ROPPE.

TECHNICAL DATA SHEET

tuflex™

RECYCLED RUBBER TILE

Product Description

Tuflex Recycled Rubber Tiles is a rubber flooring product designed for interior and exterior sports and commercial applications. Tuflex is PVC free and contains 71.5% post-consumer recycled content. Because of its durability and resilience, Tuflex is used in many professional sports facilities.

The manufacturing process for Tuflex consists of a patented process that uses recycled rubber to create vulcanized, smooth surfaced tile. Tuflex's smooth surface make it easier to clean and maintain than many other recycled rubber flooring products.

Tuflex has an appealing visual appearance, as well as enhanced slip resistance, sound and shock absorption and softness under foot.

Ideal For:

Sporting Facilities: weight rooms, locker rooms and areas with cleats.
Animal Facilities: veterinarian office, doggy day-care and dog walks
Education: multi-purpose areas where heavy foot traffic is present
Healthcare: physical therapy, stretching and activity areas

Features

- **Non-Porous Material**
- **PVC Free**
- **Made From Recycled Materials**
- **Easy To Maintain**
- **Qualifies for LEED Credits**
- **Shock-Absorbing**
- **Noise-Reducing Material**
- **Extremely Durable**
- **Excellent Chemical Resistance**
- **Excellent Slip Resistance**

Technical Data

Nominal Dimensions - Square Edge:	**27" x 27" x 3/8" (9mm)**
Nominal Dimensions - Interlocking:	**25 ¾" x 25 ¾" x 3/8" (9mm)**
Finish:	**Smooth**
Area Per Tile:	**5.06 sq. ft. (square edge)**
	4.6 sq. ft. (interlocking)
Weight Per Tile:	**~11 Lbs. (square edge)**
	~10 lbs. (interlocking)
Quantity Per Pallet:	**100 tiles**
ASTM D2047 – Coefficient of Friction:	**>0.8**
ASTM E648 (NFPA 253) - Critical Radiant Flux:	**Class II, >0.22 W/cm2**
ASTM D2240 - Hardness:	**Shore A; 60 +/- 5**
ASTM F970 - Static Load Limit:	**Pass**
ASTM F970 (Modified) - Max Weight:	**500 PSI**
ASTM E90 Sound Transmission Loss:	**52 STC***
ASTM E492 Impact Sound Transmission:	**52 IIC***
ASTM E2179 Delta Impact Insulation:	**22 ΔIIC***
Acclimation Time:	**48 Hours**
Storage & Acclimation Temperature:	**65° - 85° F**

** 6" Concrete, No Drop Ceiling*

Additional Information

Approved Adhesives
Excelsior MS-700 Modifed Silane Adhesive
Excelsior EW-710 Epoxy Wet-Set Adhesive

Approved Floor Finishes
Excelsior PF-960 Performance Gloss Finish
Excelsior PMF-970 Performance Matte Finish
Tuflex requires that a finish be installed following installation.

Custom Offerings
At a minimum of 2000 sq. ft., product color may be altered to match other colors by request.

Availability, Cost & Samples
Roppe Flooring products are sold through distribution. To locate the nearest distributor, visit **roppe.com** or send an e-mail to **support@roppe.com.**

Technical Documents & Support
Additional product resources and technical documents are available online at **roppe.com**. For additional technical support, send an e-mail to **solutions@rhctechnical.com**.

1. PRE-INSTALLATION CHECKLIST

- Consult all associated product literature concerning adhesive installation, maintenance and warranty prior to installation of flooring.
- Allow all trades to complete work prior to installation.
- Deliver all materials to the installation location in its original packaging with labels intact.
- Do not stack pallets to avoid damage.
- Remove any plastic and strapping from product after delivery.
- Inspect all material for proper type, color and matching lot numbers if appropriate.
- Ensure that all adhesives intended for installation are approved for use with flooring material.
- Ensure installation area and material storage temperatures are between 65° F (19° C) and 85° F (30° C) for at least 48 hours before, during and after installation.
- Ensure HVAC system is operational and fully functioning at normal operating conditions.
- Turn off radiant-heated flooring systems 48 hours prior to installation. 48 hours after installation, gradually increase the temperature over the course of 24 hours to a maximum temperature of 85°F (29.5° C).
- Protect installation area from extreme temperature changes, such as heat and freezing, as well as direct sunlight for at least 48 hours before, during and after installation.
- Ensure all substrate preparation and moisture testing requirements have been performed, read and/or understood by all interested parties.
- Do not proceed with installation until all conditions have been met.

2. PRODUCT LIMITATIONS

Do not install materials over LVT, cushioned vinyl, hardwood flooring, cork, rubber, or asphaltic materials. Do not install in areas that may be subjected to sharp, pointed objects, such as pointed metal spikes. When installing in areas that may be exposed to ice skates, ensure skate guards are worn. Product is not intended for use in areas that may be subjected to deliberate abuse and damage. Do not allow product to be directly exposed to extreme heat sources, such as radiators, ovens or other high-heat equipment. May be susceptible to staining from rubber tires, casters or rubber-backed walk-off mats, as well as harsh disinfectants, cleaning agents, dyes or other harsh chemicals – ensure all chemicals and materials that may come in contact with flooring surface will not stain, mar or otherwise damage the flooring material prior to use. Flooring material must receive a floor finish prior to final usage.

3. SUBSTRATE PREPARATION

All substrates must be prepared according to ASTM F710, as well as applicable ACI and RFCI guidelines. Substrates must clean, smooth, permanently dry, flat, and structurally sound. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.

All substrates must have any and all existing adhesives, materials, contaminants or bond-breakers mechanically removed via scraping, sanding, grinding or buffing with a 25 grit DiamaBrush Prep Plus tool prior to adhesive installation. In extreme situations, shotblasting may be required. Mechanical preparation must expose at least 90% of the original substrate. Following cleaning and removal, all substrates must be vacuumed with a flat vacuum attachment or damp mopped with clean, potable water to remove all surface dust. Sweeping without vacuuming or damp mopping will not be acceptable.

All porous substrates must be tested per ASTM F3191 to confirm porosity. Use a pipette or equivalent to conduct three tests by placing a .05 mL (1/4" wide) droplet of clean, potable water onto the surface. If the substrate absorbs water within 60 seconds, the substrate is considered porous. Conduct 3 tests for the first 3000 sq. ft. and one for each additional 2000 sq. ft., at least one per room. All other substrates that do not meet this requirement are considered non-porous. Ensure that all non-porous substrates are not contaminated with any aforementioned contaminates.

It is recommended that all substrates have a floor flatness of FF32 and/or a flatness tolerance of 1/8" in 6' or 3/16" in 10'. Substrates that do not meet this requirement should have a compatible cementitious patch (such as the Excelsior CP-300) or self-leveling underlayment (such as the Excelsior SU-310) installed to flatten the installation area.

Do not use solvent/citrus based adhesive removers prior to installation. Follow The Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesive", and all applicable local, state, federal and industry regulations and guidelines. When removing asbestos and asbestos containing materials, follow all applicable OSHA standards.

CONCRETE SUBSTRATES

All concrete must have a minimum compressive strength of 3500 PSI and be prepared in accordance with ASTM F710. When flooring is being installed directly over concrete, concrete surfaces that have an ICRI Concrete Surface Profile (CSP) over 4 should be flattened with a self-leveling underlayment or a patch to prevent imperfections from telegraphing through flooring materials. On or below grade concrete must have a permanent, effective moisture vapor retarder installed below the slab.

New or existing concrete substrates on all grade levels must be tested in accordance with ASTM F2170, using in situ Probes, to quantitatively determine the amount of relative humidity no more than one week prior to the installation.

Adhesive RH Limits

Loose-Lay Installation: **95% RH**

MS-700 Modified Silane: **95% RH**

EW-710 Epoxy Wet-Set: **90% RH**

In addition to ASTM F2170 Relative Humidity Testing, existing concrete that has previously had floor covering installed on all grade levels must be tested in accordance with ASTM F1869, using Calcium Chloride test kits, to quantitatively determine the Moisture Vapor Emissions Rate (MVER) of the concrete.

Adhesive MVER Limits

Loose-Lay Installation: **10 lbs.**

MS-700 Modified Silane: **10 lbs.**

EW-710 Epoxy Wet-Set: **6 lbs.**

If ASTM F2170 or ASTM F1869 test results exceed the prescribed limits, a moisture mitigation product, such as Excelsior MM-100 Moisture Mitigation, must be installed prior to proceeding with installation. Install The MM-100 per technical data sheet at a rate of 400 sq. ft. per gallon. When installing over concrete as moisture mitigation, material must be applied in two coats. Do not install flooring until moisture testing has been conducted per the appropriate standard and/or moisture mitigation has been installed and is dry to the touch. Do not install flooring in below grade areas when hydrostatic pressure is visible or suspected.

RESINOUS SUBSTRATES

When installing directly over a resinous products, such as the Excelsior MM-100 or an epoxy coating, ensure that coating is dry to the touch and has cured for the prescribed length of time. Substrate must be clean, dry, sound and free of contaminates. Ensure to follow installation procedures and trowel sizes for non-porous substrates.

GYPSUM BASED SUBSTRATES

Gypsum-based substrates must have a minimum compressive strength of 3500 PSI. Gypsum substrates that do not meet this requirement must have one coat of the Excelsior MM-100 or equivalent installed to improve the tensile/pull-off strength of the substrate. Substrate must be structurally sound and firmly bonded to subfloor. Any cracked or fractured areas must be removed and repaired with a compatible patch or repair product. Follow instructions for installation over a gypsum substrate. New or existing gypsum substrates may require a sealant or primer. Follow all manufacturer's recommendations regarding preparation for resilient flooring installation.

WOOD SUBSTRATES

Wood substrates must be prepared in accordance with ASTM F1482. Wood subfloors should be of double layer construction with a minimum thickness of 1". Crawl spaces beneath wood subfloors shall be in compliance with local building ventilation codes and have at least 18" of cross-ventilated space between the ground and the joists. Wood joists should be spaced on not more than 16" centers. Prior to installation, moisture retardant sheeting with a maximum rating of 1.0 perm must be installed beneath the wood subfloor, overlapped at least 8". For standard installations, use Underlayment Grade plywood with a minimum thickness of 1/4" thick and a fully sanded surface. When floors may be subjected to moisture, use an APA approved exterior grade plywood.

Other wood subfloor materials, such as OSB, lauan, particleboard, chipboard, fiberboard or cementitious tile backer boards, are not acceptable substrates. Avoid preservative-treated and fire-retardant plywood, as some may be manufactured with resins or adhesives that may cause discoloration or staining of the flooring. Do not install flooring directly over solid or engineered hardwood flooring without first installing plywood or a suitable cementitious repair product at a minimum thickness of 1/4" over the hardwood flooring.

Wood subfloor deflection, movement, or instability will cause the flooring installations to release, buckle or become distorted. As such, do not use plastic or resin filler to patch cracks. Do not use cement or rosin coated nails and staples or solvent-based construction adhesives to adhere the plywood. Do not install on a sleeper system (wood subfloor system over concrete) or directly over Sturd-I-Floor panels.

METAL SUBSTRATES

Metal substrates must be thoroughly sanded/ground and cleaned of any residue, oil, rust and/or oxidation. Substrate must be smooth, flat and sound prior to installation. When installing in areas that may be subject to topical water or moisture and/or high humidity, an anti-corrosive coating must be applied to protect metal substrate. Contact a local paint or coating supplier for coating recommendations. Install flooring material within 12 hours after sanding/grinding to prevent re-oxidation. Any deflection in the metal floor can cause a bond failure between the adhesive and the metal substrate. Ensure to follow installation procedures and trowel sizes for non-porous substrates.

EXISTING FLOORING SUBSTRATES

The suitability of existing flooring as a substrate depends on the specific requirements of the adhesive being used to install the material. As such, refer to the adhesive requirements for existing flooring substrates and ensure all adhesive requirements and guidelines are followed.

RADIANT HEATING SUBSTRATES

Recycled rubber flooring products are not recommended for use over radiant heating systems.

4. CRACKS, JOINTS & VOIDS

All cracks, joints and voids, as well as the areas surrounding them, must be clean and free of dust, dirt, debris and contaminants. All minor cracks and voids 3/64" wide or less may be repaired with a suitable cementitious patch.

Due to the dynamic nature of concrete slabs, manufacturer cannot warranty installations to cover expansion joints, cracks or other voids (such as control cuts, saw joints and moving cracks or voids) wider than 3/64". Do not install

flooring directly over any expansion joints or cracks wider than 3/64".

All expansion joints should have a suitable expansion joint covering system installed to allow expansion joint to freely move. To treat expansions joints where an expansion joint covering system can't be installed or to treat through cracks (depth at least 75% of the thickness of the concrete), chase joint or crack with a suitable saw or grinder and open to a minimum width of ¼". Be sure to clean all dust, dirt and debris from crack. Joints and cracks should then be sealed with a suitable, elastomeric caulk (such as Ardex Ardiseal Rapid Plus, Mapei P1 SL or equivalent) designed for use in expansion joints. Install a closed-cell backer rod at prescribed depth and follow caulk manufacturer's instructions for installation. Ensure surface is troweled flush with surface of concrete.

To treat other cracks and voids (such as control cuts, saw-cut joints and surface cracks) over 3/64", chase joint or void with a suitable saw or grinder and clean all dust, dirt and debris from crack. Fill entire crack with a rigid crack filler (such as Ardex Ardifix, CMP CM10 or equivalent) designed for use in control or saw-cut cuts. Follow material manufacturer's instructions for installation. Ensure surface is troweled flush with surface of concrete.

Consult a structural engineer prior to treating any crack or joint, especially those that may affect structural integrity (such as expansion joints). Review all manufacturer installation instructions and/or consult manufacturer technical staff for all crack or joint filling products prior to treating joints and cracks.

5. INTERLOCKING INSTALLATION

Ensure substrate is suitably prepared prior to installation, as manufacturer is not responsible for substrates that have not been properly prepared and tested for moisture. Indoor installations of interlocking tile are recommended to be loose-lay without adhesive. All outdoor installations of interlocking tile require a full spread of the approved adhesives above; use square edge tile installation instructions for these installations.

Ensure substrate is clean, dry and sound prior to installation. Square installation area using the 3-4-5 squaring rule or similar method to ensure acceptable installation and establish initial installation starting line. Some flooring products, colors and textures have latent and acceptable color and shade variations. Dry-lay material prior to installation to verify that there are no visible defects, damages or excessive shading variations. For larger installations, material should be blended between cartons and pallets to ensure a uniform appearance. If there are concerns regarding shade or color variation, do not install material and consult sales agent and manufacturer's technical staff.

Whenever possible, avoid installing flooring seams directly over seams in the substrate. Borders and perimeter pieces should be no less than ½" the width of the tile and should be no less than 1/8" from the wall, depending on depth of wall base or trim, to allow for expansion.

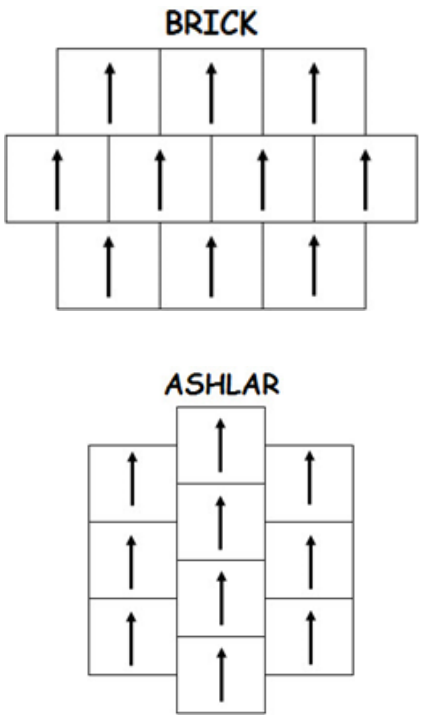
Borders and other specialty cut tiles should be undercut to fit snugly, not tightly, against thresholds, transition strip, fixtures, door jambs or other obstacles; forcing incorrectly sized tiles into smaller areas will cause the tile to buckle.

Roll material with a 3 section, 100 lb. to ensure all tiles are properly interlocked, crossing in a perpendicular direction after initial roll. Use a hand roller in areas that cannot be reached with larger roller. Visually inspect installation to ensure that material has not shifted and all seams are tight and flat. To finish open edges of interlocking tile or areas intended to but to another flooring material, use a straight edge to remove male ends of tile and install appropriate finishing accessory.

6. SQUARE EDGE INSTALLATION

Ensure substrate is suitably prepared prior to installation, as manufacturer is not responsible for substrates that have not been properly prepared and tested for moisture. Ensure adhesive is approved for use with flooring material and the proper trowel type and size is used, as manufacturer is not responsible for any and all adhesion issues related to improper adhesive selection or usage. Prior to installation, confirm material installation pattern and direction per design specifications or work order. Square Edge tile should be installed in an ashlar or brick pattern to ensure tight seams and an overall ideal visual appearance.

Installation Patterns



Inspect and dry lay all tiles before installing to verify that there are no visible defects, damages or excessive shading variations. Some flooring products, colors and textures have latent and acceptable color and shade variations. If there are concerns regarding shade or color variation, do not install material and consult a sales representative and manufacturer's technical staff.

Ensure substrate is clean, dry, flat and sound prior to installation. Square the room using the 3-4-5 squaring rule or similar method to ensure acceptable installation and establish initial installation starting line. Dry-lay several tiles to establish the best layout for the installation area and facility

and ensure equal tile sizes around the perimeter. Allow a 1/8" gap around the entire perimeter of the room to allow for expansion, ensuring gap is no wider than the trim, wall base or molding to be installed. Cut borders and other specialty pieces to fit snugly against or around walls, thresholds, transition strips, fixtures and other protrusions or accessories. Avoid forcing material tightly against vertical surfaces, as material may buckle.

Use a nail-down guide or equivalent along starting row to expedite wet-set installation. Apply adhesive according to instructions for specific product in use and observe adhesive flash times, if applicable. Ensure all adhesive working times are observed and followed. Be sure to follow instructions based on substrate porosity (porous or non-porous). Use below chart for reference.

Adhesive Coverage Rates *(Per Gallon)*

Adhesive	Porous	Non-Porous
MS-700	160 sq. ft.	235 sq. ft.
EW-710	160 sq. ft.	235 sq. ft.

Install material into adhesive and observe directional arrows on back of tile to ensure arrows are installed in the same direction, unless installing in a specific and pre-determined design, such as a quarter-turn design. Use a pyramid layout when installing tiles to eliminate run-off.

When installing into adhesive using a wet-set method, avoid walking or working on material until adhesive has cured for light foot traffic. ***Working on material that is installed into wet adhesive could cause adhesive to displace.*** When working off of material is not possible, use a kneeling board or equivalent to disperse weight evenly and prevent adhesive displacement. Pay close attention to working time to avoid adhesion issues. This may require installing material in smaller sections. Replace trowels at recommended intervals to maintain proper trowel ridge and spread rate.

Periodically lift material to ensure proper adhesive transfer and ensure adhesive has not surpassed the open time – adhesive should cover 90% of tile. Roll material with a 3 section, 100 lb. roller within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Use a hand roller in areas that cannot be reached with larger roller.

Visually inspect installation to ensure that material has not shifted and that adhesive has not been squeezed out of joints or compressed onto surface. Clean excessive adhesive or adhesive residue from the surface of the material per adhesive recommendations. Do not apply abrasive or solvent based cleaners directly to flooring material.

7. ICE RINK INSTRUCTION

Tuflex may be installed in and around ice rinks, however, certain precautions must be followed to ensure successful installation. Ensure substrate is clean, dry, flat and sound prior to installation – give standing water or condensation time to dry prior to installation. Ensure substrate temperature is above 40° F (4° C) to allow adhesive to properly cure. Do not fill voids between the concrete slab and the ice slab, as this void is necessary for expansion and contraction. When butting directly to ice rink walls or boards, the Tuflex may be used to bridge these voids. Due to the oval shape of most ice rinks and arenas, there may be several small cut tiles around the perimeter – ensure all small cut tiles are well adhered. ***In areas where skate traffic is expected, ensure skate guards are worn to prevent damaging tile.***

8. INITIAL MAINTENANCE

Ensure that adhesive has cured for recommended period of time prior to conducting initial maintenance. Remove any protective coverings prior to cleaning. Sweep, dust mop and/or vacuum flooring to remove any dirt, dust or debris.

Mix 2-4 ounces of Excelsior All Purpose Cleaner per gallon of clean, potable water. Use a clean mop to apply cleaning solution to floor and let stand for 5-10 minutes.

Using a low-speed floor buffer (180 – 360 RPM), buff floor while wet using a 3M 5300 Blue Cleaning Pad. If flooring is heavily soiled, an additional cleaning may be required.

Use an auto-scrubber, wet vacuum or clean mop to remove any and all excess cleaning solution. Rinse area with clean, cool water and allow floor to dry entirely.

Do not use detergents, abrasive cleaners or "mop and shine" type products, as they will dull the finish and sheen of the flooring material. Do not use vacuums that have a beater bar or electric brooms with hard plastic bottoms or no padding, as this may cause discoloration, scratching and loss of sheen.

For further information regarding daily or routine maintenance, please consult the product care & maintenance document or the associated product technical data sheet.

Adhesive Traffic Limits

MS-700 Modified Silane	
Foot Traffic:	8-12 Hours
Heavy / Rolling Traffic:	24-48 Hours
Maintenance:	48 Hours
EW-710 Epoxy Wet-Set	
Foot Traffic:	8-12 Hours
Heavy / Rolling Traffic:	24-48 Hours
Maintenance:	48 Hours

9. FINISH APPLICATION

Prior to final usage, Tuflex must have a protective floor finish installed to ease maintenance. Ensure that initial maintenance has been conducted prior to applying floor finish. Flooring area must be free of dust, dirt, debris, adhesive or cleaning residues, mold release agents and any potential contaminates.

Apply Excelsior PF-960 Performance Gloss Finish per the installation instructions in 3-4 coats. Allow each coat to dry completely before apply additional coats. Allow finish to cure for 12 hours prior to allowing foot traffic.

For further information regarding finish application, please consult the product care & maintenance document or the associated product technical data sheet.

10. FLOORING PROTECTION

Protect newly installed flooring with construction grade paper or protective boards, such as Masonite or Ram Board, to prevent flooring damage, especially by other trades. Limit usage and foot traffic according to the adhesive's requirements (see chart below). When moving appliances or heavy furniture, protect flooring from scuffing and tearing using temporary floor protection.

All furniture casters must be made of a soft material and must have a contact point of at least 1" in width to limit indentation and flooring damage. All rolling chairs or seating must have a resilient flooring chair pad installed over the finished floor to protect floor covering. All fixed furniture legs must have permanent felt or soft rubber floor protectors installed on all contact points to reduce indentation. Floor protectors must have a flat contact point of at least 1" in width and must cover the entire bottom surface of the furniture leg.

Ensure all furniture castors and chair legs and are clean and free of any and all dirt and debris. Routinely clean chair castors and furniture legs to ensure that dirt or debris has not built up or become embedded in castors or floor protectors. Replace chair castors and floor protectors at regular intervals, especially if they become damaged or heavily soiled.

Place walk-off mats at outside entrances. Ensure mats are manufactured with non-staining backs to prevent discoloration.

11. WARRANTY

Roppe provides a 5 Year Limited Warranty. For additional information, see associated warranty documents.

FOR PROFESSIONAL USE ONLY. PLEASE CONSULT ALL ASSOCIATED TECHNICAL DATA SHEETS, SAFETY DATA SHEETS, MAINTENANCE DOCUMENTS, WARRANTY INFORMATION PRIOR TO INSTALLATION.