roller. Roll within 30 minutes of adhesive application and re-roll again 1 hour later. Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water. Dried S-240 Adhesive cannot be removed.
6. Follow the same procedures for the remaining pieces, completing one piece at a time until the job is finished.
7. Do not work on newly adhered flooring except to roll. Use a kneeling board if necessary.
8. Do not allow traffic on the flooring for 24 hours after installation.
9. Newly installed flooring should not be exposed to rolling load traffic for at least 72 hours after installation to allow setting and drying of the adhesive.

Flash Coving:

All normal fitting methods can be used to flash cove. Apply two coats of S-580 Flash Cove Adhesive with a brush 4" (10.2 cm) on the floor as well as up the entire cove area. Allow adhesive to dry to a pressure sensitive state between applications. S-580 has unlimited working time. See open times chart. Roll the flooring into the adhesive with a hand roller.

Flip Spray Adhesive Installation Method

Flooring Installation:

- A clean substrate is extremely important with the use of Flip Spray Adhesive! Thoroughly sweep and vacuum the substrate first. Damp mop to remove any remaining dust or debris. Extra attention to substrate preparation is essential for a successful installation. Failure to properly clean the substrate may result in telegraphing of debris.
- Shake the can well before each use. Point can downwards, press the side of the nozzle tip as you slowly walk back and forth overlapping the spray pattern for an even spray coverage. Do not use a sweeping motion as this may cause uneven coverage. Clean up any larger drops that may occur. Refer to the provided spray patterns for proper application. The sprat patterns for tile and sheet are different. Over application, especially for sheet vinyl may cause adhesive telegraphing.
- Bond testing prior to the installation will help identify the appropriate application rate, open and working time, and any potential bonding problems to the substrate or flooring. To determine the accurate coverage rate, measure and chalk line the substrate into grids (using the appropriate square feet of area for the adhesive application) and spray the entire can of adhesive onto each measured grid area.
- Allow the adhesive to dry completely with no transfer to fingers when lightly touched. Open time will vary depending on the adhesive coverage, substrate porosity and the ambient conditions.
- Working time for the adhesive should not exceed 4 hours.

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- Install the flooring as per the Armstrong Flooring recommendations for that particular material.
- Roll the floor immediately after the installation is complete with a 100-lb. roller. Sheet flooring seams may be heat welded immediately after installation. Normal traffic may be allowed as soon as the installation, finishing and clean-up are complete. Wait 24-hours for heavy traffic or rolling loads.

Safety and Clean Up:

- Wet adhesive overspray or drips should be cleaned up immediately with soap and water on a clean cloth. Dried adhesive may require the use of a solvent adhesive cleaner. Between uses, clean the spray tip immediately with a clean wet cloth to prevent accumulation of dried adhesive.
- Empty aluminum spray cans should be relieved of excess pressure and recycled or disposed of in accordance with local requirements. Do not expose to temperatures exceeding 115° F. Prolonged exposure to heat or direct sun may cause container to burst.

Coverage:

- Rate of application depends on flooring product being installed and porosity of the substrate:
160–185 square feet per can (approximate): VCT
140–150 square feet per can (approximate): Luxury Vinyl Tile and Planks and Vinyl Sheet

Concentrated Static and Dynamic Loads Installation Method

Product Performance under Concentrated Static and Dynamic Loads:

- Armstrong Flooring is used in many applications where it is subjected to heavy static and dynamic loads. Some furnishings, appliances and equipment in certain environments may be equipped with wheels, casters, rests or other floor contact devices, which concentrate rather than distribute the load over the surface of the flooring. Hospital patient beds and operating room tables are typical examples. With respect to portable furnishings and equipment, while concentrated wheel/ caster loadings provide for easier mobility they can be particularly damaging to resilient flooring installations. Armstrong Flooring recommends that any furnishings or equipment be fitted with floor contact devices, which avoid concentrating weight loads.

- Our experience has shown that the use of hard-setting reactive adhesives, like our S-240 Epoxy Adhesive, offer advantages and may help protect against damage (such as delamination) when used to install flooring under such furnishings and equipment. Depending on the application, the epoxy may only be necessary in limited areas of any particular installation such as an area immediately beneath and adjacent to the primary areas of contact with the flooring. In the case of certain heavy hospital beds, the application of the epoxy adhesive in an area that extends a minimum of 1' beyond the wheel base or footprint of the four casters [approximately 4' x 8' (1.2 m x 2.4 m)] may be sufficient.

- Move the chalk lines to the corner or end of the room farthest from the doorway. These lines should be 2' or 3' from the wall, depending on your reach (Fig. 1).

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Using 240 Epoxy Adhesive:

1. Mix the entire contents of Part A and Part B together with a stirring motion while at the same time lifting from the bottom. Mix thoroughly for 3 to 5 minutes to a uniform color. Do not over mix. Never mix S-240 Adhesive on the subfloor surface.
2. Immediately pour the entire unit of mixed adhesive onto the substrate. Do not leave mixed adhesive in cans as it shortens pot life and working time, and may generate excessive heat. Maximum pot life of S-240 is approximately 15 minutes, depending on temperature and humidity.
3. Apply the S-240 Epoxy Adhesive in 2' or 3' bands (Fig. 2), being careful not to cover the chalk lines. Do not apply more adhesive than you can cover within 20 minutes. Immediately back roll the S-240 with the supplied paint roller. Allowing a 10-minute open time and fitting the border tile tightly will reduce tile shifting and adhesive oozing. DO NOT allow the adhesive to dry completely.



Fig. 1 Chalk lines.

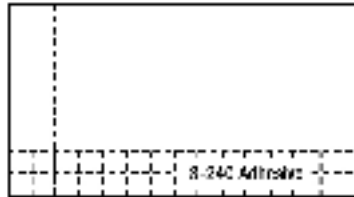


Fig. 2 Adhesive band.

4. When using S-240 Epoxy Adhesive in conjunction with the recommended Armstrong Flooring Full Spread Adhesive, plan out the open times so that the flooring may be placed into both adhesives at the same time. Working time of S-240 Epoxy Adhesive is 60 minutes.
5. After allowing the proper open time, carefully place the tile flooring into the S-240 Epoxy Adhesive to ensure that air is not trapped beneath the flooring.
6. Install the tile along the chalk lines. Wood plank visuals must be installed with the arrows pointing in the same direction. Squares and rectangle tiles may be installed with arrows pointing in the same direction, quarter turned or randomly installed for customized visuals. Install the field area first and then fit in the border tile.
7. Clean any adhesive residue from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water. Dried S-240 Epoxy Adhesive cannot be removed.
8. Within 30 minutes of the S-240 application, roll the material using a 100-lb. roller. Starting at the center and working toward the edges, roll the material in the direction of the trowel notches and then again in the opposite direction. Do not work on newly adhered flooring except to roll. If unavoidable, use a kneeling board.
9. Repeat rolling procedure at 1 hour and 2 hours after the initial application of S-240 Epoxy Adhesive.
10. Do not allow traffic on the flooring for 24 hours after installation.
11. Newly installed flooring should not be exposed to rolling load traffic for at least 72 hours after installation to allow setting and drying of the adhesive.