

## 5 ATHLETIC SURFACING (RUBBER SHEET GOODS)

(ADVANCE, RAMFLEX, SPORT IMPACT AND MONDOFLEX PRODUCTS)

**DISCLAIMER:** Refer to page [8](#) of this document.

*Note: For Athletic Surfacing Mondosport, refer to Mondo's Vinyl Installation Manual.*

### 5.1 SURFACE PREPARATION

#### 5.1.1 GENERAL CONTRACTOR

- a) **All subfloors must be properly prepared to provide a satisfactory bonding surface for the adhesive being used to install the resilient flooring. Refer to Mondo's current Subfloor Preparation Guide for all requirements.**
- b) The General Contractor must provide a finished concrete subfloor ready to receive Mondo's resilient rubber flooring. Subfloors must be smooth and level within a tolerance of 1/8" (3mm) in a 10' (3.05m) radius. Mondo does not recognize the "F" numbers: FF = floor flatness, FL = floor levelness. Minor surface cracks or grooves must be filled with a good quality Portland cement based patching or leveling compound such as Mapei or Ardex. High spots, bumps and peaks must be repaired prior to installation. Mondo recommends a magnesium trowel finish. **Please note that while a smooth surface is desired, a shiny, slick, non-porous or over-porous slab is not acceptable and will require additional preparation prior to installing Mondo flooring products. Once the subfloor preparation is complete, you should have a CSP (Concrete Surface Profile) of about 1.**
- c) **New concrete subfloors must be allowed to cure a minimum of 28 days prior to installing Mondo flooring.** However, drying time is typically 4 weeks for every 1" thickness of slab (i.e. a 6" slab will take approximately 24 weeks to adequately dry).
- d) Flooring installation shall not commence until the building is enclosed and all other trades have completed their work.
- e) Maintain a stable room and subfloor temperature prior to installation (before performing moisture tests), during the installation and min. 48 hours after the installation. Recommended temperature range of 65°F to 86°F (18°C to 30°C). General recommended ambient humidity control level is between 35 to 55%.
- f) Concrete substrates must be fully cured and free of any hydrostatic and/or moisture problems. **Moisture and alkalinity tests must be performed on all concrete substrates, under in-service conditions.** It is recommended to turn on the HVAC unit to ensure stable conditions during testing and installation. The pH level should be in the range of 7 to 10. Readings below 7 and in excess of 10 have been known to affect some adhesives. Moisture vapor emission content of the concrete slab must not exceed the tolerance of the adhesive specified when tested according to ASTM F1869 (anhydrous calcium chloride for moisture vapors from concrete), and relative humidity of concrete slab must not exceed the tolerance of the adhesive specified when tested according to ASTM F2170 (in-situ probes for relative humidity in concrete slab).

**NOTE: Moisture tests will help confirm whether the slab is dry enough to proceed with the installation. It does not mean the slab will always remain dry. Never attempt a moisture test until the HVAC unit has been operational for at least 7 days and/or the**

site conditions (temperature and humidity) are constant in the building and reflective of in-service conditions.

**MONDO WILL NOT GUARANTEE THE ADHESION OF A MONDO PRODUCT TO A SUBFLOOR WITH RELATIVE HUMIDITY OR MOISTURE VAPOR EMISSIONS RATES EXCEEDING THE TOLERANCE OF THE SPECIFIED ADHESIVE, WHEN TESTED IN ACCORDANCE TO ASTM F2170 AND F1869.**

### 5.1.2 FLOORING CONTRACTOR/SUBCONTRACTOR

- a) Before proceeding with any work, the substrate surface must be inspected and any visible defects on the surface such as cracks, bumps, rough areas or variations in levelness must be reported in writing to the Project Manager and the General Contractor.
- b) The Flooring Contractor/Subcontractor must verify moisture testing results to ensure they are within tolerance for the adhesive specified. Refer to Mondo's Subfloor Preparation Guide for recommendations on moisture testing. The Flooring Contractor should keep records of all tests conducted.
- c) Concrete subfloors must be dry, sufficiently porous, smooth, clean and free of paint, wax, dust, oil, sealers, grease, curing agents, surface hardeners, solvents, asphalt, old adhesives and any other contaminants that could inhibit or reduce bond strength. Concrete surfaces that are powdery or scaly are not acceptable. **Mondo recommends the removal of contaminants by way of mechanical abatement, such as a light to medium shot-blasting (ICRI CSP #3 to #5 profile). NEVER use chemical abatement methods.** Ensure removal of contaminant was successful by performing a bond test, as described in Mondo's Subfloor Preparation Guide.
- d) Prior to beginning any installation of Mondo products it is recommended that the entire room be vacuumed thoroughly to remove dust, loose dirt and debris. **DO NOT use sweeping compounds.** If desired, use damp sawdust to help with sweeping.
- e) Store sheet goods upright on a clean, dry, flat surface protected from all possible damage and exposure to harmful weather conditions.

### 5.2 INSTALLING ATHLETIC SURFACING (RUBBER SHEETS)

- a) Do not install the rubber flooring until all jobsite conditions and subfloor preparations are met and completed. Before starting any installation, verify the product for type, size, thickness, color, visual imperfections or color variations and notify the Mondo Technical Department of all apparent defects. **No claims will be accepted after the material has been installed.**
- b) Allow all materials to acclimate to site temperature prior to their use and installation.
- c) Once the above steps have been completed, proceed to square the room and make the first chalk line down the center of the room parallel to the length of the room.
- d) Unroll material in the same direction and follow the numbered roll sequence. (Review [Typical Layout Diagram](#) on page 7). Allow the athletic surfacing to relax overnight (12 hours minimum or longer if needed). Colder facility temperatures may necessitate longer relaxation time; adjust as needed.
- e) Dry lay and "cut to fit" all material to be installed on a given day, prior to any adhesion. This includes all perimeters, columns, doorways, etc., that are contained within the space.

- f) End seams should be staggered and overlapped approximately 6" (15 cm).

**Note: If a multiple color layout is to be made, double-checking measurements will avoid problems. If applicable, make sure that the seams between two colors will be in the middle of the painted game lines whenever it is possible to do so.**

- g) To make perfect long seams, the edges of the seam must be trimmed a MINIMUM of one inch (1.75cm) with the help of a chalk line and a straight edge. Trim more if needed to obtain a nice flat seam.
- h) End seams should be overlapped approximately 6" (15cm). The first edge of the seam must be trimmed a MINIMUM of 3" (7.6cm) with the help of a good straightedge. Then cut the second edge by using the first straight cut side as a guide.

**NOTE: All cuts must be slightly beveled to make sure that the seam will close without applying too much pressure. Too much bevel can result in a peaking or falling seam. Reverse beveling will result in a gapped seam. Slightly beveled refers to < 5°.**

**NOTE: A proper cut should be made in multiple passes. The first pass should score through the wear layer using a utility knife. The second pass should be made using a hook blade. Experienced installers may choose to use other types of cutting tools but end results should be the same as required.**

- i) End seams must be adjusted without applying too much pressure while ensuring that they are perfectly closed. Pressured seams will cause peaking.

**5.2.1 TROWEL SIZE**

Jobsite/substrate conditions will affect spread rate, it may be necessary to adjust trowel size or perform additional surface preparation. **It is recommended to change trowels every so often in order to assure the teeth are not worn out and that the adhesive spread is consistent throughout.**

Athletic Flooring	Recommended Trowel			
	Height	Width	Spacing	Notch
Advance and Mondoflex	1/16" (1.6mm)	1/16" (1.6mm)	3/32" (2.4mm)	U shaped
Ramflex and Sport Impact	1/16" (1.6mm)	1/16" (1.6mm)	3/32" (2.4mm)	U shaped

You may find that in some regions it is easier to locate a 1/16" x 1/16" x 1/16" (1.6mm x 1.6mm x 1.6mm) 'U' notched trowel than what is recommended above, so please note that this is also acceptable.

**5.2.2 RECOMMENDED ADHESIVES**

Mondo athletic surfacing is generally installed with PU 105 polyurethane adhesive. However, the use of EP 55 epoxy adhesive may be possible in some areas. See notes below.

**WARNING: Mondo's epoxy adhesive (EP 55) cannot be used when installing over Everlay. The only suitable adhesive for installing flooring over Everlay is polyurethane (either PU 100 or PU 105).**

**WARNING: For indoor installations over asphalt, ONLY use PU 100 (never use PU105, EP55 or MP965).**

**WARNING: Mondo EP 55 is an epoxy based adhesive that cures to a very hard state. It may not be suitable for surface impacts (i.e. free weight areas). If in doubt, please contact Mondo's Technical Department for recommendations.**

### 5.2.3 ADHESIVE APPLICATION

- a) **Refer to specified adhesive's current technical data sheet for complete instructions on use.**
- b) A bond test is recommended before proceeding with an installation to ensure good bond strength.
- c) Create a mixing station by selecting a location, away from the installation area, and protecting it with a 6' x 6' scrap piece of material, Kraft paper or other suitable product. Mondo reactive adhesives are two component adhesives and the proportions for the mix are ready to use. Pour the small container(s) of part B in the large pail of part A (NOTE: For the two containers of part B in the EP 55 adhesive, after you have poured them out into part A you can screw their caps back on and invert the bottles for a minute. This will allow you to get a few more ounces out of each bottle). Stir thoroughly with a **variable speed** mixer (6 amps minimum) until a homogeneous and smooth consistency is obtained. **The complete contents of both parts of the adhesive must be used at once.** Improper mixing may result in a poor bond. Using a variable speed mixer should not take longer than 2 minutes to mix the two parts to a creamy texture. Over mixing will cause the catalyst to set up too fast, thus reducing pot life and entrapping air which may reduce bond performance. **The adhesive has to be applied immediately after mixing, otherwise it will thicken and be much harder to trowel.**
- d) Install athletic surfacing using either the rolled method (detailed at 5.2.4) or the folded method (detailed at 5.2.5). Select the appropriate method for your project, and continue from that point.

### 5.2.4 ROLLED METHOD

- a) Continued from 5.2.3 d). Roll back the material starting at one end (head seam) to approximately half of the roll length.
- b) When starting the first row, apply adhesive evenly up to 2" (5cm), or 6" (15cm) if installing Sport Impact or Ramflex athletic surfacing, from both edges of long seams (adjacent rolls) and stopping 6" before final head seam location in that shot. The head seam will be glued last. Special care must be taken that the adhesive is not applied too thinly.
- c) **Carefully place material into fresh adhesive; do not flop material into adhesive as it may cause air entrapment.** Proper adhesive transfer should be confirmed periodically by lifting the rubber surfacing to inspect its backing for a **minimum 90% transfer.**
- d) When starting the second row, apply adhesive underneath the long seam to be completed (i.e. the 2" (5cm) of the previous row) and up to 2" (5cm) from the next adjacent row. Adjust distance accordingly if installing Sport Impact or Ramflex.
- e) End seams must be adjusted without applying too much pressure while ensuring that they are perfectly closed. Pressured seams can cause peaking.
- f) Immediately remove any dropped or oozed adhesive with a damp cloth while it is still fresh; dried adhesive may be very difficult to remove. Mondo only recommends using denatured

alcohol for polyurethanes and epoxies. **Do not use solvent based products to remove adhesive spills as they could discolor the surfacing.**

- g) At the end of the day stop the installation in the center of shot, not at a seam. If installing Sport Impact or Ramflex stop at 6" (15cm). **DO NOT STOP AT A SEAM EDGE.** When continuing the next day make sure to get adhesive all the way back to the finishing adhesive line from the day before.
- h) Use a lightweight 100lb (45kg) roller to eliminate entrapped air, which could remain between the subfloor and the athletic flooring. Roll in multiple directions, first rolling across width then along the roll length.
- i) Weights will need to be applied over every seam. Prior to applying the weights, We recommend that you manually work the seams so that they are perfectly flat and tight (buted together and never pressured to avoid peaking), using 2" (5cm) masking tape to help close small gaps in the seams and keep the material in place while the adhesive sets. **Never use duct tape.** Duct tape adhesive will chemically react with the flooring surface and leave permanent residue. Even if the end or head seams look perfect, always apply masking tape on them to keep them perfectly closed until full cure.
- j) Proceed to section 5.2.6 WEIGHT CHART and apply the necessary amount of bricks.

#### **5.2.5 FOLDED METHOD**

- a) Continued from 5.2.3 d). Carefully fold open two adjacent shots, utilizing 2 to 3 men, for the entire roll length.
- b) Apply adhesive carefully down the exposed subfloor up to the edge of the folded back material on both sides. Be careful to keep a very straight adhesive line down the room length. It may be helpful to drop a chalk line here as a guide. Special care must be taken that the adhesive is not applied too thinly.
- c) **Carefully place material into fresh adhesive; do not flop material into adhesive as it may cause air entrapment.** Proper adhesive transfer should be confirmed periodically by lifting the rubber surfacing to inspect its backing for a **minimum 90% transfer.**
- d) An entire row should be glued to the floor before starting another row. Continue this procedure across the room. Make sure to fold successive shots back enough to expose the previous adhesive line.
- e) End seams must be adjusted without applying too much pressure while ensuring that they are perfectly closed. Pressured seams can cause peaking.
- f) Immediately remove any dropped or oozed adhesive with a damp cloth while it is still fresh; dried adhesive may be very difficult to remove. Mondo only recommends using denatured alcohol for polyurethanes and epoxies. **Do not use solvent based products to remove adhesive spills as they could discolor the surfacing.**
- g) At the end of the day stop the installation in the center of shot, not at a seam. **DO NOT STOP AT A SEAM EDGE.** When continuing the next day make sure to get adhesive all the way back to the finishing adhesive line from the day before.

- h) Use a lightweight 100lbs (45kg) roller to eliminate entrapped air that could remain between the subfloor and the athletic flooring. Roll in multiple directions, first rolling across width then along the roll length.
- i) Weights will need to be applied over every seam. Prior to applying the weights, We recommend that you manually work the seams so that they are perfectly flat and tight (butted together and never pressured to avoid peaking), using 2" (5cm) masking tape to help close small gaps in the seams and keep the material in place while the adhesive sets. **Never use duct tape.** Duct tape adhesive will chemically react with the flooring surface and leave permanent residue. Even if the end or head seams look perfect, always apply masking tape on them to keep them perfectly closed until full cure.
- j) Proceed to section 5.2.6 WEIGHT CHART and apply the necessary amount of bricks.

**5.2.6 WEIGHT CHART**

- a) **WEIGHTS MUST BE APPLIED OVER EVERY SEAM; COMPLETELY COVER THE SEAM. Grey concrete utility bricks (2" x 4" x 8") are the only suitable weights. DO NOT SUBSTITUT WITH COLORED BRICKS.** Weights must be kept on a minimum of 12 to 24 hours, depending on site temperature and adhesive curing. Weighting the seams with bricks will prevent them from peaking. It is also necessary to brick the perimeter and all edges (doorways, walls, columns, sleeves, etc.).

**Suggested Brick Quantities for Weighing Seams**

	<b>Long Seams</b>	<b>Head Seams</b>
<b>Advance (New Generation)</b>	<b>1</b>	<b>4</b>
<b>Advance (Vulcanized)</b>	<b>2</b>	<b>5</b>
<b>Sport Impact</b>	<b>1</b>	<b>3</b>
<b>Ramflex</b>	<b>1</b>	<b>3</b>
<b>Mondoflex I and Mondoflex II</b>	<b>1</b>	<b>3</b>

**NOTE:** The above listed quantities are merely suggestions. Specific site and environmental conditions could necessitate additional bricks on the seams. Enough bricks should be used to effectively keep the material flat in the adhesive for the required amount of time listed above. Never use pieces of wood, boxes of other materials, sand bags, cinder blocks or any other substitute to weight the seams. **GREY CONCRETE UTILITY BRICKS, 2" X 4' X 8", ARE THE ONLY SUITABLE WEIGHTS.** Lack of weight on the seams while the adhesive is setting can result in peaking.

**5.2.7 TRAFFIC AND MAINTENANCE**

- a) **No foot traffic shall be allowed on the material for a period of 24 hours after the installation** and for a longer period of time if the temperature is below 72°F (22°C). **Prohibit heavy traffic or rolling loads for a period of 72 hours.** 1/8" Masonite or 1/4" plywood can be used to protect the material for the 24 to 72-hour period.
- b) Initial cleaning should only be performed a minimum of 72 hours after the athletic surfacing has been completely installed, or wait a minimum of 30 days before scrubbing the surfacing if it has freshly painted lines or logos.

**5.2.8 TYPICAL LAYOUT OF MONDO SHEET GOODS**

Roll #1	End of Roll #3	Roll #6	End of Roll #8	Roll #11	End of Roll #13
Roll #2	Roll #4		Roll #9		Roll #12
	Roll #5	Roll #7	Roll #10	Start of Roll #13	
Start of Roll #3	Start of Roll #8				

## DISCLAIMER

These instructions conform to commonly accepted installation techniques in use with Mondo floor coverings. However, Mondo will not accept any liability whatsoever for any incorrect implementation of these instructions nor for any failure of equipment, paint & primers, leveling compounds, adhesives or other products not manufactured by Mondo that may be referenced in these instructions nor for any adverse handling, climatic or environmental conditions that may affect such installation.

The above installation recommendations are provided for general guidance only. Mondo assumes no responsibility neither for actual work performed nor for loss or damage that may result from the use of this information due to variations of processing or working conditions outside our control. Users are advised to confirm suitability of products by their own tests.

Warranty only extends to quality and performance of rubber flooring.

**WARNING: Should you have any concerns or be unsure about subfloor conditions or installation procedures, please call our Technical Department.**