

# *Resi***TOUGH** FLOORING

## INSTALLATION AND MAINTENANCE MANUAL

**ROLLS AND TILES**



1.800.843.6287 • [www.resilite.com](http://www.resilite.com)

**TABLE OF CONTENTS**

**INSTALLATION**

|                         |     |
|-------------------------|-----|
| Job Site Conditions     | 3   |
| Subfloors               | 3   |
| Subfloor Preparation    | 3-4 |
| Storage & Handling      | 4-5 |
| Roll Installation       | 5-6 |
| Tile Installation       | 7-8 |
| AccentTile Installation | 8   |

**MAINTENANCE**

|                                      |    |
|--------------------------------------|----|
| Floor Protection                     | 9  |
| Assignment of Cleaning & Maintenance | 9  |
| Cleaning Chart                       | 10 |
| Cleaning Procedures                  | 10 |

**WARRANTY**

|                   |    |
|-------------------|----|
| Compliance Policy | 11 |
|-------------------|----|

### INSTALLATION

#### I. JOB SITE CONDITIONS

1. Installation should not begin until after all other trades are finished in the area. If the job requires other trades to work in the area after the installation of the floor, the floor should be protected with an appropriate cover. Kraft paper or plastic works well.
2. Areas to receive flooring should be weather tight and maintained at a minimum uniform temperature of 65°F (18°C) for 48 hours before, during, and after the installation.

#### II. SUBFLOORS

Resilite's recycled rubber Flooring; Resitough sports surfacing rolls and tiles, may be installed over concrete, approved Portland-based patching and leveling materials, such as Ardex K-15 or equivalent, and wood.

**NOTE:** Ardex Engineered Cements  
400 Ardex Park Drive  
Aliquippa, PA 15001  
(724) 203-5000

**NOTE:** Gypsum-based patching and leveling compounds are not acceptable.

1. Wood Subfloors – Wood subfloors should be double construction with a minimum thickness of one inch. The floor must be rigid and free from movement with a minimum of 18 inches of well-ventilated air space below.
2. Underlayments – The preferred underlayment panel is American Plywood Association (APA) underlayment grade plywood, minimum thickness of 1/4-inch, with a fully sanded face.

**NOTE:** Particleboard, chipboard, Masonite and lauan are not considered to be suitable underlayments.

3. Concrete Floors – Concrete shall have a minimum compressive strength of 3000 psi. New concrete slabs should cure for a minimum

of 28 days before installing Resitough. It must be fully cured and permanently dried.

#### III. SUBFLOOR REQUIREMENTS AND PREPARATION

1. Subfloors shall be dry, clean, smooth, level, and structurally sound. They should be free of dust, solvent, paint, wax, oil, grease, asphalt, sealers, curing and hardening compounds, alkaline salts, old adhesive residue, and other extraneous materials, according to ASTM F710.
2. Subfloors should be smooth to prevent irregularities, roughness, or other defects from telegraphing through the new flooring. The surface should be flat to the equivalent of 3/16" (4.8 mm) in 10' (3.0 m).
3. Mechanically remove all traces of old adhesives, paint, or other debris by scraping, sanding, or scarifying the substrate. Do not use solvents. All high spots shall be ground level and low spots filled with an approved Portland-based patching compound.
4. All saw cuts (control joints), cracks, indentations, and other non-moving joints in the concrete must be filled with an approved Portland-based patching compound.
5. Expansion joints in the concrete are designed to allow for expansion and contraction of the concrete. If a floor covering is installed over an expansion joint, it will likely fail in that area. Use expansion joint covers designed for resilient flooring.

**NOTE:** Expansion joint covers can be obtained from:

Balco, Inc.  
2626 South Sheridan  
P.O. Box 17249  
Wichita, KS 67217  
(316) 945-9328

### INSTALLATION

6. Always allow patching materials to dry thoroughly and install according to the manufacturer's instructions. Excessive moisture in patching material may cause bonding problems or a bubbling reaction with the E-Grip™ III adhesive.

#### HAZARDS:

**SILICA WARNING** – Concrete, floor patching compounds, toppings, and leveling compounds can contain free crystalline silica. Cutting, sawing, grinding, or drilling can produce respirable crystalline silica (particles 1-10 micrometers). Classified by OSHA as an IA carcinogen, respirable silica is known to cause silicosis and other respiratory diseases. Avoid actions that may cause dust to become airborne. Use local or general ventilation or provide protective equipment to reduce exposure to below the applicable exposure limits.

**ASBESTOS WARNING** – Resilient flooring, backing, lining felt, paint, or asphaltic “cutback” adhesives can contain asbestos fibers. Avoid actions that cause dust to become airborne. Do not sand, dry sweep, dry scrape, drill, saw, beadblast, or mechanically chip or pulverize. Regulations may require that the material be tested to determine the asbestos content. Consult the document “Recommended Work Practices for Removal of Existing Resilient Floor Coverings” available from the Resilient Floor Covering Institute.

**LEAD WARNING** – Certain paints can contain lead. Exposure to excessive amounts of lead dust presents a health hazard. Refer to applicable federal, state, and local laws and the publication “Lead Based Paint: Guidelines for Hazard Identification and Abatement in Public and Indian Housing” available from the United States Department of Housing and Urban Development.

7. Maximum moisture vapor emission of the concrete must not exceed 5½ lbs./1,000 sq. ft. in a 24-hour period, as measured by the calcium chloride moisture emission test conducted in accordance to ASTM F1869. If the emissions exceed limitations, the installation should not proceed until the problem has been corrected.

**NOTE:** For moisture remediation, Resilite recommends the following two vapor retardant products.

**1. ARDEX MC - 724-203-5000**

[www.ardex.com](http://www.ardex.com)

**2. Bostik Durabond D-250 - 888-592-8558**

[www.bostik-us.com](http://www.bostik-us.com)

8. It is essential that pH tests be taken on all concrete floors. If the pH is greater than 9, it must be neutralized prior to beginning the installation.
9. Adhesive bond tests should be conducted in several locations throughout the area. Glue down 3' x 3' test pieces of the flooring with the recommended adhesive and trowel. Allow to set for 72 hours before attempting to remove. A sufficient amount of force should be required to remove the flooring and, when removed, there should be adhesive residue on the subfloor and on the back of the test pieces.

**NOTE:** This product is suitable for installation over a radiant heat source.

#### IV. MATERIAL STORAGE AND HANDLING

1. Material should be delivered to the job site in its original, unopened packaging with all labels intact.
2. Roll material should always be stored laying down. Storing rubber on end will curl the edges resulting in permanent memory of the material. All edges with memory curl must be straight edge cut before installation. Do not store rolls higher than 4 rolls or for more than six months. Material should only be stored on a clean, dry, smooth surface.
3. **Inspect all materials for visual defects before beginning the installation. No labor claim will be honored on material installed with visual defects. Verify the material delivered is the correct style, color, and amount. Any discrepancies must be reported immediately before beginning installation.**

### INSTALLATION

- The material and adhesive must be acclimated at room temperature for a minimum of 48 hours before starting installation.
- All Resitough rolls must be unrolled and installed in the same direction. See diagram 1. Each roll is marked on the side of the core with red or orange paint to aid in this process. Use the colored edge of the core as a guide. Laying rolls in the opposite direction will cause color variations between the rolls.**

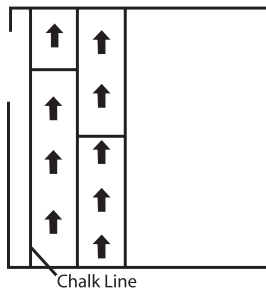


Diagram 1

- Roll material is stretched slightly during the manufacturing process. At the job site, the installer should unroll all cuts and allow to relax overnight. A bare minimum of two hours is required. Shaking the material once it is unrolled can help it to relax.

#### V. INSTALLATION – ROLL MATERIAL

- Make the assumption that the walls you are butting against are not straight or square. Using a chalk line, make a starting point for an edge of the flooring to follow.
- Remove the Resitough from the shrink-wrap and unroll it onto the floor. Lay the Resitough on the floor in a way that will use your cuts efficiently. Cut all rolls at the required length, including enough to run up the wall.
- Allow the cuts to relax in position for a minimum of two hours. 24 hours is preferred.
- Place the edge of the first roll along the chalk line.

- Snap a chalk line where the seam will be located. Straight edge seam edge of first piece. Align the first edge to the chalk line; it is very important that the seam is perfectly straight. Straight edge seam edge of second lineal drop if the first roll does not extend the length or width of the room. If end seams are necessary, they should be staggered on the floor and overlapped approximately 3-6".
- Position the second roll with no more than a 1/8" overlap over the first roll at the seam. After adhesive is applied to substrate the material will be worked back to eliminate the overlap. This procedure will leave tight seams and eliminate any gaps. Care should be taken to not over compress the seam. Over compressed seams will cause peaking.

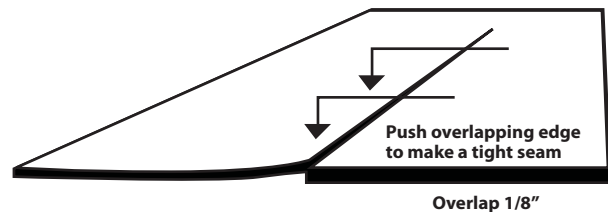


Diagram 2

- Repeat for each consecutive roll necessary to complete the area or those rolls that will be installed that day.
- METHOD 1 – GLUE DOWN (6 mm, 8mm and 9 mm Roll)**
  - After performing the above procedures, begin the application of the adhesive. We recommend E-Grip III, a one-component moisture-cured polyurethane adhesive. E-Grip III should not be mixed. It is specially formulated for use right out of the pail. Apply E-Grip III to the substrate using a 1/16" square-notched trowel.
  - Fold over the first drop along the wall (half the width of the roll).

### INSTALLATION

- c. Spread the adhesive using the proper size square-notched trowel. Take care not to spread more E-Grip III than can be covered with flooring within 30 minutes. The open time of the adhesive is 30–40 minutes at 70°F and 50% relative humidity.

**NOTE:** Temperature and humidity affect the open time of the adhesive. Temperatures above 70°F and/or relative humidity above 50% will cause the adhesive to set up more quickly. Temperatures below 70°F and/or relative humidity below 50% will cause the adhesive to set up more slowly. The installer should monitor the on-site conditions and adjust the open time accordingly.

- d. Lay the flooring into the wet adhesive. Do not allow the material to “flop” into place; this may cause air entrapment and bubbles beneath the flooring.
- e. Immediately roll the floor with a 75–100 lb. roller to ensure proper adhesive transfer. Overlap each pass of the roller by 50% of the previous pass to ensure the floor is properly rolled. Roll the width first and then the length.
- f. Fold over the second half of the first roll and half of the second roll. Spread the adhesive. **Spread the adhesive at right angles to the seam to prevent the adhesive from oozing up through the seam.** Roll the flooring.
- g. Continue the process for each consecutive drop. Work at a pace so that you are always folding material back into wet adhesive.

**NOTE:** Never leave adhesive ridges or puddles. They will telegraph through the material.

- h. Do not allow E-Grip III to cure on your hands or the flooring. Immediately wipe off excess adhesive with a rag dampened with mineral spirits! Cured adhesive is very difficult to remove from hands.

**We strongly suggest wearing gloves while using E-Grip III!**

- i. If some seams are gapping, temporarily hold them together with masking tape. Do not use duct tape as it will leave a residue on the floor. Remove the tape after the adhesive develops a firm set.
- j. In some instances, it may be necessary to weigh down the seam until the adhesive develops a firm set. Boxes of cove base or tile work well.

Keep traffic off the floor for a minimum of 24 hours. Floor should be free from rolling loads for a minimum of 48-72 hours. Foot traffic and rolling loads can cause permanent indentations or disbonding in the uncured adhesive.

#### 9. METHOD 2 – TAPE DOWN (8 mm and 9 mm Roll)

- a. Dry lay the rolls onto the subfloor.
- b. Draw a pencil line beneath all seams to be taped.
- c. Use a high-quality double-faced carpet tape with a minimum width of two inches.
- d. Fold over the first drop along the chalk line (half the width of the roll).
- e. Apply two strips of the double-faced tape along the seam, one on each side of the pencil mark.
- f. Remove the release paper and place the flooring onto the exposed tape.
- g. When butting one roll next to another, overlap the seams by no more than 1/8". Work the material back to eliminate the overlap. This procedure will leave tight seams over the tape and eliminate any gaps.

**NOTE:** Over compressing the seam will result in bond failure.

- h. Hand-roll the seams to ensure adequate contact. Do not roll the entire floor.

### INSTALLATION

#### VI. INSTALLATION – TILES

1. **Inspect all tiles for visual defects including shade variances prior to beginning installation. No labor claim will be honored on material installed with visual defects or shade variations. Any discrepancies must be reported immediately before beginning the installation.**
2. Resitough tiles must also be installed in the same direction. (Directional markings stamped on the bottom of the tiles must point in the same direction.)
3. Measure the width of the area to be covered.
4. Mark the center of the area at two points, one at each end.
5. Snap a chalk line, line #1, through these two points.
6. Determine the center point of the chalk line.
7. Using a Carpenter's square or another method, snap a second chalk line, line #2, perpendicular (at 90°) to the first line. The lines should intersect at their centers.
8. The area to be covered is now divided into quarters. Begin the installation at the center of the area, where the two lines intersect. See diagram 3. Resitough tiles must be installed in the same direction. (Directional markings stamped on the bottom of the tiles must point in the same direction.)

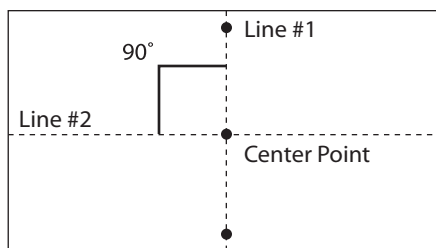


Diagram 3

**NOTE:** To lay in an ashlar configuration, snap a third chalk line parallel to line #2 and perpendicular to line #1. The distance between line #2 and line #3 should be half the width of the tile (9 or 18 inches). See diagram 4.

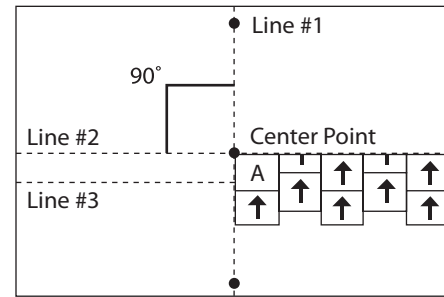


Diagram 4

9. After the above procedure is performed, begin application of E-Grip III, Resilite's recommended one-component moisture-cured polyurethane adhesive. Apply E-Grip III to the substrate using a 1/16" square-notched trowel.
10. Spread the adhesive using a 1/16" square-notched trowel. Take care not to spread more E-Grip III than can be covered with flooring within 30 minutes. The open time of the adhesive is 30–40 minutes at 70°F and 50% relative humidity.
11. Place the first, tile A, into the wet adhesive making sure that the edges are precisely placed along the chalk lines and where they intersect. Press firmly on the tiles to remove any curls or entrapped air. See diagram 5.

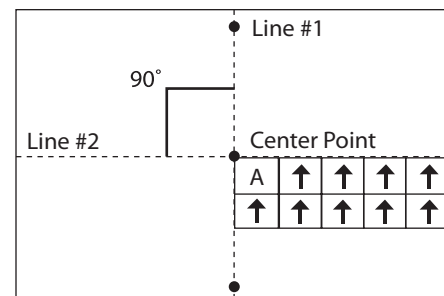


Diagram 5

**Reminder:** Arrows on bottom of tiles must point in the same direction.

12. Lay whole tiles from left to right along chalk line #1 up to the wall on the opposite side of chalk line #2. The last tile will likely have to be cut to fit against the wall.

### INSTALLATION

13. Do not allow E-Grip III to cure on your hands or the flooring. Wipe off excess adhesive with a rag dampened with mineral spirits! Cured adhesive is very difficult to remove from hands. We strongly suggest wearing gloves when using E-Grip III!

14. Continue this process with each row until you reach the wall across from chalk line #1.

15. Go back and fill in gaps between the two original chalk lines and the wall on those two sides.

16. If some seams are gapping, hold them together temporarily with painter's or masking tape. Do not use duct tape as it will leave a residue on the floor. Remove the tape after the adhesive has developed a firm set. It may be necessary to weigh down some seams.

17. Roll a 75-100 lb. roller over the floor within 45 minutes to ensure a proper transfer of adhesive. Overlap each pass of the roller by 50% of the previous pass to ensure that the floor is properly rolled.

18. Keep traffic off the floor for a minimum of 24 hours. Floor should be kept free from rolling loads for a minimum of 48-72 hours. Foot traffic and rolling loads can cause permanent indentations or disbonding in the uncured adhesive and cause tiles to shift.

#### VII. INSTALLATION – ACCENT TILE INLAY

**NOTE:** Total glue down is the only recommended method for permanent installations.

1. Cut inlays into field area before spreading adhesive. **Logos and inlays are NOT approved for double stick tape installations.**

2. Position the inlay on the field area at the desired location for trace cutting.

3. Starting at one corner and using a straight edge, trace-cut along one edge of the inlay. See diagram 6.

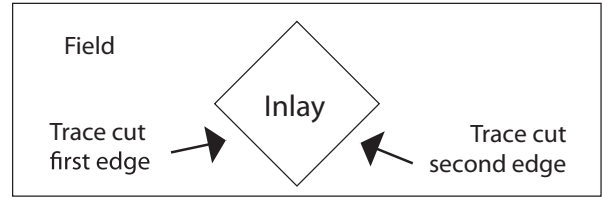


Diagram 6

4. Starting at the same corner, trace-cut along an adjacent edge of the inlay. Remove the inlay.

5. Make a third cut and remove the triangular-shaped piece. See diagram 7.

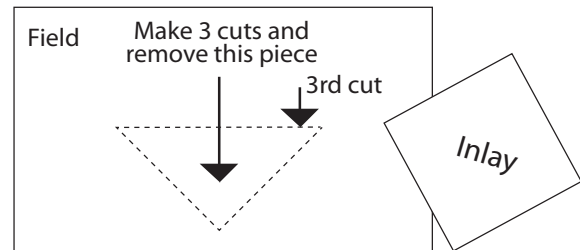


Diagram 7

6. Position the inlay into the triangular-shaped hole. Be sure that the corner and edges are butted tightly against the field piece. Tape the edges in place with masking tape. See diagram 8.

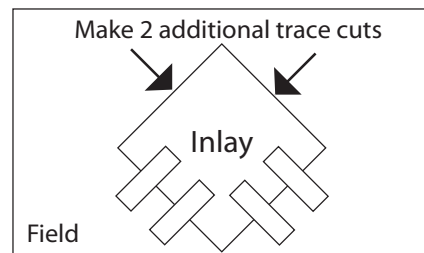


Diagram 8

7. Using the straight edge and the square, continue trace-cutting the remainder of the field for the inlay.

8. Remove and discard the scrap pieces.

9. Place the inlay into the field and tape the remaining edges with masking tape.

10. Fold over the material and apply adhesive to the subfloor as for a regular installation.

11. Continue the installation, following the directions for the glued down method.



**MAINTENANCE****IMPORTANT INFORMATION FOR THE INSTALLER**

**Resilite recommends  
JohnsonDiversey Maintenance Products and Procedures  
for Resitough SPORTS SURFACING**

**FLOOR PROTECTION**

The specifier should include specification details to protect the floor post-installation and until job construction is complete, such as covering the entire floor with paper or other floor covering device (plastic, plywood, etc.) until construction is completed and thorough cleaning and maintenance can be implemented.

**ASSIGNMENT OF CLEANING AND MAINTENANCE**

The specifier should determine and assign the responsibility for the initial cleaning and finishing. This responsibility should be specifically assigned to either the flooring contractor, general contractor, maintenance contractor, or owner.

**PRODUCTS AVAILABLE FOR PURCHASE**

TASKI® products available from JohnsonDiversey.  
Call 1-800-827-5427 or visit [www.johnsondiverse.com](http://www.johnsondiverse.com).

The recommendations contained in this manual are listed because of their extensive testing and field experience with the Resitough product. These instructions are given only as guidance to our customers and for use with our recommended tools and adhesives. Resilite cannot accept any responsibility for loss or damage that may result from the use of this information due to variations in working conditions and/or workmanship of the installer. Users are advised to conduct their own tests for a particular application and assign installers that are familiar with this type of flooring product.

Inspect all rolls and tiles for visual defects including shade variances prior to beginning installation. No labor claim will be honored on material installed with visual defects or shade variances. It may be necessary to lay out and hand select tiles for color consistency. Any discrepancies must be reported immediately before beginning installation. Ensure that all job site and subfloor conditions are met.

### MAINTENANCE

| Steps                               | Cleaning Product              | Mixture             | Equipment                                    |
|-------------------------------------|-------------------------------|---------------------|----------------------------------------------|
| Initial Cleaning                    | TASKI® profi                  | 10 oz./gal. water   | Purple pad or soft nylon brush               |
| Daily Cleaning                      | TASKI® profi                  | 6-10 oz./gal. water | Mint pad, soft nylon brush or microfiber mop |
| Heavy Soil and Restorative Cleaning | TASKI® profi or TASKI® ice it | 10 oz./gal. water   | Purple pad or black pad                      |

The application rates and concentrations are based on Taski recommendations. For rates and concentration of other products, consult the specific manufacturer's instructions.

#### VIII. CLEANING PROCEDURES

##### 1. Initial Cleaning

- a. Remove all surface soil, debris, sand, and grit by sweeping, dust mopping, or vacuuming with a high CFM vacuum. For large areas, use auto scrubbers to clean floors.
- b. Scrub floor with a neutral pH (7-9) detergent, such as TASKI profi cleaner (10 oz./gal. of water), using buffer or auto scrubber with a soft nylon brush or purple pad. Avoid flooding the floor.
- c. Pick up solution with a wet vacuum, rinse with clean water, picking up the rinse water with a wet vacuum and allow to dry thoroughly (6-8 hours).

##### 2. Daily/Regular Cleaning

- a. Sweep, dust mop, or vacuum floor to remove surface soil, debris, sand, and grit.
- b. Damp mop with a microfiber mop or auto-scrub using TASKI mint pad or nylon brush with TASKI profi (6-10 oz./gal. of water) or equivalent pH neutral cleaner.

##### 3. Restorative Maintenance

- a. Sweep and dry vacuum floor thoroughly.
- b. Heavy scrub floor with TASKI profi (10 oz./gal. of water) or TASKI ice-it. This cleaning may be performed with an auto scrubber or rotary scrubber (TASKI purple or black pad).

- c. Vacuum soiled solution with a wet/dry vacuum.
- d. Rinse with clean water.
- e. Pick up solution with wet vacuum.
- f. Allow floor to thoroughly dry.

##### 4. Heavy Soil

- a. Remove as much surface soil, debris, sand, and grit as possible by sweeping, dust mopping, or vacuuming.
- b. Scrub floor with a neutral pH (7-9) detergent, such as TASKI profi cleaner or TASKI ice it stripper, using a buffer or auto scrubber with a TASKI black pad.
- c. Pick up solution with a wet vacuum, rinse with clean water and allow to dry thoroughly (6-8 hours).

## **WARRANTY**

All Resilite rubber flooring is guaranteed by Resilite to be free from manufacturing defects on both material and workmanship. If such a defect is discovered, the customer must notify Resilite either through the contracting installer, distributor, or directly. If found to be defective within three years under normal non-abusive conditions, the sole remedy against the seller will be the replacement or repair of the defective goods, or at the seller's option, credit may be issued not exceeding the selling price of the defective goods.

Resitough warranty shall not cover dissatisfaction due to improper installation, damage from improper maintenance or usage, or general misuse, including and without limitation: burns, cuts, tears, scratches, scuffs, damage from rolling loads, damage from cleaning products not recommended by Resilite, shade variations due to exposure to direct sunlight, or differences in color between samples or photographs and actual flooring.

Resilite Sports Products, Inc. reserves the right to make updates to this manual at any time. For the most updated version please visit [www.resilite.com](http://www.resilite.com)



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