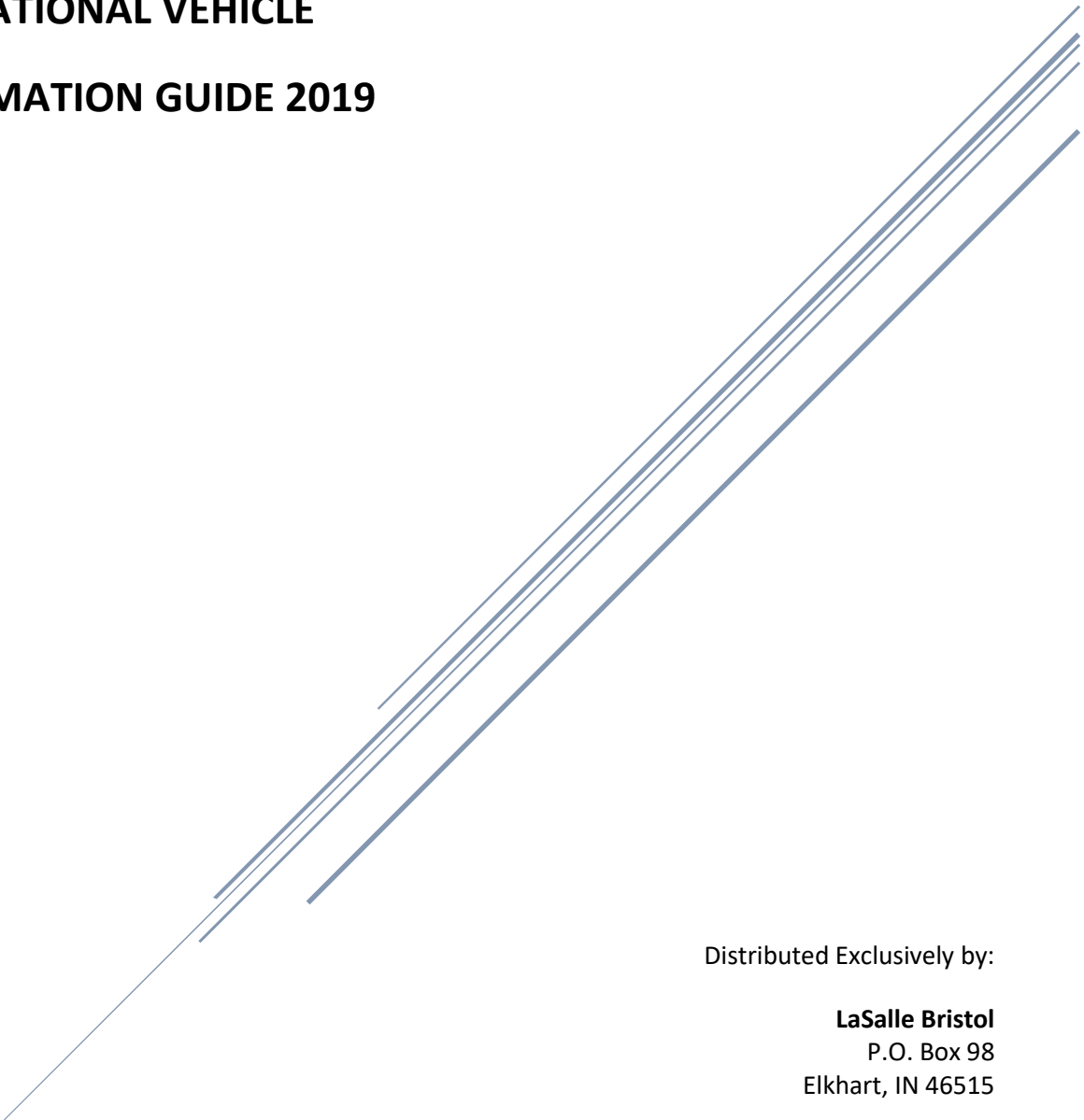




**MANUFACTURED AND
MODULAR HOUSING
RECREATIONAL VEHICLE
INFORMATION GUIDE 2019**



Distributed Exclusively by:

LaSalle Bristol
P.O. Box 98
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CONGOLEUM FLOORING PRODUCTS

Congoleum currently offers four exclusive products for the Manufactured Housing, Recreational Vehicle, and Modular markets. They include Diamondflor®, LuxFlor™, Designer Carefree® and ArmorFlor™.

Each one of these products has been uniquely constructed and designed with the industries' special requirements in mind.

Diamondflor, the most specified product, has become the standard for our customers and is available in seamless widths up to 15'6".

LuxFlor incorporates the UltraShield wearlayer with Scotchgard Protector for exceptional durability and the best-looking, most authentic designs in the industry. The low energy additive gives the product built-in resistance to soil, dust and stains.

Designer Carefree provides the features and benefits of LuxFlor in the widths required for recreational vehicles.

ArmorFlor offers the perfect balance of value and durability. The combination of a tough PVC wear layer with White Shield® backing has proven successful in the manufactured housing industry for decades.

For special and unique looks, Congoleum manufactures an extensive retail and commercial sheet and tile flooring line. For more details on the entire Congoleum line, ask your LaSalle Bristol sales representative for the latest design brochures.

All Congoleum sheet floors are manufactured using White Shield® felt, a felt backing developed and produced by Congoleum, making our sheet flooring products 100% American-made. Since its development, our felt has become the finest and most widely accepted flooring felt in the industry. It is a highly flexible white felt that contains no asbestos materials, and its flexibility resists cracking and fraying, making installation trouble-free.

PRODUCT SPECIFICATIONS

Product	Construction	Packaging		Shipping Weight	
		Available Widths	Average Roll Size	Per Yard	Avg./ Roll
Diamondflor	ArmorGuard Construction Wearlayer: Vinyl Resin Cushion: High Density Vinyl Foam Backing: White Shield Filled Fibrous Composition	96"	500 sq yd.	2.6 lbs.	1,300 lbs.
		102"	580 sq yd.		1,510 lbs.
		13'6"	640 sq yd.		1,665 lbs.
		15'6"	640 sq yd.		1,665 lbs.
LuxFlor	UltraShield Construction Wearlayer: Vinyl Resin and Urethane Reinforced with Nylon and Aluminum Oxide Cushion: High Density Vinyl Foam Backing: White Shield Filled Fibrous Composition	13'6"	520 sq yd.	2.9 lbs.	1,510 lbs.
		15'6"	560 sq yd.		1,625 lbs.
Designer Carefree	UltraShield Construction Wearlayer: Vinyl Resin and Urethane Reinforced with Nylon and Aluminum Oxide Cushion: High Density Vinyl Foam Backing: White Shield Filled Fibrous Composition	96"	530 sq yd.	2.9 lbs.	1,540 lbs.
		102"	580 sq yd.		1,680 lbs.
ArmorFlor	ArmorGuard Construction Wearlayer: Vinyl Resin Cushion: High Density Vinyl Foam Backing: White Shield Filled Fibrous Composition	13'6"	530 sq yd.	2.1 lbs.	1115 lbs.
		15'6"	500 sq yd.		1050 lbs.

PRODUCT SPECIFICATIONS

FEDERAL SPECIFICATIONS

		TEST RESULTS			
FEDERAL TEST	REQUIREMENT	LUXFLOR	DIAMONDFLOR	DESIGNER CAREFREE	ARMORFLOR
ASTM E-648	.45 watts/cm ² or more	Class 1	Class 1	Class 1	Class 1
ASTM E-662	450 or less	Pass	Pass	Pass	Pass
ASTM F-1303	Various	Type 1	Type 1	Type 1	Type 1
		Grade 2	Grade 3	Grade 2	Grade 3
		Class A	Class A	Class A	Class A
FVMSS / CMVSS 302	4"/minute or less	Pass	Pass	Pass	Pass

ASTM - F1303 DEFINITIONS

- Type I - Minimum 90% binder content in wearlayer
- Type II - Minimum 34% binder content in wearlayer

Grade: Refers to minimum wearlayer thickness

- Grade 1 - 0.020"
- Grade 2 - 0.014"
- Grade 3 - 0.010"

Class: Refers to the backing

- Class A - Fibrous, non-asbestos backing (felt)
- Class B - Non-foamed plastic backing
- Class C - Foamed plastic backing

Overall Thickness: All Congoleum products sold to the Manufactured Housing / Recreational Vehicle industries are a minimum of 0.055".

**CONGOLEUM INSTALLATION
SUNDRY PRODUCTS**

Adhesive

	UnderFlor 3044 Premium Flooring Adhesive
Order Code:	03044 - White Shield® Felt Backing
Use	Diamondflor / Designer Carefree / LuxFlor / ArmorFlor
“Your Choice” Installation	All floors can be perimeter fastened or fully adhered
Tracers	Royal Blue/Silver
Advantages	Moisture and alkali resistant, hard setting, resists indentations; non-staining.
Type	Water based; Latex
Subfloors	All decking currently approved for use in the in the industry.
Trowel or Roller	1/16” wide x 1/32” deep x 1/32” apart, all substrates; or ¼” nap roller.
Working Time	15 - 20 minutes
Spread Rate	Fully Adhered: 150 to 270 sq. ft. /gallon Perimeter: 4 inch band – 750 lin. ft. /gallon Perimeter: 6 inch band – 500 lin. ft. /gallon Seams: 8 inch band – 375 lin. ft. /gallon.
Freeze/Thaw Stable	Yes
Flammability	Nonflammable
Cleanup	Wet: Soap and water; Dry: Clean cloth dampened with mineral spirits.
Shelf Life	One year if unopened.
Sizes	Quart (12/carton) / 1 gallon (4/carton) / 4 gallon

3044 Adhesive - WARNING: Eye and skin irritant.

Seam Sealers

Seam Sealer	SU92 (Liquid Only)	SU80 (Kit)
Use On	Diamondflor, ArmorFlor LuxFlor (Peel Bead) Designer Carefree (Peel Bead)	Diamondflor, ArmorFlor LuxFlor (Peel Bead) Designer Carefree (Peel Bead)
Tack Free	20 minutes	20 minutes
Set-Up Time	2 hours	2 hours
Coverage	200 lin. ft.	50 lin. ft./kit
Cleanup	Wet: Blot with cloth dampened with mineral spirits.	Wet: Blot with cloth dampened with mineral spirits.
Shelf Life	1 year if unopened	1 year if unopened
Sizes	8 fl. oz. can (48 cans/ctn.)	2 fl. oz. per kit (12 kits/ctn.)

SU92 and SU80 - WARNING: Flammable liquids; vapor harmful; eye and skin irritant.

FLOOR CARE PRODUCTS

Congoleum has developed a complete line of residential and professional floor care products to help keep its floors looking beautiful year after year. These products are available in sizes to meet every requirement.

RESIDENTIAL

03001 Bright 'N Easy No-Rinse Cleaner

03002 Bright 'N Easy (High Gloss) Floor Polish

03003 Bright 'N Easy Polish Remover

03007 Bright 'N Easy Satin Gloss Floor Polish - For use on Diamondflor

Packaging:

32 oz. (1 quart) – White plastic container; 12 bottles/carton

128 oz. (1 gallon) – 4 bottles/carton

Seam Tape

Especially formulated high grab double-face tape for use in repairing sheet flooring installed using the perimeter installation method.

Product: QuikStik Tape – QS120

Packaging: 12 rolls/carton

Roll Size: 2 1/2" x 120' roll

Weight: 6 lbs./carton

Repair Adhesive

Specially formulated adhesive/sealer designed for repairing small cuts and gouges in Congoleum flooring that has been installed using the perimeter fasten method

Product: Bond & Seal – BSL14

Packaging: 6 units / carton

Weight: 2.3 lbs. / carton

	Bond and Seal
Order Code:	BSL14
Unit Size	4 ounce container (6 units per carton)
Description	Water based synthetic latex repair adhesive
Use	Recommended for repairing Congoleum felt-backed floors
Limitations	Not recommended for vinyl foam-backed floors or large section repairs
Coverage	One unit covers 15 to 20 repairs
Working Time	20 Minutes
Set Up Time	1 Hour
Initial Cure Time	12 Hours
Clean-Up	Wet – water, dry – not removable
Color	White, dries clear
Shelf Life	2 years if unopened
Freeze Thaw Stable	Yes, 5 cycles of 0°F
Flammable	Non-flammable

EXAMINING SPECIFICATIONS

Examining Specifications

Products: DiamondFlor, ArmorFlor, LuxFlor and Designer Carefree

Roll Size: Jumbo

Regular Classification

Material in this classification shall have satisfactory physical condition, including satisfactory registration, correct overall thickness, and complete surface coverage with wearlayer. There shall be a satisfactory bond between the foam and backing material and between the wearlayer and printed surface. The texture, gloss, and design, including color of the material, are to compare favorably with the approved Shade One Standard.

Specific Restrictions

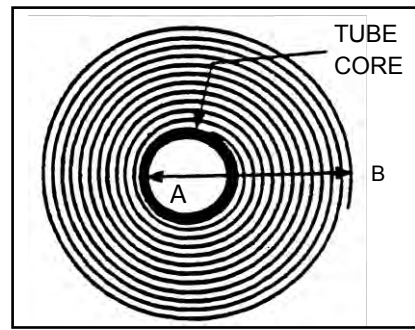
1. Defective material in each roll may not exceed 10 linear feet in total.
2. There may be no more than 5 defects per roll, which shall be apparent from a standing height.
3. Any spot defect must be counted as a minimum of one foot in length.
4. Defects must be at least 50 feet apart.
5. Defects include mis-register, no wearlayer, air streaks, wrinkles, contamination, gel streaks, holes, edge cutouts, ink streaks, dropouts, and other blemishes which significantly affect appearance or serviceability.
6. Pieces are limited to 5 per roll. Each splice must be counted as a defect.
7. Defects less than 2 inches from either edge of the printed sheet need not be considered.

Estimating Yardage in Rolls of Flooring

Occasionally, it may be necessary to determine the amount of floorcovering remaining in a roll. A reasonably accurate estimate can be obtained by using the following procedure:

1. Roll must be tightly wound.
2. Measure inches from outer lap (B) of roll to far side of core (A). See figure below. If measurement results in a fraction of an inch, be sure to include the fraction.

Example: $10 \frac{1}{2}'' = 10.5''$



3. Count the number of turns in the roll.
4. The next step is to multiply the core to outer lap measurement by the number of turns.
Example: If measurement (A to B) is $13 \frac{1}{2}''$ and there are 12 turns, multiply $13.5 \times 12 = 162$.
5. To obtain the number of square yards, take the answer (162) and multiply it by the applicable factor below.

For 84" material, use .204
For 96" material, use .238
For 102" material, use .247
For 13'6" material, use .394
For 15'6" material, use .452

Example: $162 \times .394 = 63.8$ square yards.

GENERAL STORAGE AND HANDLING

All Congoleum products developed for the Manufactured Housing, Modular Housing and Recreational Vehicle industries are designed to reduce or eliminate common problems associated with construction. Developing good storage and handling practices will help make installation easier and trouble-free.

Storage: Plant Warehouse

Jumbo rolls of flooring should be warehoused in an area that is protected from the elements and not subject to freezing temperatures. Vinyl that is frozen will become brittle, crack easily and craze the wearlayer.

Jumbo rolls should be stored on a solid, flat, dry surface. If rack storage is utilized, continuous floor support should be provided so that the roll does not sag.

IN ORDER TO AVOID DISTORTION, COMPRESSION, AND DAMAGE TO THE FACE OF CONGOLEUM SHEET FLOORING, THE FOLLOWING MAXIMUM STORAGE HEIGHTS SHOULD BE ADHERED TO.

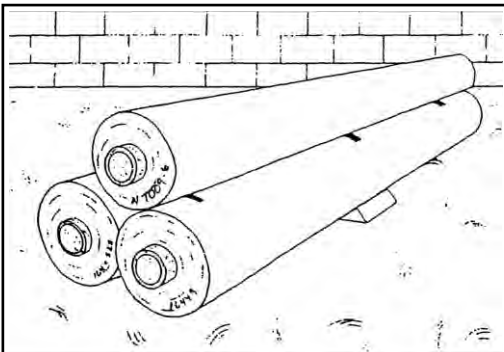
MAXIMUM STORAGE HEIGHT	
PRODUCT	JUMBO ROLLS
LuxFlor	2 Rolls
Diamondflor	2 Rolls
Designer Carefree	2 Rolls
ArmorFlor	2 Rolls

If chocks are used, be sure they are triangular and at least 24" long. Do not use square edge wood (e.g. 2 x 4's).

Improper warehousing can cause distortions in the floorcovering which are difficult to flatten. In severe instances, it may be impossible to flatten the floorcovering.

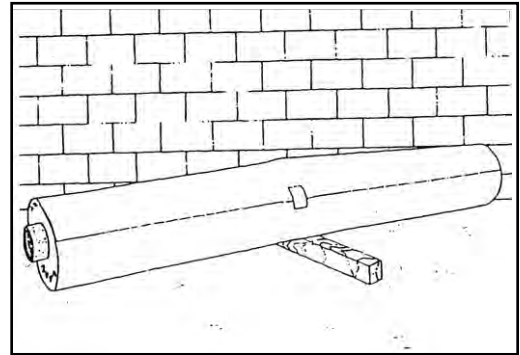
Regular inspection of the rack for loose nails, screws and debris will prevent potential damage.

RIGHT



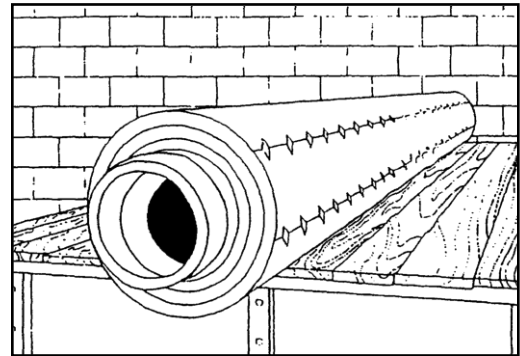
Properly stored on flat floor

WRONG



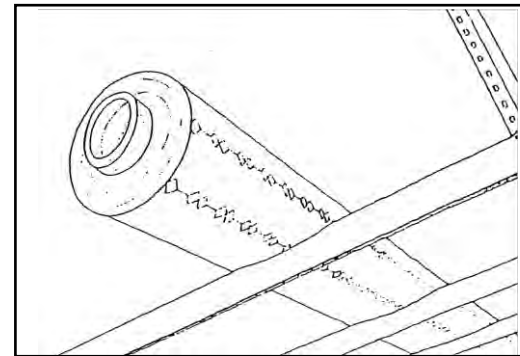
4" x 4" in middle of roll

RIGHT



Properly stored on planked storage rack

WRONG



Storage on rack which has no floor

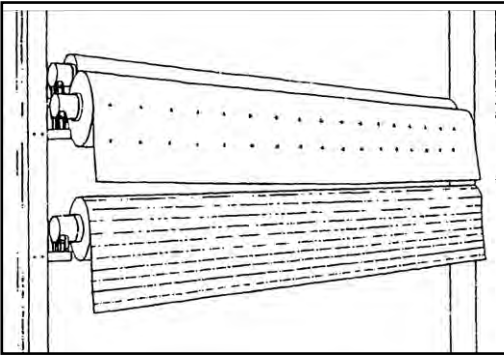
Storage: Floor Department

The storage rack in the flooring department should be strong enough to support rolls weighing 2500 pounds.

For best support, the pipe placed into the cardboard core should be a 5" schedule 120 steel pipe.

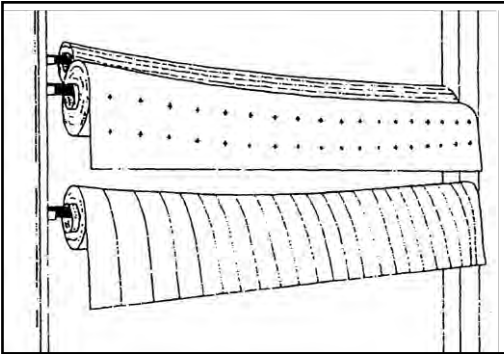
A bearing or pipe roller system is recommended for easy unwind. This will result in fewer tear-offs and distortions. **NOTE:** A braking system is recommended.

RIGHT

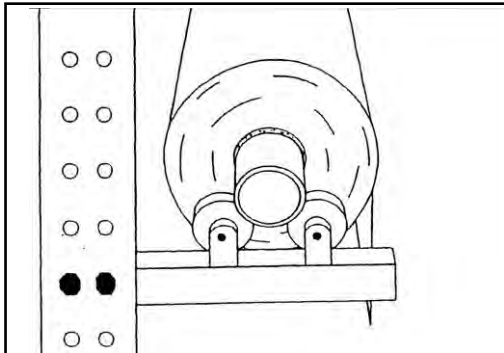


Properly supported rolls

WRONG



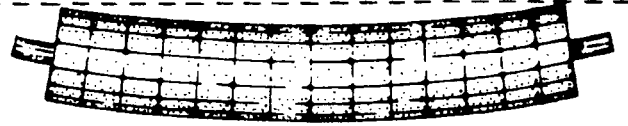
Sagging rolls



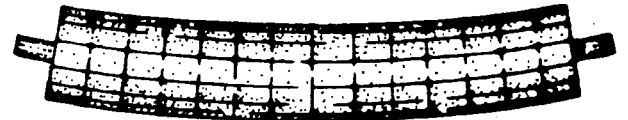
Recommended Pipe/Roller System

Measure the Deflection

Using the correct pipe on the unwind rack can save time and help eliminate roll set waves associated with cold weather. Check the size and schedule of the pipe you are currently using and measure the deflection with a full jumbo roll of sheet vinyl. If the deflection is greater than 1/4", there is a greater chance that installation difficulties and buckles will occur in cold temperatures.



Full Jumbo = approx. 2000 lbs. (X = Deflection)



Using a 4" (4.50 O.D.) Schedule #80 standard seamless steel pipe (X = 3/4")



Using a 4" Schedule #160 (X = 5/8")



Using a 5" (5.563 O.D.) Schedule #120 (X = 1/4")

Handling: Tow Motor

Jumbo rolls should always be loaded, unloaded and transported using a 12'3" long/3" outside diameter carpet boom.

Minimize the distance jumbo rolls are transported on carpet booms. Moving jumbo rolls (particularly 15'6" over rough and uneven surfaces, as well as long distances (across yard), may distort the floor-covering.

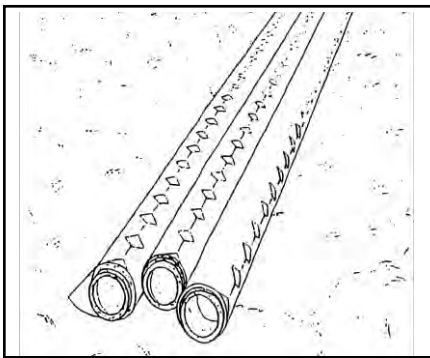
Handling: Installation

Caution must be exercised so the flooring is not distorted or kinked before it is installed. Always roll cut pieces of flooring face out whenever possible.

Rolling the material **face in** (even for short periods of time) will cause the floorcovering to compress. If the material is not allowed to relax (return to its original size) prior to fastening, buckles will occur.

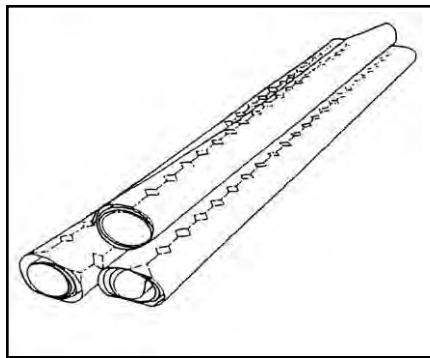
Pieces cut from a jumbo roll in advance of an installation must be tightly rolled FACE OUT onto a rigid, straight cardboard core or a large diameter PVC pipe. This will eliminate the possibility of roll-set waves being caused due to the floor covering becoming egg-shaped or flat while in rolled form. Additionally, the possibility of kinking or bending the flooring while in roll form will be eliminated. A little time spent in precautionary measures to eliminate distortions will be more than repaid in ease and quickness of installation.

RIGHT



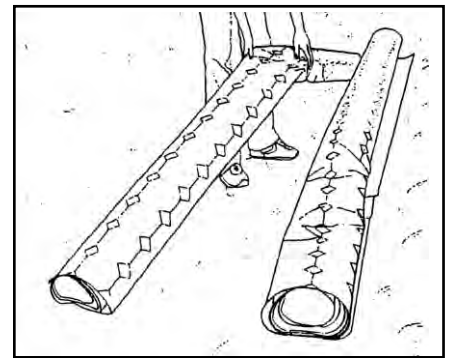
Flooring tightly wound on core

WRONG



Egg shaped rolls

WRONG



Kinked rolls

Installation Temperature

For the best and easiest installation, a minimum temperature of 68°F is recommended. If extra rolls of flooring are stored in temperatures below 50°F, it is recommended that these rolls be acclimated by positioning them in a warmer location close to the unwind rack for at least 48 hours prior to use. If heat is applied to acclimate the flooring, it must be distributed evenly at the recommended temperature of 68°F. Uneven or excessive heat can result in installation problems. Additionally, it is important to acclimate the decking that the floorcovering will be installed over.

For the best installation results, the installation temperature should be maintained for 48 hours prior to and for 48 hours after the completion of the installation.

Extreme Cold

Sheet vinyl flooring is designed to provide good installation and performance benefits at moderate temperatures (50°F to 90°F). Once temperatures fall out of this range, the vinyl characteristics change.

At cold temperatures, the vinyl is stiff and it will be much harder to apply the correct amount of tension during installation. It will also be more prone to crazing or cracking. At high temperatures, it becomes limp, is prone to gouging, and may discolor. Damage to sheet vinyl flooring (i.e. cold cracking) due to extreme temperatures is not a defect in the flooring material.

Cold Weather Checklist

Use the “Cold Weather Checklist” to remind the personnel associated with handling sheet vinyl of the importance of good handling, storage, and installation procedures.

Some improper installation, storage, and handling procedures that you can get away with in warm weather will almost definitely cause problems in cold weather. It is imperative that all Congoleum recommended installation, storage, and handling procedures are used in cold weather. Use this checklist below of the most critical procedures to assure problem-free cold weather installation.

INSTALLATION

- Always roll the floorcovering **FACE OUT**... never roll it face in.
- Do not overstretch; simply pull the floor-covering taut.
- Make sure all cut-outs are fit net and there are no stress points around pipes and opening.

STORAGE

- Do not store floorcovering below 32°F. It will become brittle and, if put under stress, will split, crack and/or craze.
- Keep floorcovering and decking at a minimum of 50°F for at least 48 hours prior to installation and during installation.
- Do not subject installed floorcovering to sudden wide temperature swings.
- Do not overheat or concentrate heat in one area of the floorcovering or decking.
- Monitor the decking to assure it has not been shipped to you while still hot.
- Store floorcovering on a flat, dry surface.

HANDLING

- Always use a carpet boom to move rolls. **NO FORKS**.
- Always roll floorcovering on a core to avoid bending.
- Never roll floorcovering face in.

Moving Appliances or Heavy Furniture

Never attempt to slide heavy items without protecting the floorcovering. After the flooring has been installed, all appliances or furniture which cannot be carried should be positioned in the room by sliding on strips of hardboard. This includes items equipped with rollers (such as refrigerators) and items moved on dollies with rolling wheels. One-quarter inch tempered hard-board (or plywood) sawed into 1' x 4' strips works well for this purpose. Four strips will be required.

Writing on Sheet Flooring

Use only lead pencils for writing on flooring. **DO NOT USE** ballpoint pens, felt-tipped markers, or waxed crayons to write on Congoleum floors. Use caution when marking decking because these writing instruments may transfer onto the floorcovering causing the floor to discolor. Additionally, the stamp grading mark on decking may transfer to the back of the sheet causing discoloration at a later point. Some decking edge sealants have also been known to discolor floorcovering.

Compression Marks

Compression marks/lines are caused when the foam cellular structure of the flooring has all the air forced out of it, similarly to the way a sponge flattens when left to dry under a flat surface. When the sponge is again filled with air and water, it returns to its original shape. The same thing is true with cushioned flooring. Once the foam structure is allowed to fill with air, the flooring will return to its original texture.

The process on how quickly the compression disappears depends on the temperature and how severely the floor is compressed. One way to accelerate the recovery is to apply heat using a heat gun in a circular motion over the compressed area. This will force air into the foam layer of the flooring. Keep the heat gun 2-3 inches above the flooring to prevent burning the surface.

Compression is not considered a manufacturer defect and does recover. It is our recommendation that the flooring is installed and the compression be allowed to recover naturally.

Protecting the Flooring from Damage

During the completion of the home, preventive measures should be taken so that damage to the flooring is eliminated, or held to an absolute minimum. A protective layer of heavy paper laid on top of the flooring is beneficial. However, rubber floor matting will maximize the protection. Additionally, the matting can be cleaned and reused.

Care and good housekeeping practices by workers in the departments will go a long way in helping eliminate damage. Important points are: Do not slide walls, cabinets, fixtures, etc. on the flooring during construction; they should be carried into place. The floor should be kept clear of screws, nails and other sharp items. When dropped, workers should pick them up because when walked on, cuts to the wearlayer will occur even if heavy paper is laid over the flooring. Appliances such as stoves, dishwashers, refrigerators, etc. should never be slid on the flooring. Move these items into place by sliding them on strips of plywood or hardboard, or use a hand truck.

INSTALLATION RECOMMENDATIONS

Perimeter Fastened Installation Method for Housing and Recreational Vehicles

Congoleum products for the Manufactured Housing and Modular Home industries are tough, durable products designed to be perimeter fastened for a fast, economical installation. Our products are suitable for seamless installation in home sections up to 16' wide.

The recommended installation method for these products is perimeter fastening with staples. In addition to being the easiest and quickest installation method, perimeter fastening is economical because it saves time and money. There are cost savings in adhesive requirements and time savings in adhesive application. Perimeter fastening also allows less subfloor preparation and it minimizes subfloor joint show-through.

Following are instructions and recommendations for an efficient, trouble-free installation. Subfloor preparation, sanding, filling subfloor joints, and protection of the flooring from damage are the same as in the "Fully Adhered Installation Method" section. **If the home is going to be subjected to prolonged periods of cold temperatures, the recommended procedure is the fully-adhered installation method.**

Moisture Areas

Areas that are subject to moisture and all openings such as pipes, heat registers, etc. must have a four inch (4") band of a water resistant latex adhesive (i.e. UnderFlor 3044) applied around the perimeter. This should be done just before the flooring is unrolled onto the deck. It is important that there is a good transfer of adhesive sealing the floorcovering to the decking. This will prevent any migration of water under the floorcovering. Additionally, this will also prevent the billowing of the floorcovering around heat registers. The easiest way to insure a good transfer is to staple the floorcovering into the wet adhesive. Around heat registers, care should be taken so that the staples are covered by the register flange.

Installation Procedure

Unroll the flooring on the deck of the home. Make accurate cut-outs for pipes or other protrusions above the deck. Flooring flaps should be cut away so they do not press against protrusions. This will allow the flooring to lay flat. **Allow a few moments for the flooring to relax (flatten).** Once the flooring has relaxed, follow the recommended stapling procedure.

Stapling Procedure

(See next page for stapling procedure diagram) Place all staples about 4" apart and in an area where they will be covered by a wall or other flooring material (generally carpet.)

Step 1: Start at one corner of the deck and secure the flooring in place using several staples. (**NOTE:** Minimum staple size 1/2" crown and 1/2" leg.) The staple gauge must be heavy enough to penetrate the decking material without bending. **For RVs** with wheel wells, start at one end of the deck just to the inside of the wheel well.

Step 2: Move to the opposite end of the deck and pull the flooring taut along the length, then staple the corner in place. **For RVs**, pull directly away from where the flooring is secured, just to the inside of the wheel well.

Step 3: Staple the flooring along the entire side.

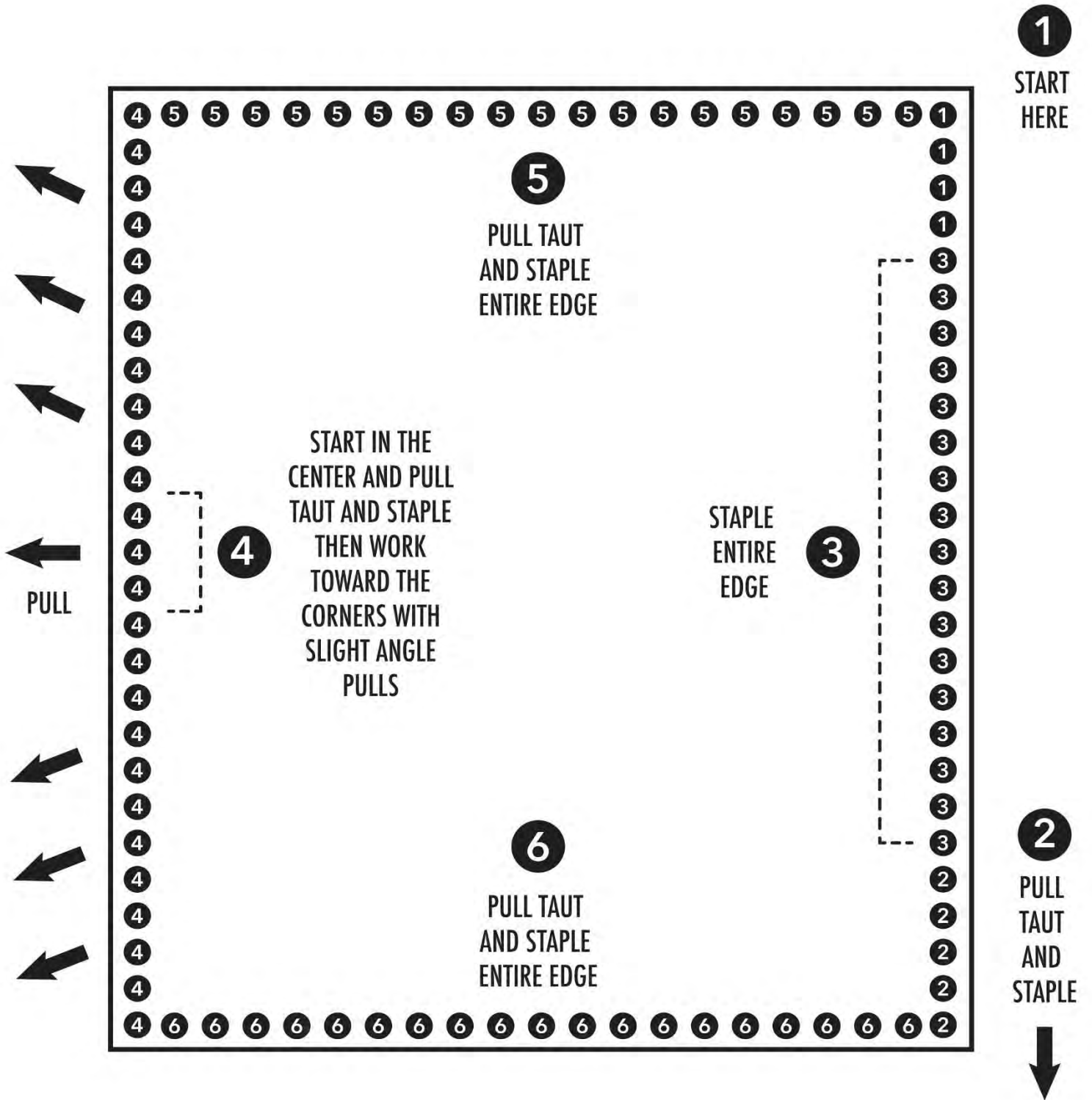
Step 4: Once the first side has been fastened, move to the center of the opposite side and pull the flooring taut and staple. Work out toward each corner by pulling taut and stapling.

Steps 5 & 6: Pull flooring taut and staple along the entire edge for the third and fourth sides.

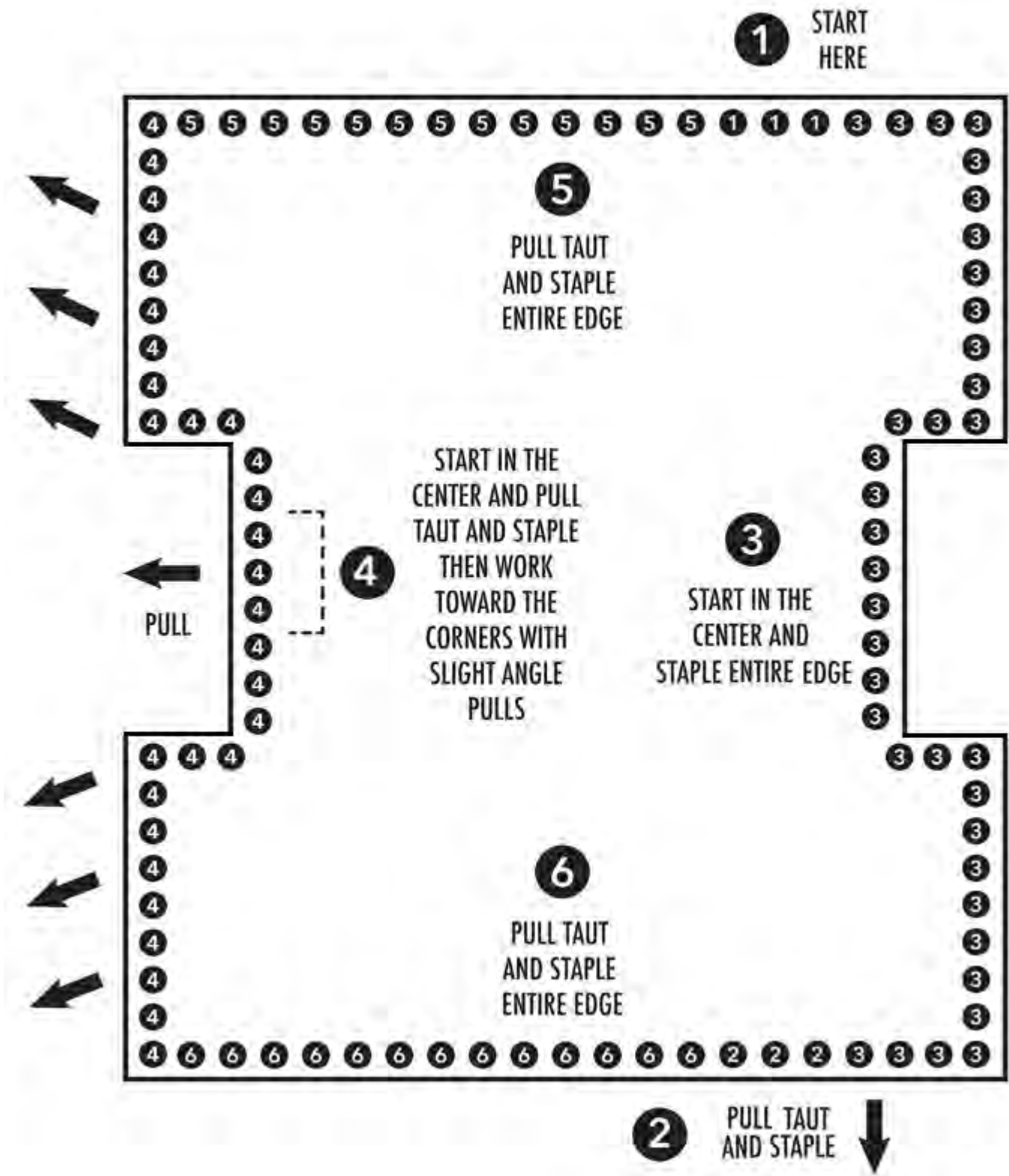
To complete the installation, make accurate net cut-outs for the heat registers and other floor openings. Place staples approximately every three inches (3") around all cut-outs, close enough to the edge so the crowns are covered with the flange or other molding.

Any minor surface looseness in the floorcovering will flatten and disappear in a few hours. Workmen should be cautious when placing interior walls on the floor to avoid creating buckles in the floorcovering

Stapling Procedure for Perimeter Installation in Manufactured and Modular Housing



Stapling Procedure for Perimeter Installation in Recreational Vehicles



Fully Adhered Installation Method for Housing

All Congoleum floor products developed for the Manufactured Housing, Modular Housing, and Recreational Vehicle industries can be installed by the fully adhered method. If this method of installation is used to install the floorcovering, the following procedures are recommended:

Subfloor Preparation

Proper subfloor preparation is important because the finished floor will reflect many imperfections and irregularities if the deck is not smooth. The following are examples of subfloor conditions which can telegraph through the flooring: uneven joints; open joints; high staples; underlayment material displaced by staples around staple holes; foreign material such as dirt, debris, and grit.

It should be noted that the amount of subfloor show-through can vary by the design selected (for example, designs with overall texture will hide irregularities to a much greater extent than a smooth floor with little or no texture or embossing). Therefore, the design and amount of texture and embossing should be taken into consideration when the subfloor is being prepared, with more attention being given to designs which have little or no surface texture.

Sanding

Sanding is the key to achieving a smooth subfloor. The entire subfloor should be sanded where the floorcovering is to be applied. The reason for sanding the entire area is that displaced subfloor material at each staple hole must be sanded smooth.

The most effective machine for deck sanding is a 16" diameter, or larger, rotating disk sander. An open grit paper, 36 - 40, should be used for sanding. The sandpaper disks should be changed at frequent intervals for best results.

The field areas of the deck panels will require little sanding; just moving the sander over the panels is normally sufficient. At joints however, particularly if they are uneven, more sanding is generally required. The sander should be moved slowly back and forth across any uneven panel joints until they are level.

NOTE: When sanding decks, the installer should carry a hammer and drive any high staples flush.

After sanding has been completed, the deck should be completely cleaned of all foreign material. Use of a fine-bristle push broom is best because compressed air (commonly used) does not always remove grit particles (loosened grit from sandpaper disks).

Filling Subfloor Joints

Use latex-modified portland cement-based compounds for filling, smoothing and/or leveling sub-floor imperfections. Apply the patching material with a straight blade trowel to the subfloor joints and any other places requiring filling or leveling. Allow the patching material to dry before applying adhesive to the subfloor. Adhesive applied to wet patching material will not bond and buckling of the flooring could occur at these places. **CAUTION:** Check with the decking manufacturers for recommendations on the use of fillers with their products.

Adhesive

Two types of adhesives are recommended for the installation of Congoleum flooring.

1. Latex Water-Resistant Adhesive: This type of adhesive is commonly called "Multi-Purpose" adhesive by many manufactures. The adhesive, in addition to water resistance, must be non-staining. Examples of adhesives which have satisfactory properties are: UnderFlor 3044 Premium Flooring Adhesive and Automated Housing™ Solvent-Free Multi-Purpose Floor Covering Adhesive (Franklin 50557).

2. Pressure Sensitive Water-Resistant Adhesive: This type of adhesive was developed for the installation of sheet vinyl flooring in manufactured homes. This adhesive minimizes, and in many cases eliminates, subfloor joint show-through caused by decking panel growth due to moisture or twisting of the panels during transportation. The adhesive stays slightly soft and sticky allowing for minor subfloor movement without distorting, creasing, or tenting the flooring over-joints. An adhesive of this type is: Automated Housing™ Solvent-Free Clear Thin-Spread Adhesive (Franklin 50667).

NOTE: Claims on Congoleum floorcovering that are traceable to defective adhesive or lack of satisfactory performance by the adhesive will not be honored by Congoleum. Any failures or deficiencies are the responsibility of the adhesive manufacturer.

NOTE: Adhesives containing asphalt, whether solvent, emulsion or latex, should never be used to install vinyl flooring because severe staining will occur. Additionally, water-based adhesive, such as linoleum paste, is not recommended for installing sheet vinyl because staining can occur in patches where application is excessive.

Adhesive Application

The adhesive can be applied to the subfloor by two methods: spraying or with a notched adhesive trowel.

1. Spraying: If the spraying method is utilized, the adhesive application to the subfloor must be uniform. The quantity applied must be sufficient to allow a complete transfer of adhesive to the floorcovering backing when the flooring is laid into the wet adhesive and rolled. **CAUTION: Do not apply excessive adhesive or “puddle” adhesive on the subfloor. To do so will cause a dimpled, uneven appearance in the finished flooring and/or show creases made by the roller.**

2. Troweling: A notched steel trowel with notches 1/16” wide, 1/32” deep, separated by 1/32” is recommended for application of UnderFlor 3044 adhesive to the subfloor. The adhesive application must be uniform. Avoid skipped areas, ridges, and thick applications.

The trowel notches must be kept clean. Dried adhesive can clog the notches, reducing the amount of adhesive applied to the deck. Storing trowels in a bucket of detergent/water solutions will keep the adhesive from hardening and minimize clean-up time.

Through use, trowel notches will wear down. When this occurs, replace the trowel or file the notches to their original size.

Installing the Floorcovering

For easier and quicker installation, it is recommended that the deck be kept clear with pipes below the subfloor wherever possible. This can usually be worked into the manufacturing cycle so the pipes are exposed after the flooring material is installed.

Follow these steps to install the floorcovering:

Step 1: Cut the flooring to size and position on the deck.

Step 2: Start at one end and roll the flooring face-in, exposing the subfloor under one-half of the sheet.

Step 3: Apply adhesive to the subfloor by spraying or troweling.

Step 4: Start at the rolled back floorcovering in the center and unroll about 3’ to 4’ of flooring into the wet adhesive. Use a three-section steel roller (100 pounds or heavier) to roll the floorcovering. This is an important step because it embeds the floorcovering backing into the adhesive while it is still wet. Rolling should be from side-to-side.

All air under the flooring should be pushed ahead of the roller into the unrolled section. Continue in this manner pushing the flooring into the wet adhesive, 3’ to 4’ at a time, until the first half of the sheet has been completely rolled.

The same procedure used on the first half of the sheet should be used to complete the other half of the flooring installation.

NOTE: Long lengths of floorcovering should not be unrolled in the wet adhesive because large pockets of air can be trapped in the flooring. These can be difficult, or impossible, to roll out if the adhesive has started to set-up.

NOTE: The floorcovering roller must be kept clean. Any build-up of adhesive and foreign material should be cleaned off regularly. Otherwise, the roller will be ineffective in pushing out trapped air, and small air pockets will remain in the flooring.

It may be necessary to use a slightly different approach if numerous long pipes are exposed above the deck. In these cases, roll the entire piece of flooring to be installed face-in. Spread adhesive on the subfloor for 6’ to 8’. Position the sheet in place at one end being sure the selvage edge of the flooring is unrolled evenly with the edge of the deck. When pipes are reached, cut holes in the floorcovering at the pipe location. Pull the pipes through the holes so they are exposed above the floorcovering. After reaching the end of the spread adhesive, apply adhesive for the balance of the piece being installed. Unroll the flooring into the wet adhesive 3’ to 4’ at a time and roll with the floorcovering roller. Cut holes for pipes (or other protrusions) and pull through the flooring as required to complete the installation.

If the flooring is going to be subjected to prolonged periods of cold temperature after installation, the flooring should be installed using the fully adhered method.

Congoleum requires that the flooring in recreational vehicles being shipped to Canada and Alaska be installed fully adhered using UnderFlor 3044. For RVs shipped to the 48 contiguous states, the Recreational Vehicle manufacturer can apply a 4” band of UnderFlor 3044 Premium Flooring Adhesive around all openings in the floor and wheel wells.

Repair Procedure for Perimeter Stapled Installation

Should the flooring be accidentally damaged, an inconspicuous and permanent repair can be easily made. The following is a list of tools and material required for making a repair.

- Utility knife with new blade
- Small square or straightedge
- Steel hand roller
- Double-face tape (QuikStik Tape QS120)
- Reinforced duct tape
- Masking tape 1" wide
- Recommended Congoleum Seam Sealer*

***DANGER:** Seam Sealers are extremely flammable. Avoid open containers. Do not smoke. Extinguish all flames or other sources of ignition in the area. Avoid prolonged contact with skin. Provide adequate ventilation. Keep seam sealer away from children. Carefully read all instructions on seam sealer kits before using.

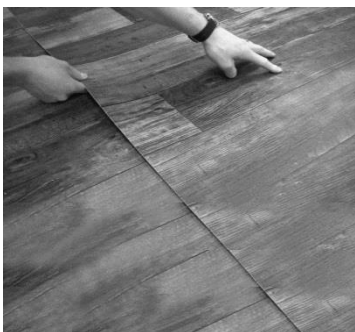
Method 1 - Repairing Cuts and Punctures

Surface cuts and punctures are easily repaired by applying the recommended seam sealer to the damaged spot with the appropriate applicator. Clean any soil from the cut, following the seam sealer directions, and apply a bead of seam sealer approximately 1/8" wide centered on the cut.

Method 2 - Repairing small Cuts, Nicks & Gouges using Congoleum Bond & Seal;

Small cuts, nicks and gouges can be repaired quickly and easily by replacing the damaged area with a small triangular repair piece using Congoleum's Bond & Seal. Bond & Seal bonds the new repair piece to the floor and seals the seam cut to resist penetration of dirt and various liquid spills.

In order to assure a good color match, the repair material should be from the same roll of floorcovering as that installed in the home.



Step 1: Obtain an oversized matching piece of flooring that will be used to make the repair.



Step 2: Place a small piece of masking tape over the repair piece in the exact location that matches the damaged area on the floor so you know where to cut the seam.



Step 3: Lay the repair piece over the damaged area and accurately match the pattern, then secure it on all sides with masking tape.



Step 4: Use a utility knife with a sharp blade and square or straight edge to cut a small triangular shaped repair in the floor. The triangle should be as small as possible but sufficient size to remove the damaged area. Position the square over the damaged area and cut the first seam. Hold the utility knife perpendicular to the flooring surface and cut through both pieces of the flooring in a single cut.

Step 5: Cut the second seam starting at the end of the first seam cut. When making the last seam cut use care to avoid cutting beyond the ends of the first two seam cuts.

Step 6: Place the new repair piece off to the side, then remove the excess flooring, tape and damaged area. Make sure all seam edges are clean and any excess backing is removed.



Step 7: Apply a generous portion of Bond & Seal using the wooden applicator stick in the opening and under the edge of the sheet.



Step 8: Press the seam edges into the adhesive allowing the adhesive to coat the edges.



Step 9: Turn the corners downward and insert the repair piece into the opening and wipe off any excess from the surface with a clean damp cloth.



Step 10: Then use the steel hand roller to roll the repair, forcing adhesive up into the seam cut and distributing it evenly under the floor.

Step 11: Use a clean damp cloth to remove any remaining adhesive on the floor surface then wipe dry with a clean dry towel.

Step 12: Clean tools immediately while adhesive is still wet with a damp cloth. Use mineral spirits to remove dry adhesive.

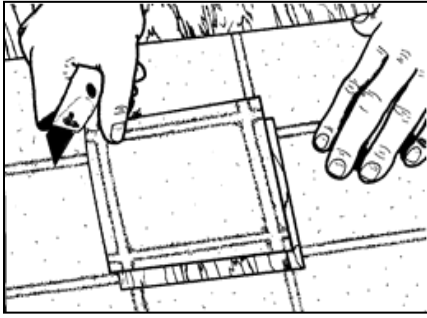
Step 13: Allow the repair to remain undisturbed for 4 hours. Do not expose to dramatic temperature fluctuations for at least 12 hours.

Method 3 - Replacing Damaged Areas and Geometric Designs

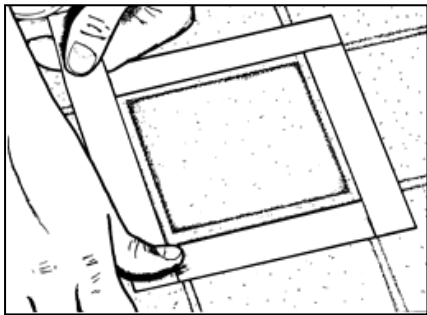
In order to assure a good color match, the repair material should be from the same roll of floor-covering as that installed in the home. Some manufacturers supply a scrap piece of flooring stored in kitchen cabinets for just this purpose. If this is not available, repair material can be obtained from hidden areas such as under kitchen cabinets, under appliances, or from closets. Here are several points to remember regarding the repair of geometric designs.

- Remove complete design units or, depending on the design type, sections of design units.
- All seam cuts should be made in the center of the embossed lines of the design whenever possible. If there are none, make the seam cut in dark lines or in the darkest color of the section being replaced or at light/dark color shifts.
- All seam cuts should be in straight lines. Do not attempt to make curved cuts.
- When the repair has been completed, seam seal all cuts with the recommended seam sealer applied with the appropriate applicator.

Follow these steps when making a repair:

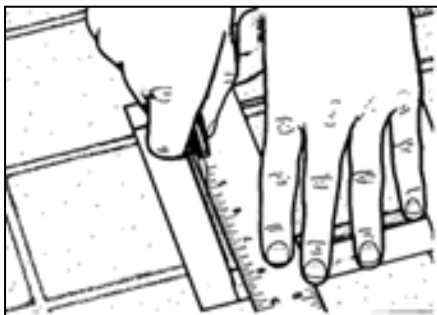


Step 1: After determining the most feasible section of the design to be removed, obtain matching flooring material. Then, cut out a corresponding design section allowing at least 1/4" selvage (excess material) on all sides.

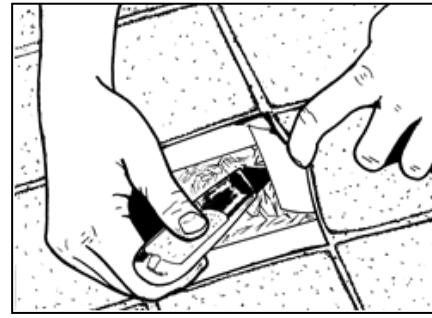


Step 2: Place the repair piece over the spot to be removed and match the design. Use masking tape on all sides to secure the repair piece in place.

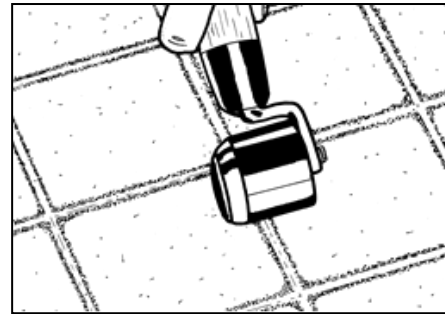
Step 3: Position a strip of 2" wide duct tape around the entire perimeter of the repair piece to minimize shrinkage when the seams are cut. Position the duct tape as close as possible to the masking tape that was used to secure the repair piece.



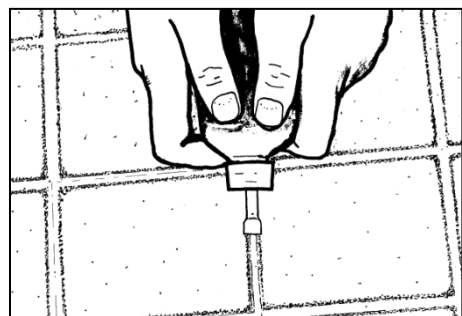
Step 4: With a sharp blade in a utility knife, follow a steel straightedge and cut through both layers of flooring material. Hold the knife straight up. Make seam cuts on all four sides of the repair.



Step 5: After cutting the seams, remove both pieces, center a strip of Congoleum QS120 seam tape (adhesive side down) under all edges of the repair. Do not overlap the tape at the corners. Place the tape on the knife blade in order to easily position the tape on each side of the repair. Roll the tape to secure it to the subfloor.



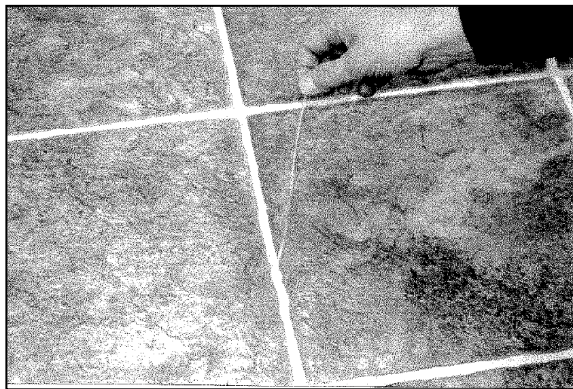
Step 6: Remove the paper from the top side of the tape and roll the flooring (to secure backing into tape) with the hand roller. Position the repair piece in place in the same position as the seams were cut and roll with the hand roller



Step 7: The last step is to seal the seam cuts. After following directions included with the recommended seam sealer, insert the elongated slot of the nozzle into the seam cut and apply a bead of sealer at least 1/8" wide centered on all seams. Keep foot traffic off the repair for at least 16 hours.

Sealing Seams on LuxFlor and Designer Carefree Repairs

- Once the repair seam cuts have been completed and are ready for seam sealing, use SU80 or SU92 according to instructions on the packaging.
- Make sure to insert the elongated slot of the nozzle into the seam cut and apply a bead of sealer, 1/8" to 1/4" wide, centered on all seams.
- Allow to dry for 30 minutes.
- Carefully peel the bead of seam sealer off the surface of the floorcovering as pictured. The results will be a virtually invisible seam line.



Repair Procedure for Fully Adhered Installations

Occasionally, the floorcovering, after being installed, will be accidentally damaged. When this occurs, an inconspicuous and permanent repair is easily made. The repair procedure varies slightly by adhesive. Fresh adhesive is required only when latex adhesive has been used to install the floor-covering. The tools and materials required to repair the floorcovering are:

- Utility knife with new blade
- Small square or straightedge
- Steel hand roller
- Masking tape 1" wide
- Recommended Congoleum Seam Sealer*

***DANGER:** Seam Sealers are extremely flammable. Avoid open containers. Do not smoke. Extinguish all flames or other sources of ignition in the area. Avoid prolonged contact with skin. Provide adequate ventilation. Keep from children. Carefully read all instructions on seam sealer kits before using.

Repairing Small Cuts, Punctures and Gouges

Small cuts, punctures and gouges where the wearlayer is intact can generally be repaired by sealing the wearlayer back together with the recommended seam sealer. If the damaged spot has become soiled from foot traffic, clean the soil out with a fine, stiff brush (such as an old toothbrush) moistened with mineral spirits. Allow the spot to dry and then apply the recommended seam sealer. On cuts, insert the fin of the applicator and seal in a normal manner. On small punctures and gouges, apply the seam sealer topically to cover the damaged area.

Repairing Damaged Spot in Geometric Designs

In order to assure a good color match, the repair material should be from the same roll of floorcovering as that installed in the home. (Some manufacturers supply a scrap piece of flooring stored in kitchen cabinets for just this purpose.) If this is not available, repair material can be obtained from hidden areas, such as under kitchen cabinets, under appliances or from closets. Here are several points to remember regarding the repair of geometric designs:

- Remove complete design units or, depending on the design type, sections of design units.

All seam cuts should be made in the center of the embossed lines of the designs, whenever possible. If there are none, make the seam cut in dark lines or in the darkest color of the section being replaced.

All seams cuts should be in straight lines. Do not attempt to make curved cuts. When the repair has been completed, seal all cuts with the recommended seam sealer applied with the approved applicator.

The repair procedure for fully adhered floor-covering varies depending on which adhesive has been used, latex or pressure sensitive.

Latex Adhesive

Selecting leftover material with the backing intact will make the most inconspicuous repair. Follow these procedures:

Step 1: Determine the most feasible area in the design to place seam cuts to remove the damaged spot. Then cut out a slightly larger corresponding section (about 1/4" oversize on all edges) of the design on the material to be used for the repair.

Step 2: Position the repair material over the spot to be removed and carefully match the design. Use masking tape on all 4 sides to hold the repair piece in place.



Step 3: With a sharp blade in the utility knife, follow a small square or other type of straightedge as a guide and apply enough pressure to cut through both layers of flooring in one pass.



Step 4: Insert the knife blade tip into the cut on one corner and pull up the edge of the floorcovering to start removal of the damaged area. Then pull the damaged spot out.



Step 5: Use a sharp chisel or razor scraper to shear the backing and adhesive from the subfloor. Be careful not to damage the subfloor or edges of the flooring in the area being repaired.



Step 6: Apply a thin coat of Congoleum 3044 adhesive to the back of the repair piece with a notched trowel or paint brush. Insert the replacement piece in place in the exact way the seams were cut and roll with a steel and roller to bring the wear layers even.



Step 7: To complete the repair, seal all seams in the repair with the recommended Congoleum seam sealer.

Pressure Sensitive Adhesive

If pressure sensitive adhesive is used to install the floorcovering, simply omit Step 5 and the application of adhesive in Step 6.

Importance of Seam Sealing Floorcovering Repairs

Seam sealing is a step that should never be eliminated from the repair procedure. Used as directed, seam sealer fuses the wearlayer of the seam cuts together locking out water and soil for the lifetime of the flooring. If seam sealer is not applied, seams in repairs will turn dark from soil penetration, gradually curl, and become the source of complaints.

It should be noted that seam sealer is not a filler. It will not bridge gaps in excess of five thousandths of an inch wide (five mils). Therefore, good seam cutting techniques (tight seams) are required for the seam sealer to be effective.

STAINING

Staining of sheet vinyl can be very puzzling, as well as frustrating, as to why it happened. What causes staining requires extensive research in a forensic lab. Generally, stains are caused when a foreign substance, liquid, solid, or gas, comes in contact with the vinyl. Sometimes the reaction is immediate. Other times the stain will not show until the contaminated area of the vinyl is exposed to heat and/or light.

The best safeguard against staining is to be constantly aware of potential problems and educate everyone—plant personnel, dealers, salespeople, and the consumer. To help prevent potential problems from occurring, the following list of known stainants has been compiled. These stainants will effect most resilient flooring. Many times, stains can be avoided by immediately cleaning any spills thoroughly with mineral spirits or varsol. After the spill is removed, clean the area with soap and water.

Installation Stainants

Non-Recommended Flooring Adhesives may stain resilient flooring, particularly low cost adhesives formulated with dark processing oils. Congoleum recommends using only quality brand adhesives. These adhesives are formulated with select ingredients that are non-staining. Consult your LaSalle Bristol representative for the specific adhesive required for your flooring product.

Pink Factory Applied Synthetic Patching Material Used in the Repair of Wood Panel Underlayment (i.e. knots, splits, voids, etc.) may stain resilient flooring. This problem was more prevalent in the mid 80's and has since been addressed by the American Plywood Association and its member mills. Plywood underlayments recommended for use with resilient floorcoverings that carry the APA trademark do not contain synthetic patching material that will stain resilient flooring. Check to make sure these specific underlayments are still available. For specific information on other underlayment, we recommended that you consult your supplier.

Certain Oriented Strand Boards (OSB) and Waferboards have been known to contain dark colored wood strands or chips that may discolor vinyl flooring. One such dark chip that will cause a yellow stain in vinyl flooring is an extractive found in elm trees. The elm extractive is a naturally occurring yellow chemical identified as 7 Hydroxycaladenal. We recommend that you purchase your underlayment from a reliable source that will guarantee its product against this occurrence.

Resin Coated Nails may stain resilient floor-covering. While we believe that some resin coated nails will perform satisfactorily, it is difficult to distinguish between those that will stain and those that will not.

Tannic Acid and Fungi found in wood. Gloeophyllum terribile is a wood decaying organism which is found in various wood products. These microorganisms develop a yellow pigmented bacteria that will grow in vinyl.

Gypsum-Based Patching Compounds containing starch may cause discoloration. The starch provides a food source on which mold, mildew and bacteria thrive in a wet environment. When mildew discoloration is visible, it is not the microscopic organisms that the consumer sees, but it is the waste products they generate from ingesting food. The waste products left behind will eventually migrate into the floor causing discoloration.

Certain Construction Adhesives used for decking and paneling have caused various degrees of staining. Generally, this type of stain is directly over a decking joint. The degree of staining may or may not intensify when exposed to sunlight. It is generally the antioxidants in the adhesives that cause yellow discoloration.

Decking Panels

Edge sealants and brand/grade markings on decking panels may contain chemicals that will migrate into the floorcovering backing and eventually cause discoloration.

Building Material Stainants

- Wood Stains, Paint, Floor Sealers Containing Dyes, Petroleum Based Products, Asphalt Shingles, Roofing Paper, Rubber, Adhesives, Asphalt, Tar, Solvents

Household Stainants

- Ball Point Pen, Carpet Dyes, Citrus Cleaners*, Coal Tar, Cooking Oils, Detergent Residues, Hair Coloring, Hydraulic Fluid, Ketchup, Lipstick, Magic Markers, Mercurochrome, Mustard, Oven Cleaners, Paint Remover, Pesticides, Red Wine, Rubber Mats, Shoe Polish, Spaghetti Sauce, Specially-Treated Dust Mops, Spray Cleaners and Polish, Tincture of Iodine, Urine

*Some citrus cleaners containing d-limonene and/or terpene have been found to cause yellow stains on sheet vinyl flooring. The yellowing may not occur until the flooring has been exposed to certain light and/or heat conditions.