

## Mats Inc. Installation Instructions for MultiLino WD

*These instructions supersede any verbal or written instructions from Mats Inc. representatives, and must be followed in order for the warranty to be in effect.*

### General and Delivery

- The Product is intended for installations in interior locations only.
- The Product must be installed by an installer with a minimum of five years of proven experience in performing work similar to that required for the Product. Acceptable certifications include The International Standards and Training Alliance (INSTALL), The International Certified Floorcovering Installers Association (CFI), and Flooring American University. Without specific prior experience with this specialized product, a Mats Inc. expert may be needed on site to consult on the installation. Please inquire for more information.
- Order materials in compliance with product supplier's ordering and lead time requirements, in order to take delivery at least 48 hours in advance of installation (to allow materials to acclimate to job site conditions).
- Accept delivery of materials only if they are in unopened, undamaged packaging that bears the name and brand of the manufacturer or supplier, project identification, and shipping and handling instructions.

### Storage

- Store material –floor covering, welding rods, adhesive, and maintenance products if ordered – in original packaging in areas that are enclosed and weather tight with the permanent HVAC system set at a temperature between 64°F and 80°F for a minimum of 48 hours prior to commencement of installation.
- At least 24 hours before installation, take the packaging off the floor covering and unroll to allow material to acclimatize before installation.
- **If material is flattened or distorted during storage or transporting, do not attempt to install it.**

### Materials and Accessories Required

Consult the appropriate Material Safety Data Sheets (MSDS) for proper handling of accessories.

- **Flooring:** MultiLino, Wood, Wood with Foam
- **Heat welding rods:** MultiLino must be thermally (heat) welded. For heat welding, use matching MultiLino welding rods that are 4.0mm in diameter. One welding rod is approximately 196 lineal feet. Prior to installing, check heat welding tools to be sure grooving and welding tools are appropriate for 4.0mm welding rods.
- **Tools:** 3/32" square notch trowel (recommended to use a new trowel with each bucket of adhesive), vacuum, commercial grade utility knife (recommended to use one new blade

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per length of material required), grooving machine (robotic or automated machine suggested), automated welding machine, hand held welding machine, linoleum seam cutter (recommended to use one new blade per edge), quarter moon knife with spatula/guide, triangular scraper, short scribe, combination bar scribe, 6' steel ruler, 110 lbs. linoleum pressure roller, 4 roller trough truck – must accommodate 6'7" roll width, silicone hand roller, hand groover, wood floor sander (rotary or disc style), screw gun, circular saw, jig saw

- **Adhesive:** 3 adhesives are required for MultiLino WD
  - #528 Wood to Wood Adhesive – used to glue the Wood panels together in the areas where the edges overlap
    - 13 kilos per pail (approximately 3.58 gallons)
    - Spread rate per pail: 1,000 sq.ft.
  - #611 Linoleum to Wood Adhesive– used to glue the MultiLino onto the Wood panels
    - 11 kilos per pail (approximately 3.03 gallons)
    - Spread rate per pail: 260 sq.ft.
  - #900 Leveling Compound – used to fill in the holes over the screws
    - 14 kilos per pail (approximately 3.85 gallons)
    - Spread rate per pail: 2,400 sq.ft.
- **Optional:** Underfloor moisture barrier

## Substrate Preparation

### **All substrates**

- The substrate must be sound, clean, permanently dry, perfectly smooth, and free of cracks and contaminants, including paint, old adhesive, curing compounds, oil, grease, wax, asphalt, or other contaminants that could negatively affect the performance of the adhesive. Any irregularities in the substrate will telegraph (show through) to the finished floor.
- Floor laying work shall not begin until the installer has assessed and approved the substrate and subfloor conditions.

### **Concrete substrates and subfloors**

- Ensure that the general contractor has followed ASTM F710 Standard Practice for Preparing Concrete floors to receive Resilient Flooring. ASTM F710 includes requirements for moisture and pH testing, smoothness, flatness, concrete strength, and the presence of a vapor retarder under the slab. ASTM F710 requires that all concrete slabs be tested, regardless of age or grade level, using the Calcium Chloride test (ASTM F1869) and Relative Humidity test (ASTM F2170). No other test methods are acceptable. The General Contractor and installer shall both keep records of all tests related to ASTM F710 on file.
- Test procedures shall be followed exactly in order for test results to be valid. (Building shall be at in service temperature and humidity, concrete shall be properly cleaned, etc.)

See ASTM F2170 for details. It is recommended that a qualified, independent third party conduct the tests.

- Test result requirements :
  - ASTM F1869 NO vapor barrier: maximum MVER of 5 lbs/1000 sq ft/24 hrs
  - ASTM F1869 unseamed vapor barrier: maximum MVER of 9 lbs/1000 sq ft/24 hrs
  - ASTM F1869 seamed vapor barrier: maximum MVER of 12 lbs/1000 sq ft/24 hrs
  - ASTM F2170: relative internal humidity of 65% or less
  - pH test: pH between 7.0 and 10.0
- **If concrete moisture conditions are outside the above limits, do not commence installation. Please consult with Mats Inc. immediately.**

### Site Conditions

- The flooring shall be installed only after other trades have finished, and a permanent HVAC system is operational. Temporary heat is not acceptable.
- During installation maintain the room temperature between 60°F and 70°F. Relative humidity between 50% and 60% is ideal. Excessively high or low interior air relative humidity will influence curing of floor patching materials and adhesive open times.
- Maximize fresh air ventilation by using exhaust fans, at point of use, and by opening windows and doors as necessary. Face fans out of the area where flooring is being installed, not into the area.

Because some materials used during installation may be flammable, make sure no sources of ignition or open flame exist near the use of those materials.

### Layout

- The architect or end user should be shown the proposed installation layout including any intended seam locations, with the goal of keeping seam visibility to a minimum. Position seams so that:
  - Main traffic runs parallel to – rather than across – the seam
  - Light does not strike directly across the seam.
  - The seams are away from areas subject to pivoting or rolling traffic.
  - In doorway openings connecting adjoining rooms, parallel seams are required.
- The flooring dealer or contractor shall provide a layout drawing for the intended installation that contains the following information
  - Date and scale of drawing
  - Location, swing, and clearance of all doors
  - Existing substrate/subfloor conditions
  - Notation identifying who is responsible for:
    - removal of existing floor coverings and/or underlayments
    - preparation of existing substrate
    - moisture and pH testing
    - removal of debris from new floor covering installation
    - protection of finished floor covering after installation
    - Initial maintenance procedures
  - Name of manufacturer, product style, and pattern to be installed
  - Product quantities required
  - Seam layout including pattern match requirements (if required)

- Location and type of all edge moldings and base required
- The end user shall be provided a copy of the layout drawing for approval prior to installation.

## **Installation**

### ***Underfloor - Optional***

1. Loose lay the Underfloor over the sub floor.
2. Seams may be left loose or for additional protection, they may be taped for a moisture protection level of up to 9 lbs. or welded for a moisture protection level of up to 12 lbs.

### ***Wood with Foam***

3. The Wood with Foam can only be installed on a surface once it is in compliance with ASTM F710.
4. Thoroughly sweep the substrate to remove all dirt and debris.
5. Loose lay the Wood with Foam on the sub floor (or Underfloor if used) with the foam cushions on the bottom. Use a circular saw or jig saw for precision fitting of the sheets.

### ***Wood***

6. Place the second layer of Wood over the first layer in a brick or overlapping seam pattern.
7. Place a bead of #528 Wood to Wood Adhesive around the perimeter of the bottom layer.
8. Place the top Wood panel in place and screw the two sheets together. Repeat this process across the room.
9. Fill and level the screw holes with Leveling Compound.
10. Sand the seams of the top layer of Wood with a commercial floor sanding machine (disc or rotary style) with a medium grade sandpaper.
  - Failure to sand the top layer may cause the seams to “flash” through the surface of the linoleum.

### ***MultiLino linoleum top layer***

11. Each roll is assigned its own roll number. The rolls are to be installed in an ascending roll number order across the room.
12. After the floor covering has relaxed (see Storage section for details), lay out the rolls edge to edge.
13. Once the room is squared front to back and left to right, the linoleum is to be installed from the center of the room to the outside (walls).
14. Both edges of the linoleum must be trimmed. Cut the edge of the first sheet with a linoleum edge cutter. Do not use factory edge seams.
15. Lay the second sheet over the trimmed edge of the first sheet with a one inch overlap, and then double cut to create perfectly matching edges.
16. Sheets shall be fitted and laid precisely next to each other, with a 3/16” gap between sheets.
  - Note: Stagger the seams of the linoleum and the Wood panels.

17. Repeat this process across the room, trim or scribe against the walls to remove any excess material.
18. Linoleum requires a full spread adhesion application. Mark the glue area on the floor in chalk, fold back the sheets of linoleum and apply the #611 Linoleum to Wood Adhesive with a 3/32" trowel.
19. Spread only a manageable amount of adhesive at a time.
20. Linoleum must always be set into WET adhesive.
21. Once the linoleum has been set into the adhesive, use a flat edge hammer over the seams to ensure that the seams have tacked to the adhesive.
22. To complete, roll the adhered linoleum with a 100 lbs. roller. Roll in both directions.
23. After 30 minutes, repeat the rolling of the seams and edges.

### **Heat (thermal or thread) welding**

**Important:** Proper temperature of the heat welding gun is critical to its success. The processing temperature is approximately 750 – 840 degrees Fahrenheit. Heat welding also depends on the speed of application, temperature, and accuracy of the welding tip directly on the seam. Do not put the tip on the face of the material, as doing so may burn the material. Because site conditions vary, practice the entire procedure, from grooving to glazing, on scrap material to determine the proper procedure for the product. Test seam strength by tugging at a length of welding rod: it should break before pulling away from the flooring.

24. Wait at least 24 hours after installation before doing any heat welding.
25. Set the depth of the grooving tool for 2/3 the thickness of the linoleum. The width of the groove should be 1/8" wide. Maintain a consistent depth in the groove. Keep the groove area clean and dry.
26. Weld the seam according to ASTM F1516 Standard Practice for Sealing Seams of Resilient Flooring Products by the Heat Weld Method.
27. Trim the excess welding rod in a two step process:
  - Use a quarter moon knife with a sharp spatula for the first pass, to release heat in the weld.
  - Wait for welded seam to acclimatize to the rest of the room. Then trim weld rod flush with the spatula knife, taking care not to gouge the surface. If using a seam trimmer, make sure it is constructed to ensure a two-cut method.
28. Optional step: if desired, "glaze" the surface of the finished seam. Remove the tip from the heat welding gun and apply hot air to the surface of the weld. This will darken the weld slightly and increase the gloss, which will make the seam less visible and more stain resistant.

### **Clean Up and Final Finish**

- Dust mop or commercial vacuum to clear the area of debris and grit.
- Upon completion of the job, the end user shall sign a Job Completion Ticket.
- See maintenance instructions to learn how to maintain the product after installation.