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Note: This document supersedes all printed and electronic Installation and Technical Guides previously distributed for Metrostone™.



METROSTONE™

Waterproof SPC Tile with Grout Effect by METROFLOR®



Installation Manual

DROPLOCK
100

**100% WATERPROOF
FLOATING LUXURY VINYL FLOOR**

PRE-INSTALLATION ESSENTIALS

Your job will be smooth, fast and easy when you follow the essentials every time you install Metrostone.

EVALUATE THE JOB SITE

Exterior

Damage caused by water and high humidity should be addressed prior to installing Metrostone.

- Examine the driveway and landscaping surrounding the building. Be sure that they slope and direct water away from the foundation.
- Inspect gutters, down spouts and drains for blockage. Remove clogs caused by leaves, dirt and debris, allowing runoff to flow freely away from the foundation.
- Check crawl spaces for cross-ventilation air vents equaling at least 1.5% per 100 Sq. Ft. (9.3 Sq. M.) of floor space. Crawl spaces should measure a minimum of 18" (457.2mm) high and should be insulated according to the latest building code requirements. The ground should be covered with a minimum 6-mil vapor barrier.

Three-Season Rooms (Residential Applications Only)

Metrostone is permitted in residential "three-season rooms" when installed in strict compliance with the instructions listed below.

- Maximum room size of 500 Sq. Ft. (46.5 Sq. M.)
- Room must be completely enclosed (roof, floor, walls and windows) and not exposed to any outside elements.
- Installation must occur at room temperature between 50°F and 100°F (10°C and 38°C).
- Allow 3/8" (10mm) expansion space around perimeter and all fixed objects

Interior

Job site moisture issues should be addressed and corrected prior to installation.

- Examine the installation site for leaky plumbing, including leaks from water heaters, dishwashers, washing machines, or any other water-bearing fixtures or pipes.
- Inspect substrates for level. They must be sturdy, sound, and flat within 3/16" (4.76mm) in a 10' (3.05 M) radius without any abrupt height differences. The substrate should not slope more than 1" (25.4mm) per 6' (1.83 M) in any direction.
- All concrete substrates must be tested for relative humidity, moisture and pH before installing Metrostone. Test results should not exceed 85% relative humidity (RH). The Calcium Chloride Test for moisture should be no more than 8lbs per one-thousand square feet in 24 hours MVER, (Moisture Vapor Emission Rating) and pH tests for alkalinity levels should register between 7 and 9.

- All wood floors must be checked for moisture. Obvious signs of moisture issues include warping, peaking, degradation of the integrity of the substrate, rusted fasteners, and rusted floor registers. Even if obvious signs are not present, the material should be tested using a wood moisture meter; moisture levels should not exceed 14%.

ATTENTION: Mold and mildew grow only in the presence of moisture. Job site moisture issues should be addressed and corrected prior to installation. Please visit www.epa.gov/mold for information about safely preventing and removing mold, mildew and other biological pollutants.

IDENTIFY YOUR SUBSTRATE

Approved Substrates

Metrostone is suitable for use over a wide variety of substrates.

Concrete

Metrostone is waterproof, but job site moisture issues should be addressed and corrected prior to installation to prevent serious damage to the substrate and surrounding structure, and to discourage the growth of mold and mildew. Concrete substrates should be prepared in accordance to the most current version of ASTM F710 (Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring). The substrate must be sturdy, sound, and flat within 3/16" (4.76mm) in a 10' (3.05 M) radius without any abrupt height differences. The substrate should not slope more than 1" (25.4mm) per 6' (1.83 M) in any direction. Moisture and alkalinity tests should be performed on all concrete substrates regardless of grade level or age of slab. Perform either ASTM F2170 In-Situ Relative Humidity (RH) test or ASTM F1869 Calcium Chloride Moisture Test (MVER: Moisture Vapor Emission Rating). Perform pH test per ASTM F710 to determine alkalinity of the slab. RH Test results should not exceed 85% relative humidity. The Calcium Chloride Test for moisture should measure no more than 8lbs per one-thousand square feet in 24 hours MVER, and pH tests for alkalinity levels should register between 7 and 9. Electronic meter testing is not considered a replacement for a Calcium Chloride Test or Relative Humidity Test. All moisture tests should be conducted prior to installation to ensure that moisture is at recommended levels. Follow current ASTM F710 guidelines. Metroflor Corp. highly recommends that substrate moisture and pH testing be conducted by an ICRI (International Concrete Repair Institute) tier 2 certified technician.

Radiant Heat

Radiant heating systems must be cast ½" (12.7mm) below the surface of the substrate, and should be operating at least 2 weeks before installing Metrostone. Set the temperature of the radiant heating system to 68°F 48 hours before, during, and 72 hours after installation. The temperature of the radiant heat floor may be increased gradually 72 hours after installation, but the surface temperature of the substrate should never exceed 85°F. Contact the manufacturer of your radiant heating system for further recommendations.

Plywood, OSB, Particleboard & Chipboard

Wood substrates must be A.P.A. approved with a minimum grade of "BB" or "CC". They must be sturdy, sound, and flat within ⅜" (4.76mm) in a 10' (3.05 M) radius without any abrupt height differences. The substrate should not slope more than 1" (25.4mm) per 6' (1.83 M) in any direction Metroflor Corp. recommends performing moisture tests prior to installation to prevent serious damage to the substrate and surrounding structure, and to discourage the growth of mold and mildew. Moisture readings should never exceed 14% for plywood, OSB, particleboard and chipboard substrates. If moisture readings exceed 14%, it is advisable to correct moisture issues at the jobsite before installing Metrostone.

Tile, Terrazzo, Asbestos Tile, Resilient Tile, Non-Cushion Sheet Vinyl, and Metal

Existing floors must be firmly attached to the structural floor. The substrate must be sturdy, sound, and flat within ⅜" (4.76mm) in a 10' (3.05 M) radius without any abrupt height differences. The substrate should not slope more than 1" (25.4mm) per 6' (1.83 M) in any direction. When installing Metrostone in commercial settings, fill in grout lines on ceramic tiles, terrazzo, quarry tiles and similar floors with an appropriate polymer-modified patching compound.

Glue Down Semi Wet-Set Installation Method (Residential Only)

- Prevail® 3500 Hard-Set Adhesive must be used in a semi wet-set application. Other adhesives such as a Pressure Sensitive Adhesive in a dry-to-touch application are not recommended and should not be used.
- Absorbent (porous) substrates: flooring can be immediately set into the adhesive.
- Non-absorbent (non-porous) substrates: After applying the adhesive allow the 'valleys' to begin turning clear. Install Metrostone before the adhesive becomes dry to touch.
- The substrate must be sturdy, sound, and flat within ⅜" (4.76mm) in a 10' (3.05 M) radius. Additionally, there is zero tolerance for abrupt height variations. All abrupt height variations must be addressed by sanding or grinding and leveling the floor perfectly flat.

- Metrostone cannot be both glued and floated within a given assembly. A T-molding is required to separate areas of differing application methodologies.

Installation:

Prevail 3500 Hard Set Adhesive:

⅜" x ⅜" x ⅜" V-notch trowel = 165-200 Sq. Ft./Gallon

Determine starting wall and create work zones that are no wider than the installers comfortable arm reach and in multiples of the plank or tile width. Measure and snap chalk lines parallel to the starting wall and spread adhesive within the work zone. Install Metrostone using Prevail 3500 per the instructions above. Roll with a 100lb. roller when complete. Continue installation by repeating the process until the room is complete.

NON-APPROVED SUBSTRATES

Remove the floors noted below and remove old adhesive before installing Metrostone. Encapsulate adhesive and cutback residue.

- Carpeting/Carpet Pad
- Cushion Back Sheet Vinyl
- Engineered Hardwood Over Concrete
- Floating Floors
- Hardwood Over Concrete
- Parquet Over Concrete
- Sleeper Substrates

NOTE: Various Federal, State and Local government agencies have established regulations governing the removal of in-place asbestos-containing material. If you contemplate the removal of a resilient floor covering structure that contains (or is presumed to contain) asbestos, you must review and comply with all applicable regulations. Do not sand, dry sweep, dry scrape, drill, saw, bead blast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphalt "cut-back" adhesive, or other adhesive. These products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of bodily harm. Unless positively certain that the product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content. The RFCI's Recommended Work Practices for Removal of Resilient Floor Covering are a defined set of instructions addressed to the task of removing all resilient floor covering structures. For further information, contact the Resilient Floor Covering Institute website at www.rfci.com

PREPARE THE JOB SITE

Careful preparation is the key to outstanding results.

- **Install Permanent Exterior Doors and Windows**
- **Turn on HVAC at Least One Week Prior to Installation** Room temperature should be maintained between 50°F – 100°F at least 48 hours prior to installation.
- **All Trades Must Finish Before Installing Metrostone.**
- **Perform Recommended Moisture and pH Tests** Qualify the substrate by performing the appropriate Moisture and pH Tests. See the “Identify Your Substrate” section of this manual (pages 3-4) for further information about suggested tests.
- **Level Uneven Surfaces** Fill large cracks and voids with an appropriate polymer-modified patching compound. The substrate must be sturdy, sound, and flat within $\frac{3}{16}$ " (4.76mm) in a 10' (3.05 M) radius. Additionally, there is zero tolerance for abrupt height variations. All abrupt height variations must be addressed by sanding or gring and leveling the floor perfectly flat. The substrate should not slope more than 1" (25.4mm) per 6' (1.83 M) in any direction.
- **Remove Floor Moldings** Quarter round and wall base should be carefully removed before installation begins. It will be used to conceal the expansion space once the job is finished.
- **Fill Grout Joints** Refer to chart on page 6.
- **Remove Non-approved Substrates**
- **Remove Old Adhesive** Old adhesive must be removed so all that remains is a thin, smooth film. Prepare and encapsulate the residue using an appropriate polymer-modified patching compound.
- **Undercut Wood Door Casings** Wood door casings should be undercut so that Metrostone will fit neatly beneath them, concealing the expansion space. Position the plank on the substrate against the door casing. Lay the handsaw flat against the scrap plank and carefully cut the door casing to the height of the plank (**See Image A**).
- **Cut Around Metal Door Casings** Do not cut metal door casings. Cut Metrostone around them, leaving the appropriate expansion space. After installation, fill the space with a coordinating premium waterproof 100% silicone sealant.
- **Clean Up the Job Site** Remove all debris, sweep and vacuum the substrate. Smooth, non-absorbent floors should be damp-mopped after vacuuming and allowed to dry thoroughly before installing Metrostone. All dust must be removed prior to installation.



Installing Cabinets On Top Of Metrostone (Residential Only)

In residential applications only, Metrostone may be installed and cabinets set on top so long as the application complies with the instructions listed below.

- The substrate must be sturdy, sound, and flat within $\frac{3}{16}$ " (4.76mm) in a 10' (3.05 M) radius. Additionally, there is zero tolerance for abrupt height variations. All abrupt height variations must be addressed by sanding or grinding and leveling the floor perfectly flat.
- Cabinets or similar fixtures cannot be secured or fixed (via screws, nails, etc.) to the substrate through the Metrostone flooring.
- Proper perimeter expansion space must be provided around all walls and vertical obstructions including pipes or other objects within the “footprint” of the cabinets.

CHECK RUN NUMBERS AND MANUFACTURE DATE

Locate the run number on the short end of each carton and verify that all of the material for your job is from the same run. Minor shade variations within the same run number contribute to the natural look of Metrostone. To avoid noticeable shade variations, do not install material from different runs across large expanses.

To determine manufacture date, locate the run number on the short end of the carton. It is the eight-digit number separated by decimal points beginning with the two-digit day, then the two-digit month, and finally the four-digit year.

Run Number/Manufacture Date

29.10.2013
DAY.MONTH.YEAR

KEY INSTALLATION CONSIDERATIONS

RESIDENTIAL

COMMERCIAL

Substrate Flatness Tolerances	3/16" (4.76mm) in a 10' (3.05 M) radius. without any abrupt height variations. Slope no more than 1" (25.4mm) per 6' (1.83 M)	3/16" (4.76mm) in a 10' (3.05 M) radius. without any abrupt height variations. Slope no more than 1" (25.4mm) per 6' (1.83 M)
Vapor Barrier (6 mil polyfilm)	Not Required	Not Required
Is Underlayment (Pad) Required	No – Metrostone includes an integral pre-attached pad	No – Metrostone includes an integral pre-attached pad
Acclimation Requirements	Not Required*	48 hours
Maximum Assembly Size**	Expanses greater than 100' (30.48 M) in any direction will require a T-molding transition to divide the assembly into smaller sections.	Expanses greater than 100' (30.48 M) in any direction will require a T-molding transition to divide the assembly into smaller sections.
Separating Adjoining Spaces	Not Required	T-Molding is required to separate adjoining spaces interconnected by a narrow opening, such as a doorway between rooms
Installation Over Existing Ceramic Tile Floor	Filling Grout Joints Not Required (Follow Substrate Flatness Tolerances) Required for Glue Down applications	Filling Grout Joints Required
Glue Down Installation	Not Required / see page Page 4, Section Glue Down Option	Not Required/Not Recommended
Substrate RH/MVER Recommendations	85% RH/8 lbs MVER	85% RH/8 lbs MVER
Radiant Heat	Approved – Substrate surface temperature not to exceed 85° F	Approved – Substrate surface temperature not to exceed 85° F
3-Season/Non-Climate Controlled Environments	Not to Exceed 500 Sq. Ft. (46.45 Sq. M.)	Not Recommended
Perimeter Expansion Requirements	1/4" (6.35mm) around perimeter walls & heavy fixed objects such as cabinetry	3/8" (9.5mm) around perimeter walls & heavy fixed objects such as cabinetry**
Optimal Interior Environmental Conditions	50°F – 100°F / 40% – 60% RH 65°F – 85°F during Glue Down installation	50°F – 100°F / 40% – 60% RH
Definition of "Waterproof"	Structural integrity of flooring will not degrade due to contact with moisture/water***	Structural integrity of flooring will not degrade due to contact with moisture/water***

*Metrostone flooring is more dimensionally stable than typical floating wood or vinyl based flooring products. Acclimation of Metrostone flooring for residential applications is generally not required. However, Metrostone flooring subjected to extreme hot or cold conditions can cause the material to become too flexible or rigid, making the material difficult to install and potentially causing damage to the locking system. Optimum material temperature range for installation is 50°F – 100°F.

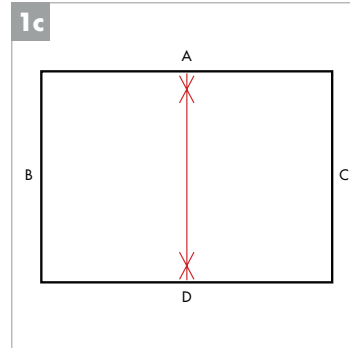
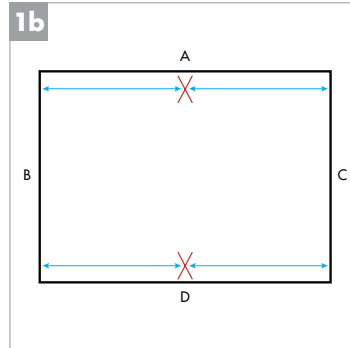
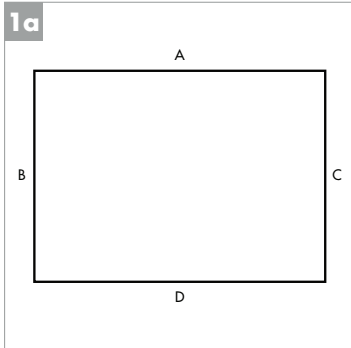
**If installing Metrostone in an environment that has an expanse greater than 100', a T-Molding should be utilized to separate the floor into separate sections no larger than 100 lineal feet in any direction.

***While Metrostone is Waterproof, it is not intended for use as a moisture mitigation system.

WARNING: Only installation techniques described in this installation guide are warranted. Metroflor Corporation does not warrant Metrostone installations involving profile milling, such as 45-degree mitered corners and serpentine edges. Please refer to the Metrostone warranty for complete warranty details and exclusions.

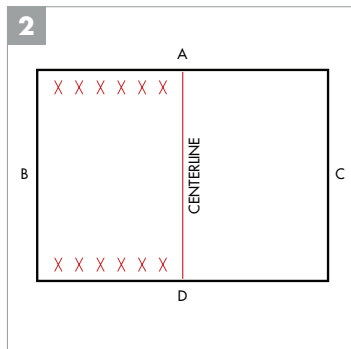
Installation for Metrostone with **DROPLOCK 100** Locking Profile

Groove Tongue



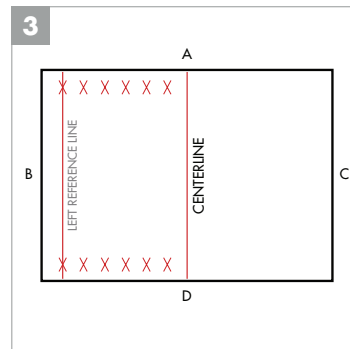
BALANCE THE LENGTH

The project's layout should always be discussed and approved by the end-user. Define walls A, B, C, and D (step 1A). Measure and mark the center point of the room near wall A, and again near wall D (step 1B). Snap a chalk line connecting these two points (step 1C). This is the centerline of the room.



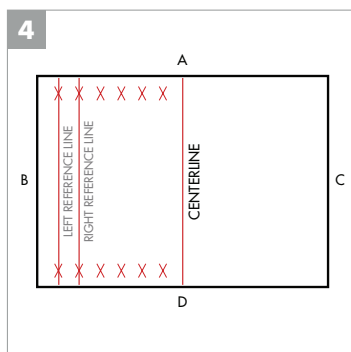
DETERMINE THE POSITION OF THE REFERENCES LINES

Begin at the center line near wall A, measure and mark in increments of 12" (304.8mm) working toward wall B. Continue until no further increments can be marked. Repeat this process again near wall D.



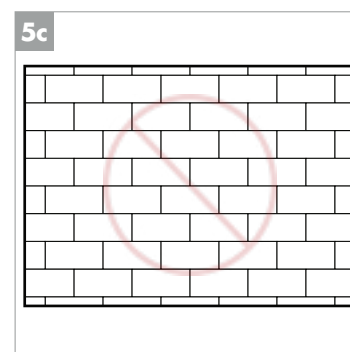
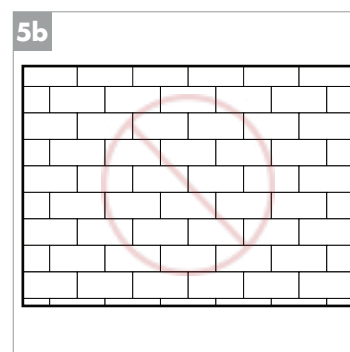
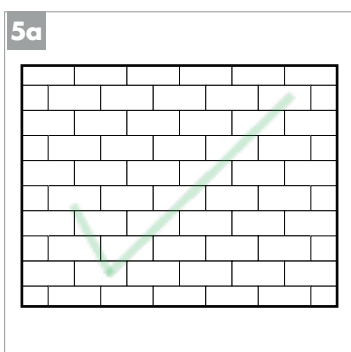
ESTABLISH LEFT-REFERENCE-LINE

The final increment marks nearest wall B will be used to create the left-reference-line. Snap a chalk line connecting the last two marks. This line will indicate one of two positions for the staggered pattern.



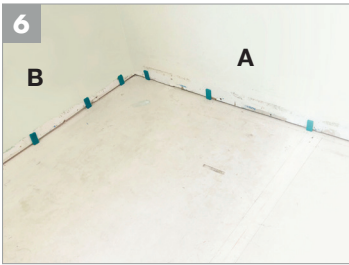
ESTABLISH RIGHT-REFERENCE-LINE

Using the marks immediately to the right of the left-reference-line, snap a chalk line connecting these points. This is the right-reference-line and indicates the other position for the staggered pattern.



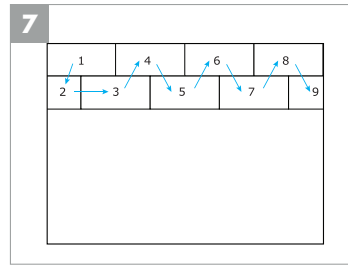
BALANCE THE WIDTH

Balance the width of the layout so the first and last rows are of equal width. If the width of the first and last rows are less than half the width of a tile, the placement of the rows may be offset by 6" (152.4mm).



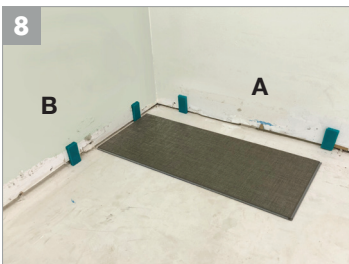
SET SPACERS

Create the required expansion space between the perimeter tiles and the walls using spacers. Place spacers equaling the thickness for required expansion between tiles and wall on short and long ends of tile. Do not remove them until the installation is complete.



UNDERSTANDING ORDER OF INSTALLATION

See illustration for sequence. Installation will move from left to right beginning in the left corner with tongue side of long edge facing the wall. For the first two rows only, installation will alternate back and forth between rows one and two.



INSTALL FIRST TILE

Measure, mark, and cut tile to ensure Grout Effect Edge aligns with right-reference-line. Position the first tile a few inches from wall A and flush against the spacers on wall B.



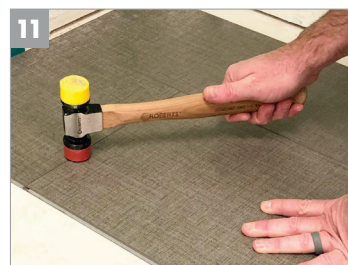
FIRST TILE SECOND ROW

Measure, mark, and cut tile to ensure Grout Effect Edge aligns with left-reference-line. Insert the long tongue edge of the second tile into the long groove edge of the first tile. Be sure product is fully engaged by carefully tapping along the long edge using the Prevail tapping block.



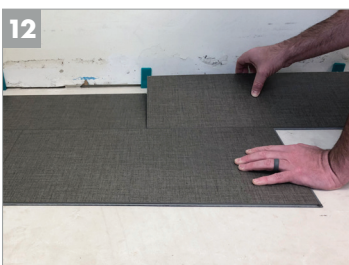
SECOND TILE SECOND ROW

Align and insert the long tongue edge into the long groove edge. Fully engage the joint by carefully tapping the long groove edge using the Prevail tapping block.



ENGAGE SHORT JOINT

Gently tap down the short joint using a lightweight soft-faced hammer.



SECOND TILE FIRST ROW

Position the long groove edge into the tongue of the second tile in the second row. Fully engage the joint by tapping the long groove edge of the tile using the Prevail tapping block before engaging short joint with soft-faced hammer. Repeat the same installation pattern until you reach the opposite wall and cannot install another full tile.



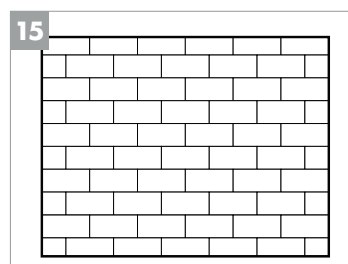
INSTALL THE LAST PIECES OF FIRST AND SECOND ROW

Cut the last pieces of the first and second row to fit, while maintaining proper expansion space between the flooring and wall C. Install the pieces as before.



SLIDE ASSEMBLY

Carefully slide entire assembly against the spacers on wall A



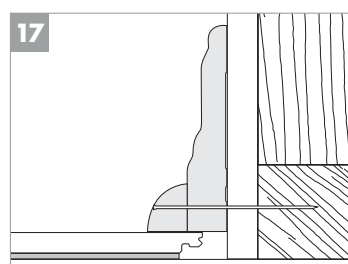
INSTALL REMAINING ROWS

Install the remaining material, one row after another. Always engaging the long joints by tapping the long groove edge of the tile, using the Prevail tapping block, and subsequently tapping down the short joint using a soft faced hammer.



INSTALL THE LAST ROW

Cut the final row of tiles to fit along the wall. Use a pull bar to lock the long edges together. Do not use the pull bar on the short edges.



FINISH THE PROJECT

Remove spacers. Cover expansion space with quarter round or other trim, being sure not to restrict or fasten the flooring.

GENERAL CARE & MAINTENANCE

ROUTINE CARE & MAINTENANCE

- Sweep, dust mop or vacuum daily. Do not use vacuums with any type of beater bar assembly.
- Lightly damp mop with Prevail Neutral Cleaner. Remove excess soil by carefully scrubbing with a soft nylon brush or magic eraser sponge and Prevail Neutral Cleaner.
- Remove scuffs using Prevail Neutral Cleaner and a soft nylon brush or magic eraser sponge.
- Heavily soiled floors may require an occasional deep cleaning using Prevail Neutral Cleaner and a low-speed buffer not exceeding 175 RPM. Fit the buffer with a red or white scrubbing pad and work the solution over the floor. Remove the dirty residue by damp mopping with clear water.
- Remove standing water, pet urine and other liquids promptly. Follow with Prevail 1-Step Neutral Cleaner or Prevail Ready to Use Neutral Cleaner.

PREVENTIVE CARE

- Use non-staining walk-off mats at all outside entrances.
- Use flat glides at least 2" (50.8mm) in diameter under furniture legs to prevent indentations and scratches.
- Use broad surface non-staining casters at least 2" (50.8mm) in diameter on rolling furniture.
- Do not use vinegar, polishes, waxes, oil soaps, abrasive cleaners, harsh detergents, "mop and shine" products or solvents.
- Do not expose to intense direct sunlight for prolonged periods.
- Do not use steam cleaners.
- Do not flood floor or subject to standing liquids, including pet urine.

WARRANTY REGISTRATION

To register and activate your product warranty, please visit metroflorusa.com. The registration information you provide will be used only to register your purchase and for no other purpose.



For further information, please call Metroflor Customer Service at **(888) 235-6672**, or visit our website at metroflorusa.com.