

Installation Guidelines

Stair Treads

For Landing Tile Installation Guidelines, please refer to Document #Z021

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I. Installation & Sub-Floor Preparation Products Available from Zandur

1. Adhesives
 - a. #55 Z-S Adhesive Tape – 1", 4" and 6" Width
 - b. #10 Acrylic Latex
 - c. #15 2-part Urethane
2. Self Adhesive Visual Impairment/Grit Strips – 2" width in various colors

II. Substrate Preparation

Proper preparation of substrate to receive treads is critical. All guidelines contained in these instructions must be followed to ensure a successful installation. Should you have any questions, contact Zandur or your local sales group.

A. General Information & Requirements for All Substrates

1. Zandur products must be installed on a surface that is dry, clean, smooth and structurally sound. The substrate must be free of contaminants such as paint, oil, wax, mold, adhesive residues, sealers or any other materials that may interfere with adhesive bonding. See section II.2.A. for approved wood surfaces or section II.3.A. for approved cementitious surfaces.
2. Prior to installation an adhesive bond test must be performed as specified.
3. Do not install tread/risers over existing treads or risers.
4. For best results, substrate should be level to within 1/8" in 10' and shall be patched or skim coated with a hard setting underlayment compound to ensure substrate is completely smooth. Zandur recommends Ardex, Mapei or other equal products with a minimum compressive strength of 3,000 psi. Do not apply patching material over existing adhesives. Zandur will not accept claims submitted on installations where patching materials have been applied over existing adhesive residue. After patching or skimming is complete, substrate must be sanded and scraped to remove any trowel marks or inconsistencies which may telegraph through the material. Follow manufacturers guidelines for product use. **Do not install over gypsum based sub-floor products.**

Should the following instructions for substrate preparation and installation leave any questions unanswered, contact Zandur at 888.397.2656.

B. Preparation of Wood Substrates

1. Zandur products may be installed over 3/8" or greater A/C grade plywood or underlayment board such as Tecply or Halex (Arctic or Baltic Birch) installed in a two layer fashion.
2. Zandur products are not approved for installation over panel underlayments such as Masonite, luan, particle board, OSB, cementitious underlayment panel, wood underlayment with knots or coated wood.
3. Prepare wood substrate per ASTM F 710 *Standard practice for installation and preparation of panel type underlayment to receive resilient flooring*, as it relates only to approved wood underlayments.
4. Follow manufacturer's instructions for substrate installation regarding fastening pattern and joint spacing. Use suitable screws or ring shank nails. Do not use drywall screws.
5. Once installed, patch and level substrate as instructed in section II.1.D.

C. Preparation of Concrete Sub-Floors

1. Concrete substrates shall be prepared in accordance with ASTM F 710 *Standard practice for preparing concrete sub-floors to receive resilient flooring*.
2. Concrete must be clean as per section II.1.A. Pay specific attention to possible presence of a sealer which must be removed. It is highly recommended to shot blast or bead blast existing concrete prior to installation to remove sealers, adhesives and/or any other surface contaminants.
3. All concrete, regardless of age, must be tested for the moisture vapor emission rate and/or relative humidity to ensure the sub-floor is suitable for tread installation.
4. Testing of concrete shall be performed when the building is enclosed and when the HVAC system has been in operation for at least 7 days. Furthermore, job-site temperature and humidity must be at the level expected during normal use or in the range of 65°F to 75°F and 45% to 65% relative humidity.
5. Moisture tests must be performed at a rate of 3 for the first 1,000 square feet and then 1 additional test per additional 1,000 square feet. Zandur approves the use of ASTM F1869 (calcium chloride) and/or ASTM F2170 (relative humidity probe test). Moisture emissions must be within the guidelines listed in table 2.
6. Sub-floor pH must be tested with wide range pH paper and be no more than 9.
7. Apply moisture barrier if required in order to reduce subfloor moisture to acceptable range mentioned above. **Consult with moisture barrier manufacturer for recommendations and application instructions. Installation shall not commence until any sub-floor emissions issues are properly remediated and verified as corrected by re-testing.**
8. Level substrate as specified in section II.1.D. **Application of any concrete leveling product must be done AFTER application of a moisture barrier.**
9. Allow patching materials to dry naturally without the use of direct air or temporary HVAC.

D. Preparation of Other Substrates

1. **Terrazzo:** Product may be installed over terrazzo, however it must be bead or shot blasted so that adhesives properly bond to substrate. Install treads with adhesives intended for use over non-porous substrate. Blasting Terrazzo may not be necessary when ZS tape is used. Contact Zandur for direction.
2. **Metal:** Prepare substrate with metal primer such as Sherwin Williams Kromik or equal. Install treads with adhesives intended for non-porous substrates. Do not use cementitious underlayment patch or sealers on metal. Minor imperfections may be filled with #15 Two Part Urethane.
3. **An adhesion test must be performed as outlined in section III.1.f**
4. Zandur accepts no responsibility for any issues regarding adhesion to existing flooring surfaces.

III. Tread Installation

A. Pre-Installation Checks

1. **Acclimation** – Treads and adhesives must be acclimated to jobsite at least 24 hours prior to installation. Except to verify material is correct and within specifications, it must remain in its original packaging during acclimation period.
2. **Job Site Conditions** – Job site conditions must be maintained between 65°F and 75°F with a relative humidity between 45% and 65% for 72 hours prior to, during and 72 hours after installation. Temporary heating may not be used during acclimation or installation. Air must be free of dust and must be circulating normally.
3. **Substrate** – If you have not reviewed sub-floor preparation instructions read them now. Once prepared per instructions, verify the substrate is dry, level and dust free.
4. **Patching/Skim Coat** – Ensure that the correct cementitious patching compound was used and is properly cured, hard and dust free and has a compressive strength of greater than 3000 psi. If substrate or patching material is easily scratched, indented or is dusty even after being cleaned, installation cannot occur.
5. **Material Verification** – Prior to installation, randomly remove a few pieces of material from different cartons and compare to submittal sample to ensure client is satisfied with color, shade and/or shade variation. Additionally, verify material is not physically damaged or deformed and is visually acceptable. If the material does not meet client expectations, contact Zandur to arrange for replacement material. Installation signifies acceptance of material in all visual aspects. After the product is installed, the Zandur warranty does not cover incorrectly shipped or use of incorrect materials regardless of the situation. Additionally the Zandur warranty does not cover visual defects including
6. **Adhesion Test** – In order to verify adhesion, one 12" piece of tread must be adhered to the substrate 72 hours prior to installation. After 72 hours, the material should lay flat and be difficult if not impossible to remove by hand. Adhesion test must be documented in writing as well as with photos. Should material be easily removed or not adhered in any way, contact Zandur. DO NOT proceed with installation.

B. Layout of Installation

1. Treads must be dry fit prior to installation to ensure proper fit.
2. Stairs must be structurally sound and in such condition that allows for a snug fit of the tread. Specifically, the nose of stairs cannot be degraded or chipped in anyway such that the nose of the tread will not fit tightly over it. If a tight fit is not possible, the substrate must be repaired in such a way as to meet these requirements.

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C. Adhesive Selection

1. Zandur offers a variety of adhesive options to address the needs of most installations. These options have been specifically tested and verified as compatible with Zandur cork rubber by the adhesive manufacturer.
2. Prior to installation of materials, perform sub-floor moisture and pH tests. Selection of appropriate adhesives can be made only after test results are known in conjunction with the type of use the flooring will experience (heavy rolling loads, surface moisture, etc).
3. **IMPORTANT:** Top stair treads and butt joint tread installations should not be installed with Z-S Tape.
4. If Sub-Floor is non-porous, install using installation guidelines for non-porous sub-floors.

Table 2 Adhesive Selection and Suitability Chart - Treads Only

Adhesive	Time before Regular Traffic Allowed	Traffic Level of Area	Moisture Emissions/R.H.	Sub-Floor pH	Trowel	Substrate Porosity	Surface Moisture
#10 Acrylic Latex	72 hours	Regular	up to 6 lbs. / 85% or less	5-9	1/8" X 1/16" X 1/8" Sq. Notch	Porous	Light
#55 ZS Adhesive Tape	Immediate	Regular	up to 8 lbs. / 90% or less	5-9	NA	Porous / Non-Porous	Light
#15 Two-Part Urethane	72 hours	High	up to 8 lbs. / 90% or less	5-9	1/16" X 1/16" X 1/16" Sq. Notch	Porous / Non-Porous	Moderate – entryways, restaurants, locker rooms

Note: Where high sub-floor moisture and/or pH levels are found, apply a compatible moisture barrier to remediate the issue. Sub-Floors must test as noted above AFTER application of moisture barrier prior to installation. Do not use moisture barriers over non-porous substrates without consulting with Zandur.

D. Installation

1. Refer to Table 2 to select the appropriate adhesive for the installation.
2. Materials may be cut using a sharp utility knife or hooked knife and a straight edge.
3. Stair treads must be cut to fit and dry laid on each step prior to installation. Once dry fit, number the material and the step to ensure proper placement of material.
4. It is the responsibility of the installer to inspect materials when dry laid to ensure proper fit as well as to inspect materials for any defects, color variance or other imperfections. Installation signifies acceptance of substrate suitability and material.
5. **Material Handling:** It is important that treads are always carried in a way that prevents bending of the tread. Use two hands and grip the tread at the nose. If tread is allowed to bend, ripples may occur in the nose which can be difficult to remove.

6. Material Fitting:

- a. Measure the stair width in three locations (nose, base of riser and top of riser). Subtract 1/8" to each measurement to allow for expansion gap. Mark center point on back of tread. Divide stair measurement (less 1/8") in half. Using that value, measure and mark from the centerline on tread. Marking is done from the center so that profiles match at either side for the tread when cut. Cut the two ends of the tread and dry fit into place. Scribe in the two ends if necessary to achieve proper fit.
- b. To cut the stair tread depth or riser height, dry fit tread and hold riser portion in place. Mark back of riser where you wish to cut it. This will be either at the base of the riser, if the riser portion will not be installed or it will be at the top of the riser where it meets the next stair tread nose.
- c. Back cut along the line and fit into place to ensure proper fit.
- d. When properly cut and fit into place, there should be a 1/16" gap on the left and right edges of the tread.

e. Top Tread Installation

- Z-Stick tape is not recommended for top tread installation. Use #10 acrylic or #15 urethane adhesive.
- Tread must be cut to the depth where the thickness of the tread (which is tapered) matches the thickness of the flooring on the landing. The factory edge is 2.0mm in thickness.
- In all cases, the top tread edge where it meets the landing flooring must be trimmed to ensure a tight fit as the factory edge is untrimmed.

f. Butt Joint Installation

- Treads should be installed in an ashlar or staggered joint pattern. For example, if the stair is 8' wide, install 2' and 6' pieces on each step alternating position left to right.
 - Factory ends must be cut so that profiles/patterns match up. Mark the tread and cut using a straight edge or radial saw with fine cutting blade to ensure a clean cut. Properly cut pieces will not have a gap between them and stud pattern will be continuous from one piece to the next.
 - Once joint cuts are made, cut ends of treads where they will meet the wall following instructions in section III.4.F above, treating the two pieces as one in regard to making measurements from the center point.
- g. IMPORTANT: Ensure that treads are cut so that the nose of the tread mates with the nose of the stair. If any gaps are present after installation, damage to the tread will likely occur.
 - h. Upon completion of dry fitting and verification, proceed to adhere treads and risers as specified in subsequent sections.

7. Adhering Treads with ZS Adhesive Tape:

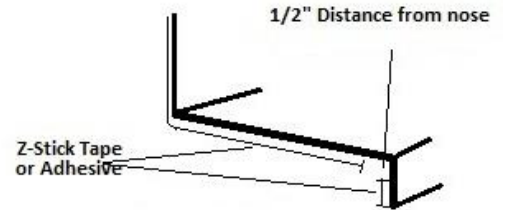
- a. Zandur treads are pre-sanded and cleaned. Denatured alcohol is not required to clean prepare the material, however ensure that there is no dust or other contaminate on the tread or riser prior to installation.
- b. Butt joint tread installations and top stair treads must be installed with #10 acrylic or #15 two part urethane adhesive to prevent the possibility of expansion or contraction of material at joints. ZS adhesive Tape is not recommended.
- c. After dry fitting treads, apply ZS adhesive tape to the riser portion keeping tape within 1/4" of the upper riser edge (use 6" tape).
- d. Install ZS Tape to tread using 6" and 4" tape. Leave a sufficient gap for nose caulk by keeping the tape 1/2" from the nose of the tread.

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- e. Apply 1" ZS Tape to the inside of the nose applying it such that there it is at least 1/2" from where the nose caulk is applied.
- f. Apply a 1/4" bead of 2 part epoxy nose caulk into nose of tread where tape has not been applied.
- g. Remove tape backing on nose only. Set tread in place, pressing firmly from the front to adhere nose while pulling up on the back so as not to spread the nose caulk. Then remove tape backing on tread (not riser portion) and push down on the tread to set into place. Do not slide into place. Treads must be installed so that no gap occurs between the nose and the substrate or damage to tread may occur.
- h. Fold back riser portion and peel off tape backing and press into place.
- i. Roll tread/riser with J-Roller to assure proper adhesion.
- j. Install the top tread using Zandur #10 or #15 two part urethane according to instructions below.
- k. In order for nose caulk to properly cure, 4-6 hours is required prior to tread use.



8. Adhering Treads and Risers with Zandur #10 Acrylic or #15 Two-Part Urethane:

- a. Zandur treads are pre-sanded and cleaned. Denatured alcohol is not required to clean prepare the material, however ensure that there is no dust or other contaminate on the tread or riser prior to installation.
- b. Start Installation from the top step and work down so as not to work on previously laid material.
- c. Risers may be installed using Zandur Z-Stick tape where other adhesives are used for treads with the exception of butt end installations where #10 acrylic adhesive is suggested.
- d. After dry fitting tread/riser, apply adhesive or ZS tape to the riser portion.
- e. Trowel selected adhesive onto back of tread with recommended trowel according to the figure above. Trowel adhesive onto nose as well or use ZS tape leaving a gap of 1/2" on both vertical and horizontal surface inside nose according to figure above.
- f. Open and Working Times
 - #10 Acrylic – Adhesive should flash off for approximately 10 minutes. After that, working time is approximately 20 minutes depending upon site conditions. If adhesive is not "wet", do not install treads. It must be scraped off and reapplied.
 - #15 2 part Urethane – Open time is not required. Install material immediately after troweling. Adhesive has a working time of approximately 45 minutes.
- g. Apply a 1/4" bead of 2 part epoxy nose caulk into nose of tread where adhesive has not been applied.
- h. Install tread by pressing firmly from the front to adhere nose first while pulling up slightly on the back so as not to spread the nose caulk. Then push down on the tread to set into place. Do not slide into place. Treads must be installed so that no gap occurs between the nose and the substrate or damage to tread may occur.
- i. Fold back riser portion, remove tape backing and press onto riser portion of stairs.
- j. Roll Tread/riser with J-Roller to assure proper adhesion.
- k. Treads installed with Urethane adhesive will easily slide under foot, therefore any foot traffic is prohibited until adhesive has set overnight. Regular traffic on all troweled adhesives should not occur for 72 hours. The use of blue masking tape may be necessary to hold tread in place prior to adhesive cure.

- I. Immediately after installation, inspect for any raised edges or adhesive on the treads and risers. Should you find any raised edges, use weight or blue masking tape to hold in place. To remove any adhesive on the tile surface, remove with a water dampened cloth. Use of any solvents can cause discoloration of the floor and should not be used. Dry adhesive can be removed from the floor by rubbing the adhesive with a water dampened cloth.

9. Visual Impairment / Grit Strips:

a. Pre-Installed Grit Strips

- Do not bend treads with grit strips installed or they may tear and/or become mis-adhered.
- After installation of tread, hand roll the strips to assure they are still well adhered.

b. Site Installation of Grit Strips

- Install pre-grooved treads and allow adhesive to cure according to instructions.
- Cut Grit strips to length. Material can be cut with a knife or scissors.
- Clean routed groove with 90% isopropyl alcohol and allow to thoroughly dry.
- Peel off backing and adhere strips ensuring to keep strip within the groove.
- Hand roll strip to ensure adhesion.

b. Replacement of Grit Strips

- In the event strips become worn or damaged, remove old strips using a blunt scraper.
- Remove all adhesive and clean with 90% isopropyl alcohol.
- Install new grit strips according to instructions above.

IV. Post-Installation Procedures

- A. Stairs must be covered immediately after installation with protective, breathable material that will not scratch or otherwise damage the floor and that does not cause a trip hazard.
- B. HVAC system must maintain temperatures in jobsite for a minimum of 72 hours according to the temperature requirements in section III.1.B. Temporary heating systems may not be used.
- C. Depending on actual conditions and adhesive system used, minimal foot traffic is possible immediately. Refer to Table 2 for information. Normal use of floor may not commence for a minimum of 24 hours after installation. Floor may not be submitted to heavy point loads for a minimum of 72 hours after installation. Heavy point loads include but are not limited to ladders, moving equipment, rolling loads and high heels. **Should circumstances require use of the floor in a period shorter than those specified in this section, contact Zandur for alternative installation systems which can significantly reduce or eliminate use waiting periods.**
- D. Post-Installation Maintenance
1. Floor must not be exposed to liquids, scrubbed or finished until adhesive has cured for 72 hours.
 2. Refer to document #502 for post installation maintenance procedures.

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V. References

A. **ASTM Standards referenced below are available at [astm.org](https://www.astm.org).**

1. F 1482-03 Standard Practice for Installation and Preparation of Panel Type Underlayment to Receive Resilient Flooring.
2. F 710-98 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
3. F1869-98 Standard Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-Floor Using Anhydrous Calcium Chloride.
4. F 2170-02 Standard Practice for Determining Relative Humidity in Concrete Floor Slabs Using in-situ Probes.

B. **All Zandur Documents are available online at zandur.com/documents**