

## TECHNICAL DATA

*This document is intended to cover Technical and Installation information for all Roppe rubber tile patterns and color collections: Solid, Marbleized, Fiesta, Marble Fiesta, Symmetry, and SafeTCork Rubber & SafeTCork Fiesta.*

ASTM F1344 – Rubber Floor Tile: **Class I, Type A & B, Grade 1**

ASTM E648 (NFPA 253) - Critical Radiant Flux: **Class I, > 0.45 W/cm<sup>2</sup>**

ASTM E662 (NFPA 258) - Smoke Density: **Passes, < 450**

CAN/ULC-S102.2 - Surface Burning: **Flame Spread Rating (FSR) 115, Smoke Developed Classification (SDC) 275**

ASTM D2240 - Shore A Hardness: **> 85**

ASTM F970 - Static Load Limit: **Passes, 250 PSI**

ASTM F970 (Modified) - Max Weight: **1100 PSI**

ASTM F925 – Chemical Resistance: **Passes (chart available from [solutions@rhctechnical.com](mailto:solutions@rhctechnical.com))**

ASTM D2047 – Slip Resistance: **> 0.6**

ASTM F1514 - Heat Color Stability: **Passes, ΔE < 8**

ASTM D3389 - Abrasion Resistance: **Passes, < 1 g loss (1000 cycles)**

ASTM F2199 - Dimensional Stability: **Passes, < 0.15% (MD & AMD)**

ASTM G21 - Resistance to Fungi: **Excellent**

ASTM E492/E989 – Impact Sound: **IIC 51**

ASTM E90 / E413 – Airborne Sound: **STC 63**

ASTM E2179 – Effectiveness of Floor: **ΔIIC 9**

Acclimation Time: **48 Hours**

Storage & Acclimation Temperature: **65° - 85° F**

## SUSTAINABILITY

FloorScore® Certificate Available, HPD Available, EPD Available, NSF 332,

Qualifies for LEED Credits, Recyclable through the **Roppe Impact Program**

Technical Documentation visit: [www.roppe.com](http://www.roppe.com) or send an e-mail to: [support@roppe.com](mailto:support@roppe.com).

Technical Support: [solutions@rhctechnical.com](mailto:solutions@rhctechnical.com)

## APPROVED ADHESIVES

**Excelsior SP-500 Acrylic Aerosol Adhesive** – An acrylic aerosol pressure-sensitive adhesive used for the installation of vinyl and rubber flooring products over porous and non-porous substrates in indoor applications.

**Excelsior AW-510 Acrylic Wet-Set Adhesive** – An acrylic adhesive used for the permanent installation of dimensionally stable vinyl, rubber and quartz flooring, wall base and stair tread products over porous and non-porous substrates in indoor applications.

**Excelsior AP-520 Acrylic Roll-On Adhesive** – An acrylic, roller or troweled applied pressure-sensitive adhesive used for the installation of vinyl and rubber flooring products over porous and non-porous substrates in indoor applications.

**Excelsior MS-700 Modified Silane Adhesive-** A premium, one component modified silane adhesive used for the permanent installation of vinyl & rubber flooring products over porous and non-porous substrate both indoors and outdoors

**Excelsior EW-710 Epoxy Wet-Set Adhesive** - A non-flammable two-part urethane-modified epoxy adhesive used for the permanent, indoor installation of vinyl, rubber and quartz flooring products over porous and non-porous substrates in both indoor and outdoor applications.

## Approved Cleaners, Finishes & Finish Removers

**Excelsior NC-900 All Purpose Neutral Cleaner** – a pH neutral, cleaner for the initial and daily cleaning of all Rubber and Vinyl Resilient flooring materials.

**Excelsior CM-910 Cleaner / Maintainer** - A pH neutral, biodegradable cleaner and maintainer for the daily cleaning or long-term preservation of rubber flooring products.

**Excelsior PF-960 Performance Finish** – A flexible floor finish developed for use over resilient flooring products, specifically for crumb rubber flooring products.

**Excelsior PR-930 Performance Finish Remover** – a finish remover specifically designed to remove topically applied flooring finishes from resilient flooring products that are sensitive to alkalinity, such as rubber flooring and crumb rubber flooring.

Adhesive Coverage Rates and Traffic Limits						
Coverage Rates (per gallon)				Traffic Limits		
Adhesive	Porous	Non-Porous	RH / MVER Limits	Foot Traffic	Heavy Foot Traffic, Rolling Loads	Maintenance
SP-500	100 sq. ft. / unit		90% / 8 lbs.	Immediate	Immediate	48 Hours
AW-510	160 sq. ft.	N/A	90% / 6 lbs.	24 Hours	48 Hours	72 Hours
AP-520	400 sq. ft.	400 sq. ft.	90% / 6 lbs.	Immediate	Immediate	48 Hours
MS-700	160 sq. ft.	235 sq. ft.	95% / 10 lbs.	8 – 12 Hours	24 - 48 Hours	48 Hours
	Brushed & Rough Porous	Smooth Porous & Non-Porous				
EW-710	135 sq. ft.	150 sq. ft.	90% / 6 lbs.	8 – 12 Hours	24 – 48 Hours	48 Hours

## SUBSTRATE, INSTALLATION & MAINTENANCE INFORMATION

### 1. PRODUCT LIMITATIONS

- Prior to acceptance of this document refer to our website: [www.roppe.com](http://www.roppe.com) to confirm that you have the most current revision.
- Do not install materials over VCT, LVT, vinyl flooring, cushioned vinyl, hardwood, cork, rubber, linoleum or asphaltic materials.
- Do not install in areas that may be subjected to sharp, pointed objects, such as pointed metal spikes.
- 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.

- Fading can occur from extensive or long term exposure to heavy direct or glass-filtered sunlight, or unfiltered ultra-violet rays, so use caution or window treatments in these areas
- As rubber tile ages, color will darken with exposure to environmental elements, some shading should be expected with repairs from attic stock material.
- 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.
- Not to be used in Commercial Kitchens or other areas subjected to animal, vegetable or petroleum based oils and solvents.
- Rubber tile is lot controlled material from different lot control numbers should not be combined unless shade variation is acceptable.
- Observe directional arrows on back of tile to ensure arrows are installed in the same direction. 978 Smooth, LB996 Lug-Back and 953 Warning Tile Designs do not have directional arrows.
- Use appropriate floor protection devices for resilient flooring on all furniture or fixtures.
- If installing over loose lay moisture or sound control products please contact technical service for additional information.
- Not for outdoor use.

## 2. PRE-INSTALLATION

- 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 all substrate preparation and moisture testing requirements have been performed, read and/or understood by all interested parties.

## 3. STORAGE, ACCLIMATION & SERVICE ENVIRONMENT

- Ensure material is adequately stored at temperatures between 65° F (19° C) and 85° F (30° C) prior to installation.

- This product is designed, manufactured and tested to perform at constant temperatures, not fluctuating more than 4° from normal selected service temperatures from the allowable 65° F (19° C) - 85° F (30° C) range.
- During acclimation, the material must be in the installation area with the HVAC system functional and operating at desired service temperatures for a period of 48 hours prior to installation, during the installation and for the service life of the installation afterwards.
- It is recommended maintaining an ambient relative humidity between 40% and 60% for a period of 48 hours prior to installation, during the installation and for the service life of the installation afterwards.
- If the material will be installed outside of the above acclimation and service temperature ranges contact Technical Services for more detailed installation recommendations.
- Do not proceed with installation until all conditions have been met.

## 4. SUBSTRATE PREPARATION

***In regards to substrate preparation when mechanical sanding, grinding, shot blasting and vacuuming always follow the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesives", and all applicable local, state, federal and OSHA requirements in regards to Asbestos and Silica containment regulations.***

All substrates must be prepared according to ASTM F710 or ASTM F1482, as well as applicable ACI and RFCI guidelines. Substrates must be 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, shot-blasting 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 HEPA approved vacuum and flat vacuum attachment to remove all surface dust.

***Sweeping without vacuuming will not be acceptable.***

Do not use solvent/citrus based adhesive removers prior to installation.

### 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 smoothed with a self-leveling underlayment or a patch to prevent imperfections from telegraphing through flooring materials.

All 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 contaminants.

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.

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.

### 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 contaminants. Resinous substrates are considered non-porous – make sure adhesive can be used over non-porous substrates and follow all installation instructions and flash times 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 may have one coat of the Excelsior MM-100 installed to improve the top layer bonding strength of the substrate. Substrate must be structurally sound and firmly bonded to the subfloor below. 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 the substrate has a primer or sealer applied just prior to finished floor being installed. Follow all manufacturers' recommendations regarding preparation for resilient flooring installation.

### WOOD SUBSTRATES

Wood substrates must be prepared in accordance with ASTM F1482. 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". Other wood subfloor materials, such as OSB, lauan, particleboard, chipboard or cementitious tile backer boards, are not acceptable subfloors. 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. This also includes plywood sheathing designed for long lasting exposure to exterior climates. These also could contain resins/waxes that could stain or be considered bond breakers. Always refer to those manufactures recommendations. If the subfloor materials mentioned above are already installed or the wood substrate is old and not repairable, the use of multi-ply Underlayment Grade plywood at a minimum of 1/4" thick with a fully sanded face will be required.

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. Only install over a properly constructed sleeper system (wood subfloor system over concrete, consult the technical department for further details) and do not install 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 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. Be sure to follow installation procedures and trowel sizes for non-porous substrates.

***Installing over Checker plate or Diamond plate is not recommended.***

### EXISTING FLOORING SUBSTRATES

Existing rubber flooring and LVT, as well as the adhesives used to install them, must be completely removed from the substrate prior to installation. Existing



VCT, VAT, quartz tile, solid vinyl tile, sheet goods, hardwood flooring, asphaltic materials and existing adhesives or adhesive residue must have a compatible cementitious patch or underlayment installed over the substrate prior to installation. Existing hardwood flooring requires suitable underlayment grade plywood be installed over the substrate.

Adhesive may be installed over existing stone flooring substrates, such as terrazzo, porcelain or ceramic tile. Ensure existing flooring is a single layer of material and that all materials are clean, dry, sound, solid, well adhered and free of site-applied finishes, waxes and/or contaminants. Any and all loose tiles must be removed and repaired or replaced. All grout lines and irregularities must be filled and troweled flush with a suitable primer and patch such as the Excelsior NP-230 and CP-300 to prevent telegraphing of the existing floor. All existing flooring substrates that are outside of flatness tolerances that cannot be repaired with the Excelsior CP-300 patch should be leveled with the SU-310 self-leveling underlayment to achieve a smooth, flat substrate.

All existing flooring substrates must have any and all site-applied finishes and/or waxes completely removed prior to flooring installation in order to ensure a proper adhesive bond. For mechanical removal, use a low-speed buffer and 40-60 grit sandpaper. Properly prepared substrates should not have any remaining gloss or sheen. For chemical removal, ensure chemical treatments will not disrupt adhesion of the existing flooring to the substrate. Be sure to rinse the existing flooring adequately with clean, potable water to remove any and all chemicals from the surface of material.

Do not install flooring until any moisture on, between or below existing flooring has completely dried. Ensure all dust; dirt and debris are removed prior to flooring installation.

### **RADIANT HEATING SUBSTRATES**

When installing flooring over a substrate that contains a radiant heating system, ensure the radiant heat is turned off 48 hours prior to installation and remains off during the entire installation. The radiant heat may be turned on 48 hours after installation and the normal operating temperature should be increased gradually over the course of 24 hours. Ensure the temperature of the radiant heating system does not exceed 85° F (29.5° C) and avoid making abrupt changes in radiant heating temperature.

### **5. 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 and be repaired with a suitable cementitious patch.

Due to the dynamic nature of concrete slabs, manufacturer **cannot** warranty installations over expansion joints, cracks or other voids such as control

cuts saw joints and moving cracks. Do not install flooring or use adhesives directly over any expansion joints.

All expansion joints should have a suitable expansion joint covering system installed to allow expansion joint to freely move.

### **6. FLOORING 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 that 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. Rubber tile should be installed in a monolithic pattern to ensure tight seams and an overall ideal visual appearance. Inspect all tiles before installing or during installation to verify that there are no visible defects, damages or excessive shading variations. Blend materials from several cartons to ensure consistent appearance and color or shade variation. 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. Ensure the room is square using the 3-4-5 squaring rule or similar method to ensure acceptable installation. Dry-lay several pieces of material in order to determine ideal room layout. Cut borders and other specialty pieces to fit snugly against or around walls, thresholds, transition strips, fixtures and other protrusions or accessories. Ensure material around perimeter is 1/8" from wall or less, depending on depth of wall base or trim.

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 above chart for reference.

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.

#### **Dimensions Rubber Tile Only**

*When installing the Dimensions line of rubber tiles these are the recommended patterns, however due to the*

options it is recommended to do a small mockup before adhering.

### **982 Crackle Design**

*Recommended – Monolithic  
All other patterns are optional*

### **983 Random Design**

*Recommended – Random.  
All other patterns are optional.*

### **984 Strip Design**

*Recommended - ¼ turn, brick pattern.  
All other patterns are optional. Lines may not line up in monolithic pattern.*

### **Designers Choice Rubber Tiles Only**

*When installing Designers Choice, and depending on the patterns, some shapes will be left handed or right handed. Be sure to identify these tiles before installation. Due to the complexity of some designs a mockup is always recommended. Be sure that all tiles are accounted for before beginning installation.*

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. INITIAL MAINTENANCE**

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

Mix 2-4 ounces of Excelsior NC-900 per gallon of clean, potable water. Use a clean mop to apply cleaning solution to floor and let stand for 5-10 minutes.

If using a low-speed, rotary floor machine (175 – 350 RPM), scrub the floor while wet using a 22 gauge soft bristled scrubbing brush or a 3M 5100 Red Cleaning Pad.

If using an auto-scrubber, scrub the floor while wet using a 22 gauge soft bristled scrubbing brush or a 3M 5100 Red Cleaning Pad. If flooring is heavily soiled, allow cleaner to remain on surface for an additional 5-10 minutes before scrubbing and removing.

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 these will damage, soften or discolor the flooring material. DO NOT use vacuums that have a beater bar, electric brooms with hard plastic bottoms or no padding and vacuums which have a rubber bumper, as this may cause discoloration, scratching and loss of sheen.

Installation areas that will be difficult to maintain with a rotary floor machine or auto-scrubber, such as elevators cabs or small rooms, as well as areas that will not receive routine maintenance with a rotary floor machine or auto-scrubber *must* have a compatible floor finish installed, such as the Excelsior MF-940, GF-950 or PF-960, in order to ease maintenance of the floor covering.

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

## **8. 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. Do not slide or drag pallets or heavy equipment across the new flooring. Limit usage and foot traffic according to the adhesive's requirements. 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 and to reduce indentation. Floor protectors must have a flat contact point of at least 1 sq. in. or 1 in. diameter 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.

### **9. WARRANTY**

Roppe provides a Limited 5 Year Warranty for all Raised Design rubber tile. For additional information, see associated warranty documents.

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