

Installation Guide for Resilient Flooring

**TOUGH GUARD II INSTALLATION INSTRUCTIONS**

Product	Gauge	Adhesive	Comment
StrataMax Good	0.065" (1.65 mm)	Modified loose lay method: Acrylic double-faced tape, S-295, S-299	Seams: Double cut
StrataMax Better	0.070" (1.78 mm)	Full Spread Adhesive method: S-295, S-299	Seam treatment: Apply S-500 Seam Coating or S-761 Seam Adhesive
StrataMax Best	0.085" (2.16 mm)		

**Installation:** All Grade Levels

**Pattern Match:** Yes; do not reverse pieces of patterned material (TM edge to non-TM edge)

**Seam Method:** Double-cut

**Seam Treatment:** Apply S-500 Seam Coating or Armstrong Flooring S-761 Seam Adhesive

**Fitting:** All Methods

**Information**

ToughGuard II flooring can be installed by three installation methods. It is designed as a floating floor when installed by the modified loose lay installation method using only acrylic double-faced tape under the seams. The modified loose lay method requires that the flooring be cut 1/8" (3.18 mm) to 3/16" (4.76 mm) away from all vertical surfaces such as walls, cabinets, pipes, etc. This gap must then be filled and the edges sealed with a good quality silicone or acrylic caulk.

**Key to a Successful Installation**

- Proper conditioning of both the jobsite and the flooring is necessary. Do not expose the installation to wide ranges in temperature and moisture/humidity levels in the home.
- Store, transport and handle the flooring so as to prevent 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, unroll flooring so it can acclimate to jobsite conditions. Allow the roll-up stresses to relax and the flooring material to flatten out.
- Undercut door trim to allow for free movement of the flooring.
- Island cabinets are permissible on top of the flooring but perimeter base cabinets should be cut around as noted above.
- 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.

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- Do not compress the edges of the sheet in any way when installing adjacent flooring materials. Installation of carpet, metal strips and other transition moldings should not push fullness into the flooring.
- Always protect flooring from rolling loads from other trades and replacement and/or movement of appliances.
- 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.

### PRECAUTIONS

- Do not wash or scrub the new flooring for at least 5 days after the installation. This will help prevent excess moisture and cleaning agents from interfering with the bond of the fresh adhesive or vinyl flooring tape.
- 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 on furniture to reduce indentation. The heavier the item, the wider the floor protector needed.
- The flooring material should not be exposed to sudden changes in temperature and moisture/ humidity. The site needs to be closed in with HVAC operating. In new construction, do not power wash the basement and introduce excessive moisture to the subfloor above after the flooring has been installed.
- ToughGuard II materials need to be protected from rolling loads and construction traffic by other trades. Kitchen cabinets, water heaters, furnaces and other appliances being hauled over the flooring can cause problems if not protected with boards.

**WARNING: EXISTING IN-PLACE RESILIENT FLOOR COVERING AND ASPHALTIC ADHESIVES. DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC “CUTBACK” ADHESIVE, OR OTHER ADHESIVE.**

These **existing in-place products** may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the existing in-place product is a non- asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern removal and disposal of material.

See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for instructions on removing all resilient floor covering structures or contact your retailer or Armstrong Flooring Inc. 1-800-233-3823.

*The floor covering or adhesive in this package does NOT contain asbestos.*

	Modified Loose Lay	S-295, S-299 Flooring Adhesive
Spacing (gap) at vertical surfaces (walls, pipes, etc.)	1/8" (3.2 mm) to 3/16" (4.8 mm)	None
Base cabinets on top of flooring	Yes	Yes

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Island cabinets on flooring	Yes	Yes
Bathrooms	Yes	Yes
Stairs, landings or rooms with floor drains	No	Yes
Seams on suspended wood underlayments	Multiple OK	Multiple OK

### Subfloors & Substrates

All substrates listed below must be properly prepared and meet certain requirements discussed in Subfloors and Underlayments category. There may be certain exceptions and special conditions for these substrates to be suitable for the ToughGuard II Installation System.

- Concrete (on all grade levels)
- Polymeric poured (seamless) floors
- Approved suspended wood
- Approved suspended single layer wood subfloor system (modified loose lay installation only)
- Single-layer, fully adhered, existing resilient floors

NOTE: For wood subfloors and underlayments, the moisture content must be 13% or less.

### DO NOT INSTALL OVER:

- Particleboard or waferboard panels
- Carpet
- Existing resilient tile floors that are below grade
- Hardwood flooring that has been installed directly over concrete
- Existing cushion-backed vinyl flooring

ToughGuard II materials can also be installed directly over suspended single-layer wood subfloors such as plywood or oriented strand board (OSB) when using the modified loose lay method. The subfloor system must be designed to meet or exceed applicable building codes with a minimum of 18" (45.7 cm) well ventilated air space below. It must be installed according to the subfloor manufacturer's recommendations. The moisture content must be 13% or less for direct installation of ToughGuard II materials.

The subfloor panels must have a smooth, sanded face and show no swelling of edges or surface due to exposure to weather conditions or construction traffic. "Base grade" subfloor panels are not recommended as they generally do not provide a sanded face or the moisture resistance of "better" and "best" grade panels. The panels cannot be contaminated by staining agents. Otherwise, an additional 1/4" (6.35 mm) or thicker underlayment is recommended. Single-layer wood subfloors increase the potential for staining from the panel components, coated nails, construction adhesives, spills, overspray and show-through from texture and mechanical or water damage when resilient flooring is installed directly over them.

### Job Site 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

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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.

- Substrates must be sound, dry, clean, smooth and free from excessive moisture or alkali.
- 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.
- 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 fully adhering flooring over an existing resilient floor, use S-194 Patch, Underlayment & Embossing Leveler/S-195 Underlayment Additive to fill and smooth any embossing in the old floor.
- With modified loose lay method, typical embossing of rotogravure floors (less than 3/16" [4.76 mm] wide and less than 1/32" [0.8 mm] deep) would not show through and would certainly not cause performance problems. Deeper embossing such as on old inlaid Designer Solarian floors, deeply embossed tile floors, and ceramic tile grout joints should be leveled even for the loose lay method.
- The area to receive resilient flooring and the flooring materials and adhesives should be maintained at a minimum of 65° F (18° 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 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.

### Fitting

- Recommended fitting procedures include pattern scribing, straight scribing and freehand knifing.
- Do not cut full or compression fit.

### Planning and Layout

- Plan the layout so seams in the new flooring fall at least 6" (15.24 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.
- Do not install over expansion joints.

### Armstrong Flooring cannot be responsible for

- Joint or texture show-through.
- Tunneling and ridging over board joints.
- Discoloration from stain sources in the panel, regardless of the type of panel used.
- Problems caused by local climate conditions, basement wall and subfloor construction, or improper installation.

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**Modified Loose Lay Method**

**Keys to Successful Modified Loose Lay Installation over OSB**

- Not all subfloors will be suitable for direct installation. The builder basic panel is generally not sanded and will have poor resistance to moisture exposure leading to swollen edges, flake pops and general gauge and fastener issues.
- Use subfloors with a smooth sanded face and properly installed with recommended joint spacing. Most boards are designed to have 1/8" (3.18 mm) gap at joints.
- Do not use staining agents such as plumber's primer or construction adhesives on surface.
- Do not take short cuts in timing of installation or conditioning the home. Follow standard vinyl recommendations for conditioning of both jobsite and flooring materials.

**Keys to Successful Modified Loose Lay Installation**

- Tape may 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.
- Multiple seams are allowed when this method is used over concrete subfloors. 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.

**Adhesive Open Times and Trowel Notchings**

Adhesive (Modified Loose Lay Installation)		Dry-to-Touch for all Substrates
S-295, S-299 Adhesive 2" (5.08 cm) to 3" (7.62 cm) wide band under the seams		Open Time: 30 minutes or more Fine Notch: 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 1/32" (0.8 mm) apart

**Procedure**

This type of flooring is designed for modified loose lay installation using acrylic double-faced tape, S-295 or S-299 at seams and other critical areas. In bathrooms, the acrylic double-faced tape, S-295 or S-299 adhesive should be used to secure the flooring in front of tubs and shower enclosures. Other critical areas could be a doorway where trim cannot be used to cover an exposed edge or an area in the kitchen with a heavy movable appliance. *Do not use the acrylic double-faced, S-295 or S-299 Adhesive around the entire perimeter of the room.*

The small gap allowed around all vertical surfaces provides enough space where caulk must be used to seal the edges to prevent moisture from getting underneath the new flooring. All edges must be sealed with a good quality siliconized or

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acrylic caulk, even in areas where trim moldings or vinyl wall base will be put on top. ToughGuard II flooring should not be cut full or snug. Make sure all areas are lying flat before applying caulk in the perimeter gap.

**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.**

### 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, S-295 Adhesive or S-299 Adhesive under the seam.
- When installing with S-295 or S-299 Adhesive, cut seams dry then apply adhesive.
- 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° edge at the seam. Seams should be cut net, not full or snug as it can result in buckles.

### S-500 Seam Coating (Seam Treatment)

- 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, S-295 Adhesive or the S-299 Adhesive centered under the seam. When installing with the tape method, 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.
- S-500 Seam Coating Kit may be used to coat the seams at the completion of the installation.
- Prepare the S-500 Seam Coating as per instructions.
- Practice applying the coating on scrap material to get a consistent 1/8" (3.18 mm) wide bead of coating.
- Tilt the applicator to an angle of about 30° while applying coating.
- Do not attempt to insert the nozzle into seam.
- Apply 1/8" (3.18 mm) wide bead of coating centered on top of seam.
- The freshly applied seam coating must be protected for several hours from dirt, dust and traffic. Follow instructions on package.

### S-761 Seam Adhesive (Seam Treatment)

- Acrylic Double-faced Tape: Double cut the seam before applying the tape.
- S-289 Releasable & Permanent Flooring Adhesive: Apply S-289 Adhesive at the seam and let go dry-to touch prior to cutting the seam.
- S-288 Flooring Adhesive: Cut seams dry and then apply the adhesive allowing proper open time before setting material into the adhesive.
- After applying the tape or after proper open time for the adhesive place one side of the material back down.
- Using the S-761 applicator bottle, apply a 1/8" (3.18 mm) bead of S-761 Seam Adhesive along the seam edge.
- Tuck the seam edge into place, forcing the S-761 Seam Adhesive up through the seam.
- Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with neutral detergent and water.
- Roll the seam using a hand roller.

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**NOTE:** S-761 Seam Adhesive is highly recommended for patterns that do not contain grout lines. 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.

### **Full Spread Method with S-295 or S-299 Flooring Adhesive**

#### **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.

**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.

#### **S-761 Seam Adhesive (Seam Treatment)**

- Double cut the seam before applying adhesive to the seam area. Leave 1-2 feet back from the edge of the seam area after full spreading adhesive on floor.
- Place one side back down.
- Using the applicator bottle, apply a 1/8" (3.18 mm) bead of the S-761 Seam Adhesive along the seam edge.
- Tuck the seam edge into place, forcing the S-761 Seam Adhesive up through the seam.
- Clean adhesive residue from the surface of the flooring using a clean, white cloth dampened with neutral detergent and water.
- Roll the seam using a hand roller.
- Then starting at the center and working toward the edges, roll the flooring in two directions using a 100-lb. roller.

#### **S-500 Seam Coating (Seam Treatment)**

- Starting at the center and working toward the edges, roll in two directions using a 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 the application of S-500 Seam Coating. 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.
- The freshly applied seam coating must be protected for several hours from dirt, dust and traffic. Follow instructions on package.
- Replace or install wall base and quarter-round moldings as needed. Fasten molding to the vertical surface. Do not nail through the new floor.

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