Fiberglass-Reinforced Sheet Flooring
Installation System

Product	Adhesive	Comments
Residential Use Only CushionStep Value Good Better Best FlexStep Duality Premium Premium Plus	Modified loose lay method—Acrylic double-faced tape at seams Full Spread Releasable Adhesive method—S-289 Releasable Adhesive Conventional Full Spread method (not releasable) — S-288 Flooring Adhesive	Seams—Double cut; Seam treatment—DO NOT use S-585 Seam Cleaner; apply S-570 using S-564 Seam Coating Kit
Light Commercial Use Abode Duality Premium Premium Plus	Conventional Full Spread method (not releasable) — S-288 Flooring Adhesive	

General Information:

CushionStep, FlexStep and Duality flooring, in residential applications, can be installed by three installation methods. The flooring can be installed by the modified loose lay installation method using acrylic double-faced tape under seams, or it can be installed by two full spread options using either S-288 Flooring Adhesive or S-289 Releasable Adhesive. Depending on the type of subfloor, size and complexity of the room, and the type of traffic expected in the room, one of the full spread options may be recommended. Fiberglass-reinforced flooring should not be installed by perimeter fastening methods.

The modified loose lay method requires that the flooring be cut 1/4″ (6.4 mm) away from all vertical surfaces such as walls, cabinets, pipes, etc. This gap will then be covered with moldings or wall base. An acrylic double-faced tape is used under seams. This method may be used over suspended wood subfloors and underlayments in rooms that require one seam or less, and in rooms with concrete subfloors regardless of size or number of seams.

The S-289 Releasable Adhesive installation system can be used over recommended substrates in areas not always suitable for loose lay applications. Examples include installations that have multiple seams over wood underlayments, in bathrooms, and in areas of the home that have small rolling appliances such as portable dishwashers or microwave carts. The flooring should be cut 1/8″ (3.2 mm) away from all vertical surfaces when using this method. The releasable installation system is ideal for reducing the remodel workload in rental units, condominiums or other spaces that undergo frequent replacement of the flooring. (See S-289 Releasable Adhesive Installation System for complete information.)

In certain areas of the country, where seasonal moisture and humidity changes are severe, the movement in wood subfloors can cause a raised area or a buckle in the flooring near a perimeter pinch point. Typically, if this happens, it will occur during prolonged periods of cold weather when interior conditions become very dry and the wood subfloor/underlayment components dry out and shrink. Should this happen and a buckle occurs, the flooring should be gently lifted or pulled back from the pinch point and retrimmed.

The use of S-288 adhesive provides a more permanent bond. It allows for net fitting without gaps at vertical surfaces, and can be used when products are installed on stairs, landings and rooms with floor drains.

Abode flooring and Duality flooring used in light commercial applications must be installed full spread, using S-288 adhesive.

Summary of Residential Fiberglass-Reinforced Installation Options

	Modified Loose Lay	S-289 Releasable Adhesive	S-288 Flooring Adhesive
Spacing (gap) at vertical surfaces	1/4″	1/8″	None
Base cabinets on top of flooring	No	No	Yes
Island cabinets on flooring	No	Yes	Yes
Bathrooms	No	Yes	Yes
Stairs, landings or rooms with floor drains	No	No	Yes
Seams on suspended wood underlayments	Only 1	Multiple OK	Multiple OK

Suitable Substrates (for all installation options):

All substrates listed below must be properly prepared and meet certain requirements. There may be other exceptions and special conditions for these substrates to be suitable for the flooring installation.

- Concrete (on all grade levels)
- Approved Suspended Wood Underlayments
- Single-layer, Fully Adhered, Existing Resilient Floors
- Ceramic Tile, Terrazzo, Marble
- Polymeric Poured (seamless) Floors

Do not install over:

- Particleboard, waferboard, OSB or single-layer Sturd-I-Floor panels
- Existing resilient tile floors that are below grade
- Existing cushion-backed vinyl flooring
- Carpet

- Hardwood flooring that has been installed directly over concrete

Job Conditions/Preparation (for all installation options):

- All substrates must be sound, dry, clean, smooth, and free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, other foreign matter and containments that could cause staining or interfere with a good bond.
- Do not use products containing petroleum solvents or citrus oils to prepare substrates as they can cause staining and expansion of the new flooring.
- In renovation or remodel work, remove any existing adhesive residue* so that 100% of the overall area of the original substrate is exposed.
- When installing over an existing resilient floor, use S-199 One-Part Embossing Leveler or S-194 Patch, Underlayment & Embossing Leveler/S-195 Underlayment Additive to fill and smooth any embossing in the old floor.
- The area to receive resilient flooring and the flooring materials and adhesives should be maintained at a minimum of 65°F (18°C) and a maximum of 100°F (38°C) for 48 hours before installation, during installation, and 48 hours after completion. Maintain a minimum temperature of 55°F (13°C) thereafter.
- For concrete subfloors, the water vapor emission level must be 3 lbs./1000 sq.ft./24 hours, or less, as determined by calcium chloride testing. If subfloor moisture vapor transmission levels exceed the recommended limit, the concrete must be allowed to dry prior to installing the floor.
- Radiant heated substrates must not exceed a maximum surface temperature of 85°F (29°C).

As with many flooring products, the full spread adhesive methods generally require somewhat more attention to the condition of the substrate so that it will not telegraph irregularities through the finished floor. If flash coving is done with fiberglass-reinforced sheet flooring, S-288 adhesive must be used in a full spread application with S-580 used on the coved areas.

Modified Loose Lay Method

Keys to Successful Modified Loose Lay Installation:

- Proper conditioning of both the jobsite and the flooring is necessary. The flooring should not be exposed to wide ranges in temperature and moisture/humidity levels in the home.
- Store, transport and handle flooring so as to prevent any sharp creases or other distortions in the sheet. Always roll face-out on a cardboard tube. Distortions will generally not disappear or shrink on their own. Sheet must be lying flat at time of installation.
- Just prior to installation, lay flooring out flat to acclimate to conditions and allow the roll-up stresses to relax.

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

- Seams must be double cut, net, with no fullness. Do not straight edge and butt seams. Do not stretch or compress at seams as this will lead to small buckles.
- Do not compress the edges of the sheet in any way when installing other flooring materials next to the flooring. Installation of carpet, metal strips and other transition moldings should not push fullness into the flooring.
- Always protect from rolling loads from other trades and replacement and/or movement of appliances.

The modified loose lay method requires that the flooring be cut 1/4″ (6.4 mm) away from all vertical surfaces such as walls, cabinets, pipes, etc. This gap will then be covered with molding or wall base. With this method the flooring should be allowed to "float" freely over the subfloor. This is particularly important over wood subfloors as the wood can grow and shrink with the changes in moisture content. The flooring will be bonded at seams, however, with an acrylic double-faced tape designed for use with vinyl flooring. Only one seam is permitted when using this method over suspended wood subfloors and underlayments. Multiple seams are allowed when this method is used over concrete subfloors.

Tape may also be used at doorways if needed, however the preferred method is to use transition strips, similar to a "T" molding, that cover the edge of the flooring while at the same time allowing for some movement of the flooring beneath the molding. **Do not use the tape around the entire perimeter of the room and do not install base cabinets on top of the flooring.**

Planning and Layout:

- Plan the layout so seams in the new flooring fall at least 6″ (15.2 cm) away from seams and joints in existing flooring and underlayments.
- Remove wall base and quarter-round moldings.
- The decorative trim and jamb moldings at doorways should be under-cut to allow flooring to slip underneath as you can't hide perimeter gap with wall base in these areas.
- After preparation work is completed, be sure to sweep and vacuum entire work area taking extra care to remove all dirt and debris.

Fitting:

- Unroll material and lay flat to allow the roll curl to relax before fitting.
- **Do not cut full or net. Maintain a 1/4″ (6.4 mm) gap at all vertical surfaces.**
- Recommended fitting procedures include pattern scribing, straight scribing or freehand knifing.

Procedure:

If more than one piece of flooring is used, the pieces should be pattern matched and double-cut prior to placing the acrylic double-faced tape under the seam. The edges where the seam will be cut should be overlapped with a piece of scrap material underneath to protect the substrate while cutting through both pieces of flooring. It is important that the seam be cut in a straight line using a straight edge as a guide. The knife should be held completely vertical to put a clean 90-degree edge at the seam. Seams should be cut net, not full or snug as it can result in buckles.

Do not straightedge and butt seams as this can lead to loose and tight areas along the seam resulting in buckles or distortion. Also, do not try to stretch or compress material at the seam to obtain pattern match. This too can result in buckles or distortion.

Armstrong recommends an acrylic double-faced tape designed for use with vinyl flooring. Carpet tapes may read through and impact the final appearance of your floor. Ordinary carpet tapes may also cause discoloration of the flooring.

After the flooring has been properly fit and positioned in the room, gently fold back the seam edges and apply the acrylic double-faced tape, centered under the seam. Before removing the release liner from the top of the tape, use a clean cloth and hand pressure to thoroughly bond the tape to the subfloor. Then, remove the release liner from the tape and carefully reposition the seam for a net fit. Thoroughly roll the seam with a hand roller to complete the bond.

CAUTION:

Do not stand or walk on the release liner, as it is extremely slippery. Place it in a wastebasket immediately upon removal from the tape.

Tape may also be needed under relief cuts that were made to slip around pipes, etc. and at some doorways where transition moldings cannot be used. Do not overuse tape and do not tape around the entire perimeter of the room.

Replace or install wall base and quarter-round moldings to cover the gap around the perimeter of the room. Do not pinch the molding down on top of the flooring. Leave a slight clearance between the molding and flooring so any effects of seasonal movement in the home due to temperature or humidity changes will be minimized.

Armstrong S-564 Seam Coating Kit for low gloss floors must be used to coat any seams at the completion of the installation. **DO NOT** use S-585 Seam Cleaner on fiberglass-reinforced sheet flooring. The freshly applied seam coating must be protected for several hours from dirt, dust and traffic. Follow instructions on package.

Full Spread Method with S-289 Releasable Adhesive – See Releasable Adhesive Installation System.

Full Spread Method with S-288 Flooring Adhesive

Planning and Layout:

- Plan the layout so seams in the new flooring fall at least 6″ (15.2 cm) away from seams and joints in existing flooring and underlayments.
- Do not install over expansion joints.
- Remove wall base and quarter-round moldings if appropriate. (fiberglass-reinforced sheet flooring may be fit net when installed full spread using S-288 adhesive.)

Fitting:

- Unroll material and lay flat to allow roll curl to relax before fitting.
- Fiberglass-reinforced sheet flooring products are dimensionally stable. They should be cut net to vertical surfaces or slightly loose where they will be covered with molding or wall base. **Do not cut full or compression fit.**

■ Recommended fitting procedures include pattern scribing, straight scribing or freehand knifing.

Procedure:

If seams are involved, they should be double-cut dry prior to spreading adhesive in the seam area. Use a piece of scrap material underneath the seam when cutting. Do not straightedge and butt seams as this can lead to loose and tight areas along the seam resulting in buckles or distortion. Also, do not try to stretch or compress material at the seam to obtain pattern match. This too can result in buckles or distortion.

Use Full Spread adhesive method with S-288 Flooring Adhesive. Apply adhesive with fine notching of the S-891 Trowel [notching is 1/32″ (0.8 mm) deep, 1/16″ (1.6 mm) wide and 5/64″ (2 mm) apart]. It is important to use the correct trowel notching. Inspect and replace worn trowels frequently. Follow adhesive open time and working time recommendations on the adhesive label.

When installing over nonporous surfaces such as existing flooring and embossing levelers, allow enough time for the adhesive to dry until tacky with no transfer to the finger (dry-to-touch) before placing the material into it. This normally takes 30 minutes or more, depending on temperature and humidity. After the adhesive has reached this condition, there is at least one hour working time in which to install and roll the flooring.

When installing over porous surfaces such as concrete and wood, allow the adhesive enough open time to thicken slightly but not become completely dry-to-touch. Use the set-in-wet procedure for placing the material into the adhesive. The adhesive should be wet enough to transfer readily to the backing of the CushionStep. Keep in mind that the seam must also be laid into place before the adhesive has had a chance to set up over porous surfaces.

Adhesive Open Times and Trowel Notchings

Adhesive	Set-in-Wet for Porous Substrates	Dry-to-Touch for Existing Resilient Flooring and Other Nonporous Substrates
S-288	**Open Time:** Minimum 10–20 minutes **Fine Notch:** 1/32″ (0.8 mm) deep, 1/16″ (1.6 mm) wide, 5/64″ (2 mm) apart	**Open Time:** 30 minutes or more **Fine Notch:** 1/32″ (0.8 mm) deep, 1/16″ (1.6 mm) wide, 5/64″ (2 mm) apart

NOTE: Allowing proper open time will help to minimize knee marks, roller marks and trapped blisters. The amount of open time will vary according to job conditions—temperature, humidity, air flow and type of substrate.

Roll Thoroughly. Starting at the center and working toward the edges, roll in two directions using 100-lb roller. Seams must be hand rolled, then rolled again with a 100-lb roller. Give special attention to cleaning adhesive residue from the seam areas as they must be clean and dry in order to proceed with seam treatments. Clean excess adhesive from the surface of the flooring using a clean, white cloth dampened with detergent and water. Mineral spirits will remove dried adhesive residue.

Replace or install wall base and quarter-round moldings as needed. Fasten molding to the vertical surface. Do not nail through the new floor.

Armstrong S-564 Seam Coating Kit for low gloss floors must be used to coat any seams at the completion of the installation. **DO NOT** use S-585 Seam Cleaner on fiberglass-reinforced sheet flooring. The freshly applied seam coating must be protected for several hours from dirt, dust and traffic. Follow instructions on package.

Precautions for All Installation Methods:

- When moving appliances or heavy furniture, lay a plywood panel on the floor and "walk" the item across it. This protects the floor from scuffing and tears.
- Use floor protectors, such as Armstrong Floor Protectors, on furniture to reduce indentation. The heavier the item, the wider the floor protector needed.