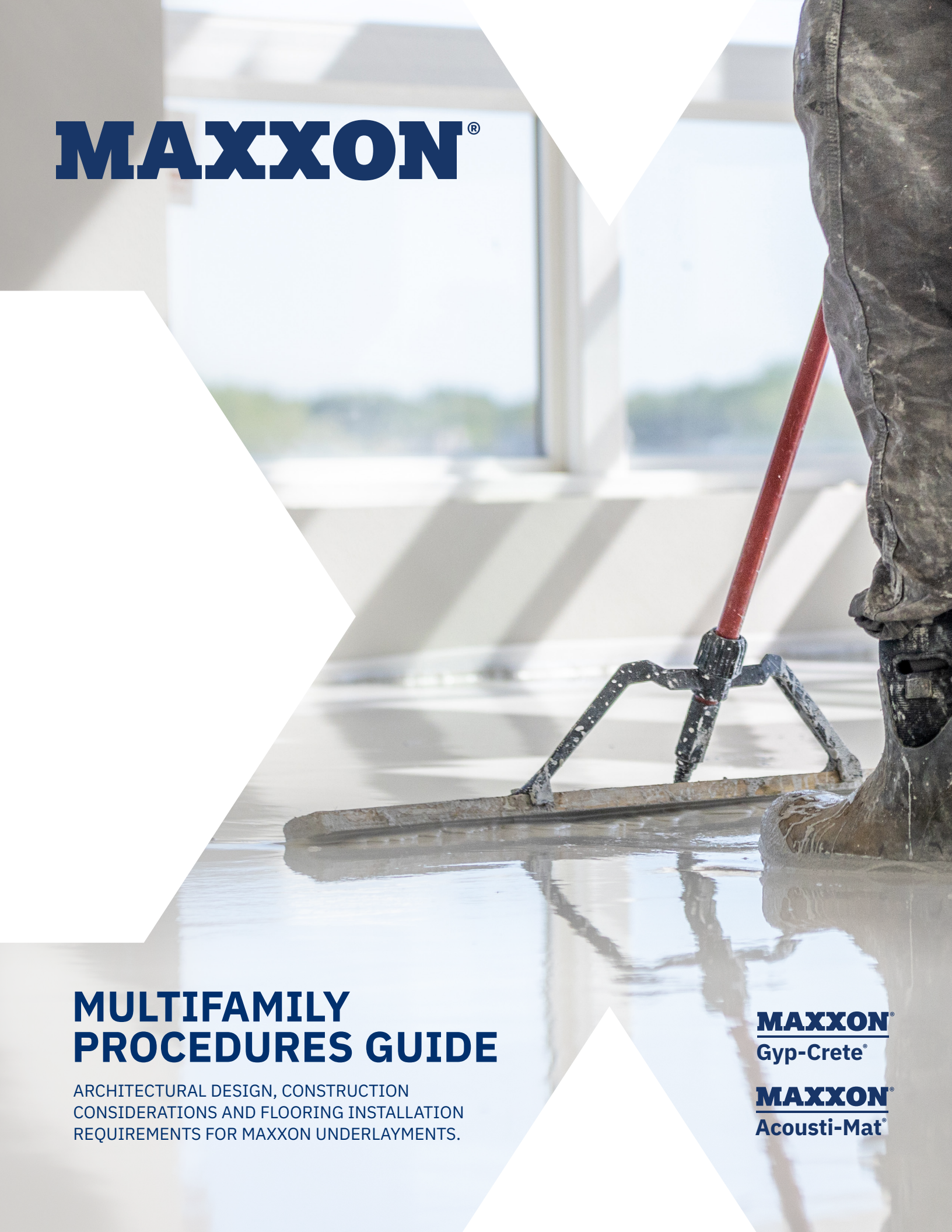
MAXXON®



MULTIFAMILY PROCEDURES GUIDE

ARCHITECTURAL DESIGN, CONSTRUCTION CONSIDERATIONS AND FLOORING INSTALLATION REQUIREMENTS FOR MAXXON UNDERLAYMENTS.

MAXXON® Gyp-Crete®

MAXXON® Acousti-Mat®

Products for approved Maxxon applicators

MAXXON

Maxxon, the creator of Gyp-Crete® and Acousti-Mat®, has been the leader in subfloor underlayments and sound control since 1972.

Maxxon's Procedures Guide details important design considerations and construction requirements to guide a successful installation on every project. We are ready to help you get the job done right. Every time.

BENEATH IT ALL, MAXXON DELIVERS.™

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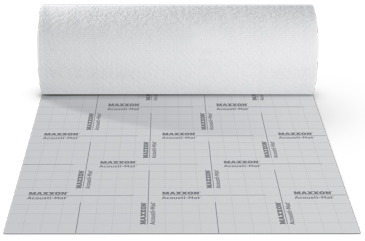


DESIGN REQUIREMENTS

Maxxon Underlayments are non-structural.

STRUCTURAL ASSEMBLY

Deflection Criteria

- All structural subfloors must satisfy deflection limitations of L/360 when subjected to expected construction and in-service live loads.
- Maxxon Underlayments are non-structural and cannot be used to reinforce structurally deficient subfloors. Determining the appropriate structural design of the floor is the responsibility of the project architect or project structural engineer. Both the structural subfloor and floor joist system must comply with manufacturers' maximum span criteria.

Flooring

Some floor coverings may require a stiffer floor system, i.e., marble, stone, travertine, and ceramic tile. Follow floor covering manufacturer's recommendations.

Expansion Joints

Expansion joints should be honored and allowed to continue through the underlayment.

Maxxon Underlayments will not structurally bridge expansion joints, saw cuts or cracks caused by structural movement. The architect or structural engineer must specify expansion joints and show their location in areas that will receive hard surface floor goods such as ceramic or marble tile and hardwood flooring.

Maxxon has over 140 UL fire-rated designs. The UL fire ratings can be found in the Maxxon Fire & Sound Manual.

maxxon.com/resources/fire-and-sound-manual

UL FIRE RESISTANCE-RATED DESIGNS

UL Design

G230	L201	L508	L524	L541	L564	L589	M514
G516	L202	L509	L525	L542	L565	L590	M515
G524	L206	L510	L526	L543	L567	L592	M517
G561	L208	L511	L527	L545	L569	L593	M518
J917	L209	L512	L528	L546	L570	M500	M519
J919	L210	L513	L529	L547	L571	M502	M530
J920	L211	L514	L530	L549	L573	M503	M531
J924	L212	L515	L533	L551	L574	M504	
J927	L501	L516	L534	L552	L576	M505	
J931	L502	L517	L535	L556	L577	M506	
J957	L503	L518	L536	L557	L579	M507	
J958	L504	L519	L537	L558	L581	M508	
J991	L505	L520	L538	L560	L583	M510	
J994	L506	L522	L539	L562	L585	M511	
L006	L507	L523	L540	L563	L588	M513	

ULC Design

L003	L511	M500	M503	M520
L201	L512	M501	M514	M521

For more information on current UL and ULC Designs, contact Maxxon Corporation.

SPECIAL LOADING CONSIDERATIONS

Concentrated Loads

U.S. building codes typically specify a uniform live load of a minimum of 40 pounds per square foot for residential floor designs. This load is intended to account for large loads that can occur in a building. In reality these loads are not uniform, but rather consist of items such as furniture and appliances that induce concentrated loads far exceeding 40 lbs/sq ft.

Rolling Concentrated Loads

Rolling concentrated loads, such as office chairs, wheelchairs, and motorized scooters add turning, twisting, repetition, and other dynamics which should also be taken into consideration.

Joist Spacing

Wider joist spacing with thinner subfloors will tend to deflect more. Special consideration should be paid to these circumstances.

PRODUCT THICKNESS OVER WOOD SUBFLOORS

Subfloor Thickness	Truss, Beam or Joist Spacing	Min. Thickness of Underlayment
19/32" (15 mm) [5/8"]	16–19.2" o.c. (406–487 mm)	3/4" (19 mm)
19/32" (15 mm) [5/8"]	19.2–24" o.c. (487–610 mm)	1" (25 mm)
23/32" (19 mm) [3/4"]	16–24" o.c. (406–610 mm)	3/4" (19 mm)

CONSTRUCTION REQUIREMENTS

SEQUENCING

Maxxon Underlayments may be scheduled before or after drywall is installed.

Maxxon recommends that walls are installed prior to the Maxxon underlayment installation whenever a sound control system is installed. Wall installation prior to the underlayment helps to ensure the best acoustical performance of the system. For more information, contact Maxxon Corporation.

Walls can be installed after Maxxon Underlayment when required by the floor assembly, or when preferred for the use-case, for example, commercial "white-box" applications. For guidance on wall installation over Maxxon Underlayments, refer to "Walls Installed on top of Maxxon Underlayments" on page 8.

Due to the unique nature of light gauge steel construction, it may be necessary to pour underlayments before doors and windows are installed. Contact Maxxon Corporation for installation details.

BUILDING CONDITIONS PRIOR TO INSTALLATION

Temperature & Relative Humidity

- Before installation of Maxxon Underlayment the building interior and subfloor temperature must be above 50 °F. Maintain this temperature during installation and during drying of the underlayment.
- Maintain relative humidity of less than 70% during drying.
- Estimated dry times (located on page 7) of Maxxon Underlayments assume that these building conditions are maintained.

Subfloor Preparation

- CLEANING — The subfloor must be broom cleaned and contaminant free.
- STRUCTURAL DEFICIENCIES — It is the responsibility of the General Contractor or Building Owner to address structural and subfloor deficiencies. Soft spots, temporary penetrations, etc., must be properly reinforced or blocked prior to underlayment installation.
- MOISTURE MITIGATION — Maxxon Underlayments are not a vapor barrier and are not designed to be installed on or below grade except over properly prepared concrete substrates. Contact Maxxon Corporation for moisture mitigation solutions.

NOTE

Before, during and while Maxxon underlayment is drying, maintain a building temperature above 50 °F

FOLLOWING THE INSTALLATION

During construction, place temporary wood planking over the underlayment wherever it will be subjected to heavy wheeled or concentrated loads. Protective coverings will lengthen dry time.

Drying

TYPICAL TIME SET — Maxxon Underlayments are walkable in approximately 2–4 hours in standard building conditions. Light subtrades may resume the next day.

DRYING TIME GUIDELINES

Underlayment Depth	Dry Time
3/4"	5–7 days
1"	7–10 days
1-1/2"	10–14 days

Maxxon Underlayments achieve high strength on initial set and develop their full strength when completely dry.

TIPS

Open windows are an important part of drying Maxxon Underlayments. Be sure they are not left taped up following other trades. Use mechanical ventilation when necessary.

Drying Conditions

The General Contractor/Project Superintendent must provide and maintain correct environmental conditions to keep the building clean, dry, and protected against intrusion of moisture from a variety of potential sources.

- SOURCES OF MOISTURE – Outside sources such as rain, snow, and wind can increase moisture levels in the building and must be taken into account when determining the best course of maintaining drying conditions. Moisture can also be introduced by other trades through spillage, tracked in mud and rain, plumbing leaks, and building products that arrive on-site laden with moisture.
- VENTILATION – Opening the windows for ventilation is often adequate to maintain building conditions, however due to environmental conditions, it may be necessary to supply mechanical ventilation, heat, dehumidifiers, air conditioners, and other resources to remove moisture from the air.

Mold

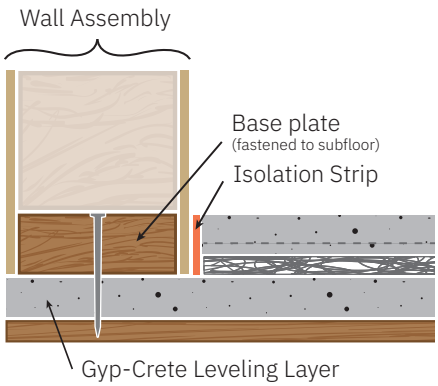
While Maxxon does not consider itself an expert on mold issues, you may find it helpful to consider the following:

- Maxxon Underlayments are inorganic and provide no source of nutrients to sustain mold growth. Mold growth can occur as a result of prolonged contact with moisture on construction materials that do provide a food source for mold.
- Some industry resources indicate that one of the keys to controlling mold, mildew, and other biological growth is to keep the relative humidity of the area below 70%. Maintaining the recommended drying conditions keeps relative humidity well below this threshold (See references*). Keep in mind the Maxxon Underlayment is only one component of the building. Installation and drying/curing of all components must be handled as the requirements and environment of each job necessitate.

*References

- ASTM International “Moisture Control in Buildings – The Key Factor in Mold Prevention” 2nd Edition
- www.epa.gov, Indoor Air Quality “Mold Course” July 2007
- US Army Corps of Engineers, Construction Engineering Research Laboratories, “USACERL Technical Report 99/03”

DRAWING



Isolation detail of walls installed over Maxxon Underlayment

NOTE

Best acoustical performance of a Maxxon system is achieved by installing the system after walls are in place; however, if the building design requires that walls be installed over the Maxxon system, please follow the recommendations on this page.

FOLLOWING THE INSTALLATION *(Continued)*

Mold *(Continued)*

- The ultimate success of moisture control in a building relies on the General Contractor/Project Superintendent taking into account all aspects of moisture on the project – building materials, moisture intrusions, ambient air conditions, construction processes, etc.

Cracks

- Because of the nature of an active construction site, even with best practices employed, some cracking of the Maxxon Underlayment may occur. Minor cracking does not impact the performance of the floor.

WALLS INSTALLED ON TOP OF MAXXON UNDERLAYMENT

When installing walls on top of the Maxxon Underlayment, please refer to the following instructions for base plate attachment.

Mechanical Attachment

- Used for: Wood or Metal Base Plates when there is not an Acousti-Mat, radiant system, or Expanded/Extruded Polystyrene (EPS) installed.
- Shoot power-actuated nails through the base plate and into the wood or concrete subfloor. The nail should be long enough to penetrate at least 1/2" (13 mm) into the subfloor. If the underlayment is too thick for the nails to penetrate the subfloor, use a construction adhesive on properly prepared underlayment in addition to nailing.
- Maxxon Underlayments are non-structural, so any load bearing walls on top of a Maxxon Underlayment must be secured into the structural subfloor.

Adhesive Attachment

- Used for: Wood or Metal Base Plates over Acousti-Mat and radiant systems.
- Prepare the underlayment according to Sealing the Maxxon Underlayment section of this brochure (page 9).

Recommended Construction Adhesives

- Chemrex CX-948
- Durabond D 819 manufactured by Bostik
- Polyseamseal All Purpose Adhesive manufactured by Henkel Corporation
- PL 400 manufactured by Henkel Corporation
- Roadware Molding and Tack Strip Cement
- Any construction grade adhesive suitable for use with a cementitious underlayment

FLOORING INSTALLATION REQUIREMENTS

SURFACE FLOOR PREP

Refer to ASTM F2419 for best practices.

Testing underlayment for dryness

Prior to floor-covering installation, a moisture test of the Maxxon Underlayment is recommended. When testing the underlayment for dryness, use ASTM F2659. The moisture content should not exceed 5%. If the Maxxon Underlayment pour is greater than 2", test using ASTM F2170. When a moisture meter is required, use a pin invasive type such as a Delmhorst model G-79 or Delmhorst BD2100. (On the model BD2100, make sure you are on Scale 3 “gypsum,” then use the digital display only, do not use the color-coded LED indicators). RH should not exceed 80%. Do not install floor goods until those limitations are met. If the flooring manufacturer specifies more stringent moisture limitations, they must be followed.

Approved Moisture Meters

Use a pin invasive meter.

- Delmhorst G-79
- Delmhorst BD-2100
  - Use Scale 3 “gypsum,” with digital display, do not use the color-coded LED indicators

Prepping Maxxon Underlayment

Flooring Contractors should expect that some floor prep will be required prior to flooring installation. Due to the nature of construction sites, it is not uncommon to find the Maxxon Underlayment covered with construction debris and other contaminants that must be removed prior to underlayment installation.

First broom clean the floor of loose debris, then use a commercial sander and screen mesh to remove drywall mud and paint. Use a shop vac to remove the remaining dust. Any oil, grease other contaminants must be properly treated and/or removed. Contact Maxxon for specific mesh size recommendations based on the flooring installed.

Sealing Maxxon Underlayment

Maxxon generally recommends that once dry the underlayment surface be primed prior to receiving a floor covering. In addition to being dry, the underlayment should be free of mud, oil, grease, or other contaminants.

Some adhesives may have different requirements. It is the responsibility of the Flooring Installer to prepare the underlayment according to the flooring manufacturer’s recommendations.

SURFACE FLOOR PREP *Continued*

Sealing for Standard Flooring installation

Porosity of the surface may impact performance of certain adhesives. An application of Maxxon® Commercial Gypsum Overspray will minimize surface porosity.

- DILUTION RATE – 6 parts water to 1 part overspray.
- After diluting per the above rate, spray or roll the Gypsum Overspray at a rate of 300 ft² (27.87 m²) per gallon of diluted mix.

For best results, the Gypsum Overspray should be applied 1–2 hours prior to adhesive application. Latex adhesives will not achieve maximum bond until moisture has dissipated.

Sealing as a Temporary Wear Surface

When the underlayment will be left uncovered for an extended period of time, Maxxon® Commercial Multi-Use Acrylic Primer can be used as a temporary wear surface for up to 90 days.

- DILUTION RATE – 1 part water to 1 part Multi-Use Acrylic.
- Spray or roll this dilution at a rate of 300 ft² (27.87 m²) per gallon of diluted mix.
- When it is time to install flooring, clean the floor and follow the “Sealing for Standard Flooring Installation” instructions above.

Sealing as a Permanent Wear Surface

Maxxon Commercial Fortify can be used over Maxxon Underlayments to create a wear surface in storage rooms, maintenance closets and areas with low foot traffic. Contact Maxxon Corporation for instructions.

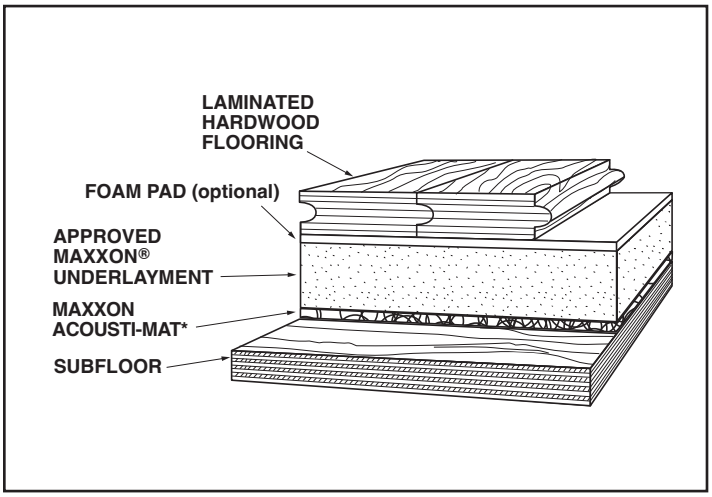
FLOOR COVERING COMPATIBILITY

Maxxon Underlayments are compatible with a variety of installation methods and flooring materials. See below for additional useful information related to common installation methods.

Adhesive Recommendations

Flooring manufacturers offer a variety of adhesives that are compatible with gypsum underlayments. Refer to the flooring manufacturer for adhesive recommendations as their product and installation recommendations may vary based on the flooring. Flooring manufacturer installation guidelines supersede all Maxxon flooring installation recommendations.

FLOATING FLOOR



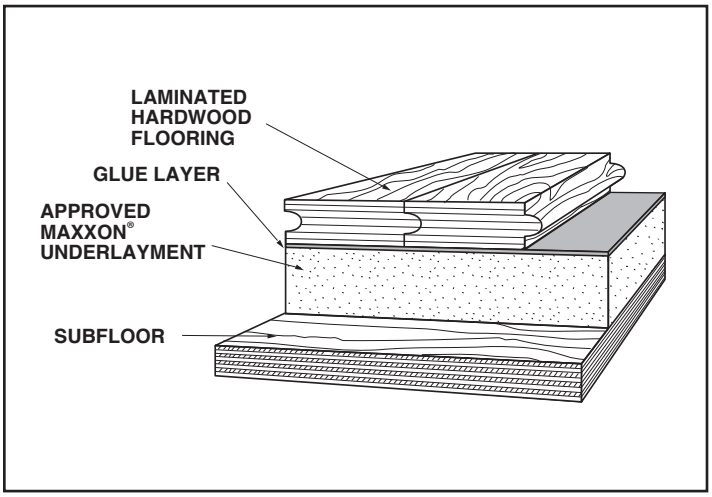
COMMONLY USED WITH:

- Carpet
- LVT
- Wood

NOTES:

- If installed as part of a sound control system, Maxxon recommends leaving a gap between flooring and wall for best performance of the acoustic system.

GLUE-DOWN



COMMONLY USED WITH:

- Wood
- LVT
- Sheet Vinyl
- Carpet

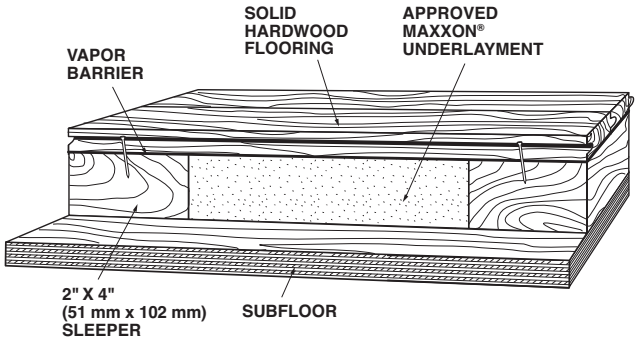
NOTES:

RADIANT APPLICATIONS

- **Over Vinyl**
  - The vinyl industry recommends that the floor surface temperature never exceed 85 °F (29.4 °C).
  - Floor temperature can affect open time and working time of adhesive. Lower the floor temperature during installation.
- **Over Wood**
  - For installation of wood flooring over radiant heat systems, refer to the NWFA or manufacturer for guidelines.

MECHANICAL ATTACHMENT

NAIL DOWN SLEEPER SYSTEMS



COMMONLY USED WITH:

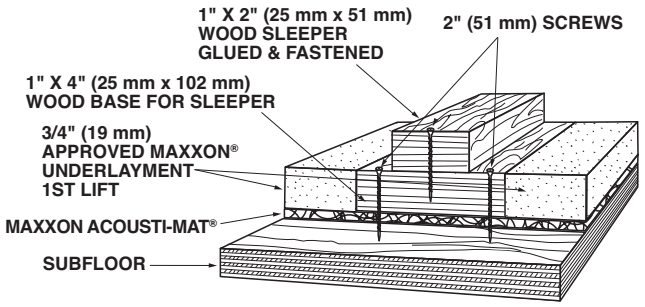
- Carpet
- Wood

NOTES:

- With this system, 2x4" (51x102 mm) sleepers are installed directly on the subfloor and the spaces between are then filled with an approved Maxxon Underlayment. Once the underlayment has dried, the flooring boards are nailed directly to the sleepers. In this system a vapor barrier can be installed between underlayment and flooring boards.
- Over radiant systems, care must be taken to prevent nails from penetrating into the underlayment and puncturing a tube.

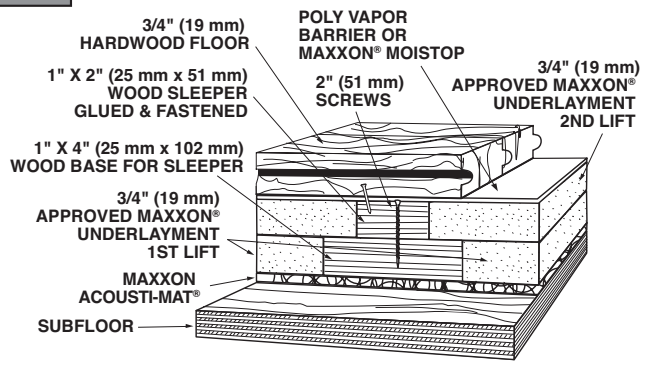
SLEEPER SYSTEM OVER ACOUSTI-MAT®

STEP 1



SLEEPER SYSTEM OVER ACOUSTI-MAT

STEP 2



COMMONLY USED WITH:

- Carpet
- Wood

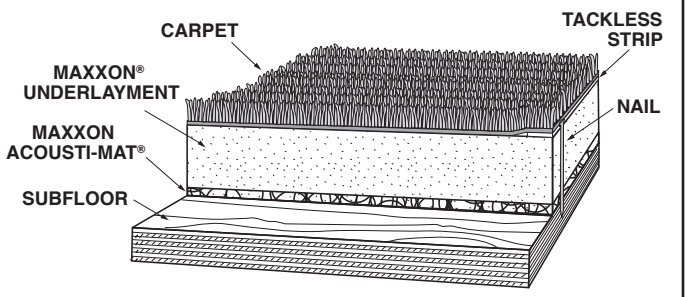
NOTES:

- After installation of sound mat, temporarily screw down 1"x4" sleeper with screws on outside edges of sleeper. Install the first 3/4" thick lift of Maxxon Underlayment.
- Once underlayment is walkable, install 1"x2"'s in the center of the 1"x4". Use only a 1-1/2" thick screw or less to attach the top 1"x2" to the bottom 1"x4". Remove temporary 2" screws in the 1"x4" edges so the constructed sleeper is now floating over the sound mat.
- Install the second 3/4" thick lift of Maxxon Underlayment making sure the underlayment completely covers the exposed surface of the 1"x4" and comes up to the top edge of the 1"x2", creating a flat surface with the sleepers.

MECHANICAL ATTACHMENT

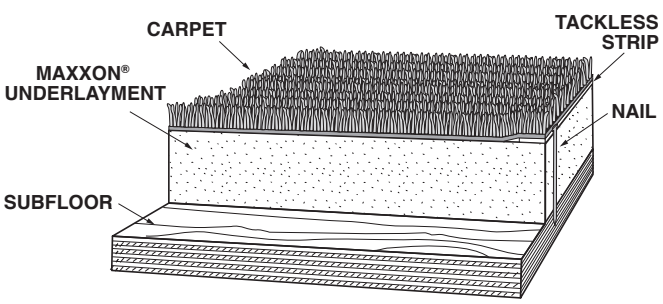
TACKLESS STRIPS

WITH SOUND MAT



TACKLESS STRIPS

WITHOUT SOUND MAT



COMMONLY USED WITH:

- Carpet

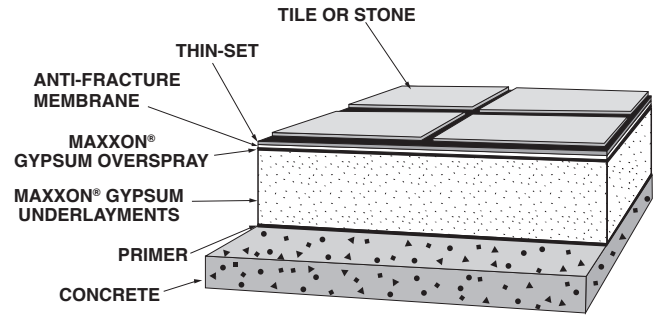
NOTES:

- **Over Wood Subfloors**
  - If the underlayment is 3/4" (19 mm) thick, use “Acoustical Concrete” tackless strips. If the underlayment is thicker than 3/4" (19 mm), use filler nails every 12–18" (305–457 mm) o.c. Use a filler nail long enough to penetrate at least 1/4" (6 mm) into the subfloor.
- **Over Concrete Subfloors**
  - Use standard tackless strips with concrete nails every 18–24" (457–610 mm). Use a concrete nail long enough to penetrate through the underlayment a minimum of 1/4" (6 mm) into the subfloor.
  - Use an air compressor-driven automatic nailer to install diamond point nails through the tackless strip and underlayment.
- **Over Maxxon Acousti-Mat Sound Control Systems**
  - Use standard pre-nailed “Acoustical Concrete” carpet tack strip with 12 ga. spiral shank nail (nail exposure 1").
- **Over Expanded or Extruded Polystyrene (EPS) Board**
  - When Maxxon Underlayments have been poured over expanded or extruded polystyrene, mechanical attachment of tackless strips is not recommended.

THINSET OR MORTAR BED

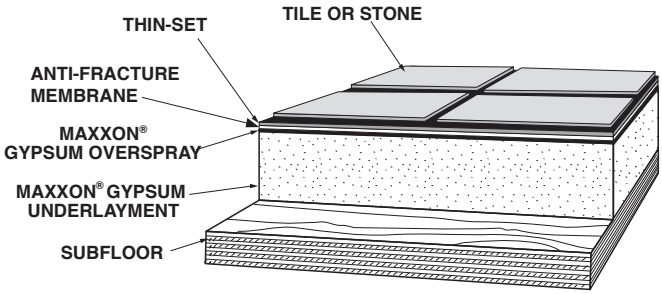
ANTI-FRACTURE MEMBRANES

CONCRETE



ANTI-FRACTURE MEMBRANES

PLYWOOD



USED WITH:

- Tile

NOTES:

- Maxxon and the Tile Council of North America (TCNA) recommend an anti-fracture membrane (ANSI A-118.12) to be installed over all poured gypsum underlayments prior to the application of all tile or stone installations. Anti-fracture membranes help reduce cracking caused by structural movement.
- The underlayment must be dry before the installation of these membranes unless otherwise stated by the membrane manufacturer.
- For tile installation over Maxxon Underlayments, Maxxon recommends reviewing the following relevant TCNA methods prior to installation. These methods are published in the Handbook for Ceramic Tile Installation. Call the TCNA at 864-646-8543, or view their website www.tcnatile.com.

— Expansion Joints

- If expansion joints are needed, follow the procedures and installation requirements of specification EJ171 in the TCNA Handbook

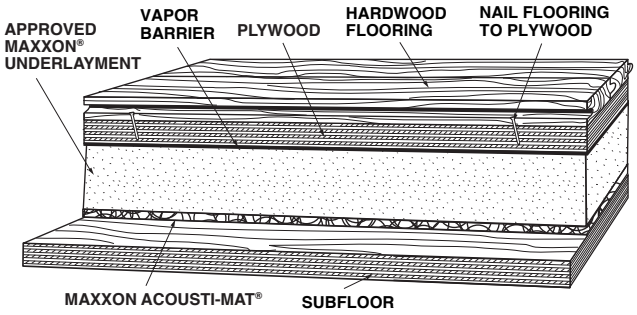
— TCNA Installation Methods for Gypsum Underlayments

- Concrete Subfloor F200-07
- Radiant Heat on Wood Subfloor RH122-07/F180-07
- Radiant Heat on Concrete RH111-07

— Additional TCNA Installation Methods for Cementitious
Self-Leveling Underlayments

- SLU Wood Joist F185-07
- SLU Bonded/Concrete F205-07
- SLU Hydronic/Concrete RH112-07
- SLU Electric/Concrete RH116-07
- SLU Hydronic/Wood Joist RH123-07

MECHANICAL ATTACHMENT TO PLYWOOD OVER MAXXON UNDERLAYMENT

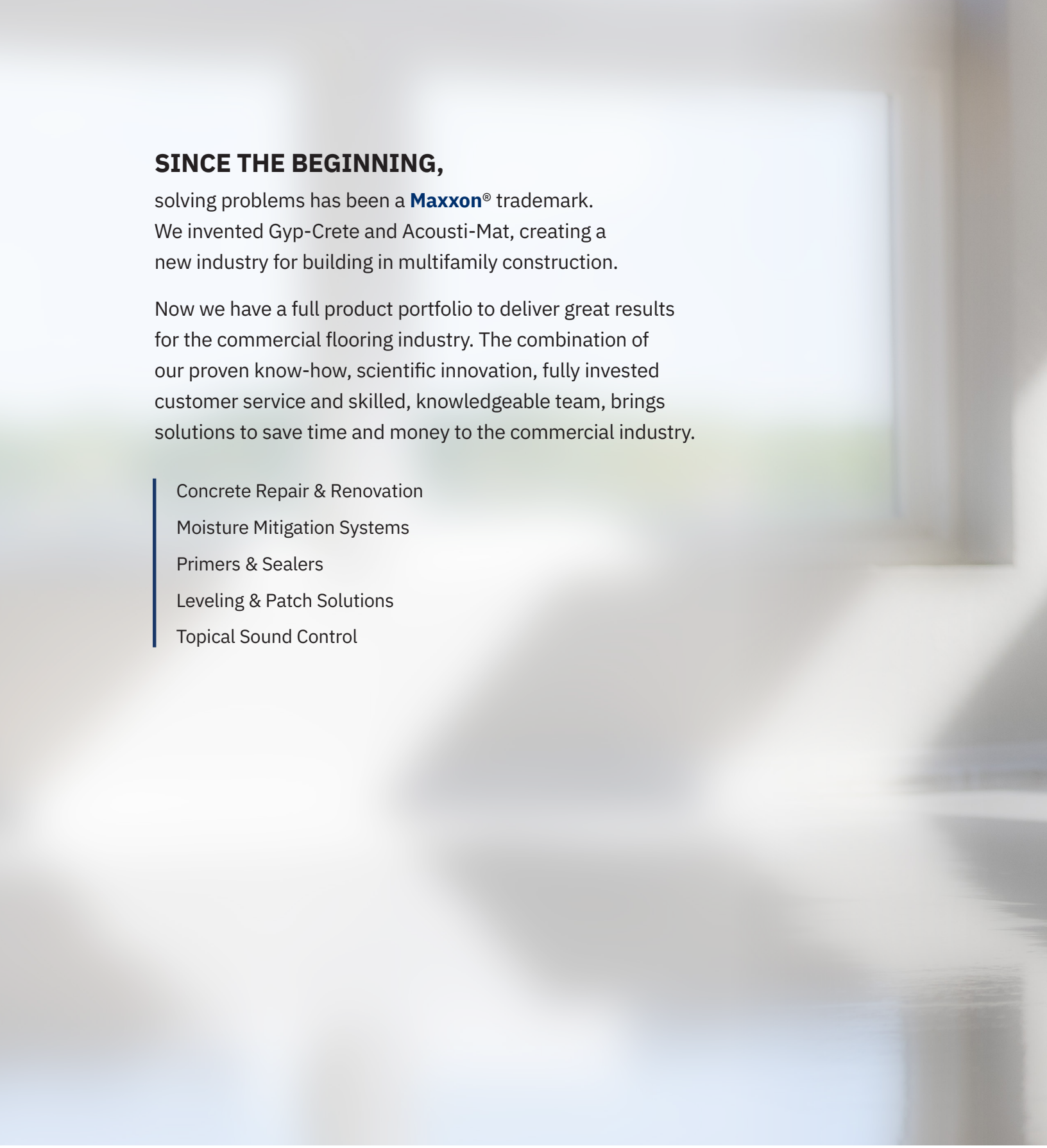


COMMONLY USED WITH:

- Carpet
- Wood

NOTES:

- Using a 1/4x1/4" (6x6 mm) square notched trowel to apply adhesive, set 4x4' (122 x122 cm) sheets of 3/4" (19 mm) exterior grade plywood into wet adhesive.
- Score plywood sheets on the backside every 8–10" (203–254 mm) using a circular saw and cutting one half the thicknesses of the sheets. Scoring or “kerfing” takes the tension out of plywood and helps prevent possible warping or curling.
- Allow to fully cure before nailing strip or using adhesive in a wet-lay or work-on-work method of installation.



SINCE THE BEGINNING,

solving problems has been a **Maxxon**® trademark. We invented Gyp-Crete and Acousti-Mat, creating a new industry for building in multifamily construction.

Now we have a full product portfolio to deliver great results for the commercial flooring industry. The combination of our proven know-how, scientific innovation, fully invested customer service and skilled, knowledgeable team, brings solutions to save time and money to the commercial industry.

- Concrete Repair & Renovation
- Moisture Mitigation Systems
- Primers & Sealers
- Leveling & Patch Solutions
- Topical Sound Control

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