

## PRODUCT DESCRIPTION

FSU-410 is a 2mm thick, rolled sound reduction underlayment specifically designed for indoor use under resilient flooring products. FSU-410 can be installed directly over existing floor coverings where other adhesives cannot, such as VAT, Sheet Vinyl, Linoleum and Hardwood Flooring.

FSU-410 is a loose lay product that does not require adhesive to be installed and may be used with floating and glue down resilient floors. FSU-410 available in 3.5' wide rolls and is easy to cut, allowing for easy installation. The material is non-absorbent and mostly impermeable, allowing it to resist moisture damage, mold and mildew growth.

### FEATURES

- **Approved for Use With Resilient Flooring**
- **No Adhesive Required to Install**
- **Contains 80% post-industrial recycled content**
- **Can be Installed over VAT, Sheet Vinyl & Hardwood**
- **High Resistance to Compression**
- **High Recovery from Indentation**
- **Excellent Impact & Airborne Sound Reduction**
- **Resistant to Moisture Damage**
- **Qualifies for LEED Credits**
- **Compatible with Most Flooring Materials**

### TECHNICAL INFORMATION

Unit Size:	<b>4' x 35' x 2mm</b>
Unit Weight:	<b>28 lbs. per roll</b>
Coverage:	<b>122.5 sq. ft. per roll</b>
Density:	<b>28 lbs. / ft.<sup>3</sup></b>
Tensile Strength:	<b>&gt;750Kpa</b>
Compression:	<b>&lt;25%, 100 PSI</b>
Recovery:	<b>&gt;90%</b>
ASTM F2170 RH Limit:	<b>90% RH</b>
ASTM F1869 MVER Limit:	<b>8 lbs.</b>
ASTM F710 pH Limit:	<b>n/a</b>
ASTM D2240 – Shore Hardness:	<b>50-55</b>
ASTM E96 – Permeance Rating:	<b>&lt;0.3 Perms</b>
ASTM E492/E989 – Impact Sound:	<b>IIC 50*</b> <b>IIC 66**</b> <b>IIC 54+</b> <b>IIC 51++</b>
ASTM E90 / E413 – Airborne Sound:	<b>STC 52*</b> <b>STC 62**</b> <b>STC 55+</b> <b>STC 58++</b>
ASTM E2179 – Effectiveness of Floor:	<b>ΔIIC 21*</b> <b>ΔIIC 24+</b>
LEED v2009 MR Credit 4.1:	<b>Complies</b>
LEED v2009 MR Credit 4.2:	<b>Complies</b>
LEED v2009 IEQ Credit 4.1:	<b>Complies</b>
LEED v2009 IEQ Credit 4.4:	<b>Complies</b>
Shelf Life:	<b>2 Years</b>
Storage Temperature:	<b>50° - 75° F</b>

\* 6" Concrete, No Ceiling

+8" Concrete, No Ceiling

\*\* 6" Concrete, Drywall Ceiling

++18" OWT/Gypsum, Drywall Ceiling

### PRODUCT LIMITATIONS

Expansion joints must be honored. Do not mechanically fasten underlayment. Do not install materials over cushioned vinyl, cork or rubber flooring. Do not install underlayment in outdoor areas.

## 1. PRE-INSTALLATION CHECKLIST

- Consult all associated product literature concerning installation and warranty prior to installation of moisture mitigation.
- Allow all trades to complete work prior to installation.
- Deliver all materials to the installation location in its original packaging with labels intact.
- Inspect all material to ensure there is no leakage or damage.
- Do not stack pallets to avoid damage.
- Ensure installation area and material storage temperatures are between 65° F (19° C) and 85° F (30° C) and 40% - 65% RH for at least 48 hours before, during and after installation.
- Ensure HVAC system is operational and fully functioning at normal operating conditions.
- 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 concrete moisture testing is conducted or scheduled to be conducted prior to flooring installation.
- 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).
- Ensure all vents, walls, moldings and/or doorways are protected with tape or plastic prior to installation.
- Ensure finished flooring is not intended make direct contact with the perimeter wall or any vertical surface attached to it, such as electrical boxes, heating ducts, columns, pipes or wood moldings, trim and accessories. Doing so will diminish or void sound reduction characteristics.
- Do not proceed with installation until all conditions have been met.

## 2. SUBSTRATE PREPARATION

All substrates must be clean, smooth, All substrates must be prepared according to ASTM F710, 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 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.***

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'.

When conducting renovations or remodeling, remove all existing adhesive residue so that 90% of the original subfloor/substrate is exposed by mechanical means, such as shotblasting, grinding or buffing with a 100 grit Diamabrush Prep Plus attachment.

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. 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 at least one week prior to the installation.

In addition to ASTM F 2170 Relative Humidity Testing, existing concrete that has previously had floor covering installed on all grade levels must be tested in accordance with ASTM F 1869, 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 above limits, Excelsior MM-100 Moisture Mitigation must be installed prior to proceeding with installation. Install The MM-100 per instructions with a 3/8" short nap paint roller at the prescribed coverage rate, ensuring thin, even coverage without pooling or puddling material. Avoid filling large divots and voids with MM-100, as this could affect drying time and performance. Apply MM-100 in two coats. Each coat dries within 45 minutes. 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.

If ASTM F2170 and ASTM F1869 test results are below recommended limits, concrete substrates must be tested for elevated pH and alkalinity in accordance with ASTM F710.

If pH testing per ASTM F710 exceeds the above limits, the concrete must be sealed with Excelsior MM-100 Moisture Mitigation prior to proceeding with installation. Install The MM-100 per technical data sheet at a rate of 400 sq. ft. per gallon. When installing MM-100, apply a minimum of 1 coat. Do not install flooring until material is dry to the touch.

***For more information about the MM-100 Moisture Mitigation product, please see the associated technical data sheet.***

### RESINOUS SUBSTRATES

When installing directly over a resinous products, such as the

MM-100 or an epoxy coating, ensure that coating is dry to the touch and has cured for the prescribed length of time.

## 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 strength of 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, the use Underlayment Grade plywood with a minimum thickness of 3/8" thick and a fully sanded surface is recommended. When floors may be subjected to moisture, use an APA approved exterior grade plywood.

## EXISTING FLOORING SUBSTRATES

Flooring may be installed over existing Vinyl flooring substrates, such as VCT, VAT, quartz tile, Solid Vinyl Tiles and vinyl or linoleum sheet goods, as well as existing Stone flooring substrates, such as terrazzo, porcelain or ceramic tile. Ensure 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. When handling asbestos containing materials, ensure all OSHA regulations are followed and all procedures are compliant with local, state, federal and industry regulations and guidelines. All grout lines and irregularities must be filled and troweled flush with a suitable patch, such as the Excelsior CP-300. All existing flooring substrates that are outside of flatness tolerances should be repaired with a cementitious patch or self-leveling underlayment (with a minimum compressive strength of 3500 PSI) to avoid telegraphing imperfections through flooring material.

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. When removing finish from asbestos containing materials, ensure all OSHA guidelines regarding the removal of finish from asbestos is followed, in addition to applicable federal, state, local and industry regulations and guidelines.

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.

## 3. 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 CP-300.

Due to the dynamic nature of concrete slabs, manufacturer **cannot** warranty installations to fill or cover expansion joints or dynamic cracks (such as control cuts, saw joints and moving cracks or voids) wider than 3/64". As such, **do not** install flooring directly over any expansion joints or dynamic cracks wider than 3/64".

To treat expansions joints and dynamic cracks that are completely through the concrete, chase joint or crack with a suitable saw or grinder and open to a minimum width of 1/4". Be sure to clean all dust, dirt and debris from crack. Install a closed-cell backer rod to make the depth equal to the width of the joint or crack (a 1/2" expansion joint requires a void that is no more than 1/2"). 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.

To treat dynamic cracks (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. Ensure surface is troweled flush with surface of concrete.

**Consult a structural engineer prior to treating any cracks that may affect structural integrity, such as expansion joints. Review all manufacturer installation instructions and/or consult manufacturer technical staff prior to treating cracks.**

## 4. PERIMETER ISOLATION

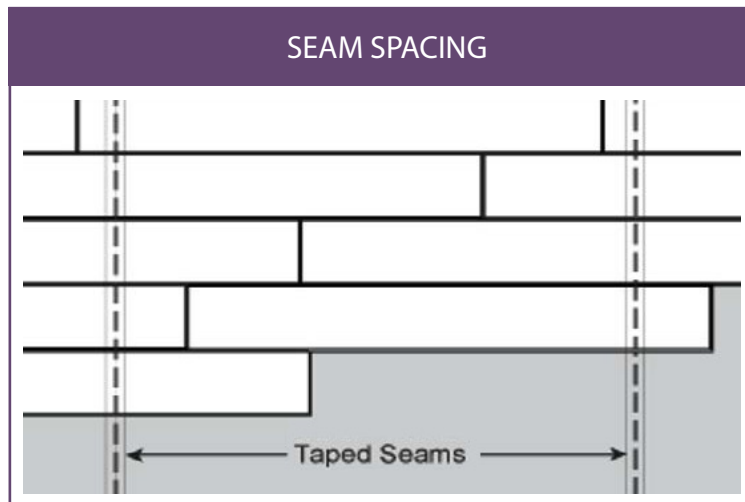
In order to preserve the sound reduction properties of the FSU-410, finished flooring cannot make direct contact with the perimeter wall or any vertical surface attached to it, such as electrical boxes, heating ducts, columns and pipes or rigid baseboards, moldings, trim and accessories. To isolate the perimeter, leave a 1/4" gap between the finished flooring and all

vertical surfaces and a 1/8" gap between the finished flooring and rigid baseboards, moldings, trim and accessories. Seal all gaps with a permanently flexible acoustical grade caulk, such as the ColorRite sealant/caulk. Ensure caulk is clear, colored or paintable.

## 5. PRODUCT 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. If installing planks or rectangular tiles, FSU-410 must be installed perpendicular to the intended direction of the flooring material to ensure the seams of the underlayment are perpendicular to the longest seams in the flooring material, as below:



When a glue-down flooring product is intended to be installed over the FSU-410, ensure the polished or "shiny" side of material is facing down. When loose-laid or click-and-lock flooring products are intended to be installed over the FSU-410, ensure the polished or "shiny" side of material is facing up. Install material to fit to dimensions of space, making cuts where necessary. Ensure that each roll contains a perimeter gap between the roll and all vertical surfaces per Perimeter Isolation.

All rolls must be tightly butted together and taped with 3M 3903 6.5 mil Vinyl Duct Tape, Tyvek House Wrap Tape or equivalent underlayment seam tape.

## 6. FLOORING INSTALLATION

Prior to flooring installation, visually inspect installation to ensure that underlayment has not shifted and all required perimeter isolation is correct.

FSU-410 is considered a non-porous material. Prior to flooring installation, ensure adhesive is approved for use with the substrate 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. Ensure all seams are tight and no gaps exist between each and every roll. When laying out flooring material, especially with planks and rectangular tiles, ensure all the longest seams in the flooring are perpendicular to the seams in the underlayment and that all other seams do not fall directly on seams in underlayment.

## 7. WARRANTY

FSU-410 provides a limited 10 year material and labor warranty. See associated warranty document for more information.

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