MAXXON

1. Product Name

Maxxon® Floor Underlayments
- Gyp-Crete®
- Gyp-Crete 2000®/3.2 K
- Dura-Cap®
- Therma-Floor®
- Commercial Topping®

2. Manufacturer

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3. Product Description

BASIC USE

Maxxon Floor Underlayments are installed over wood and concrete subfloors to provide a suitable surface for installation of finished floor goods. The underlayment is pumped and poured in place, then smoothed for a hard, even surface. Maxxon produces a variety of underlayments suitable for a range of diverse applications:
- Over wood and concrete subfloors in multi-family construction
- Over corrugated steel decking for steel frame construction
- Over wood subfloors in single-family and light commercial construction
- Smoothing concrete slabs or precast planks in new or renovation projects
- Covering old floor goods, including vinyl asbestos tile
- Capping rough, pitted, cracked and out-of-level concrete
- As a thermal mass for radiant floor heating systems

Maxxon Floor Underlayments can be installed quickly and easily and offer compressive strengths from 2000 - 4500 psi (14 - 31 MPa). Up to 40,000 ft^2 (3716 m^2) of 3/4" (19.1 mm) thick gypsum cement underlayment can be applied in one day.

COMPOSITION & MATERIALS

Materials consist of a formulated gypsum cement mixed with sand and water. Maxxon gypsum underlayments are inorganic and provide no source of nutrients to sustain mold growth. See Table 2 for specific product composition details.

TYPES

Gyp-Crete®

Gyp-Crete floor underlayment is designed for use over wood and concrete subfloors in multi-family construction, absorbing sound and providing a smooth surface for finished floor goods. With compressive strengths to 2000 psi (14 MPa), Gyp-Crete is ideal for use in apartment, condominium, townhome, hotel and motel construction. Gyp-Crete is now always made with pre-consumer recycled content and is considered a "green" building material.

Gyp-Crete 2000®/3.2K

Gyp-Crete 2000/3.2K is designed for use over wood subfloors in single-family and light commercial construction, as well as in renovation projects. Gyp-Crete 2000/3.2K delivers compressive strengths to 3200 psi (22 MPa), enhanced resistance to surface abrasion and fast dry times. Its crack resistant surface provides a durable base for most floor coverings and is suitable for hotels, motels, retail stores, offices and similar applications.

Gyp-Crete 2000/3.2K is now always made with pre-consumer recycled content and is considered a "green" building material.

Therma-Floor®

Therma-Floor is an underlayment designed specifically for pouring over hot water tubes or electric heating cables in radiant floor heating systems, encasing them in crack resistant, noncombustible gypsum. It provides the ideal thermal mass for any radiant floor, keeping the area warmer longer. It also enhances fire control and reduces noise transmission. Therma-Floor is poured to only 1 1/4" (32 mm) thick, making for a responsive and comfortable heating system. Therma-Floor resists breakdown to 150 degrees F (66 degrees C).

Therma-Floor is now always made with pre-consumer recycled content and is considered a "green" building material.

Dura-Cap®

Dura-Cap smoothes concrete slabs or precast planks in new or renovation projects and covers old floor goods, including vinyl asbestos tile. Delivering compressive strengths to 3800 psi (26 MPa), Dura-Cap is formulated to cap rough, pitted, cracked and out-of-level concrete. It can be poured from 3" (76 mm) to a featheredge and in renovation projects can be poured directly over old tile and adhesive residue.

Maxxon Underlayments provide solutions for floor leveling, sound control, floor warming and enhanced fire control.

Dura-Cap is now always made with pre-consumer recycled content and is considered a "green" building material.

Gyp-Crete 2000/3.2K and Dura-Cap can also be used over a special encapsulant to abate vinyl asbestos tile. Details are available from Maxxon Corporation.

Commercial Topping®

Commercial Topping creates a strong, smooth finish over precast, wood frame and old cracked lightweight concrete. Poured from a featheredge to 3" (76 mm) in new construction or renovation projects, it achieves compressive strengths of 4000 - 4500 psi (27.6 - 31 MPa) and pours over VAT, VCT, terrazzo or ceramic with no shotblasting required. Commercial Topping is fast drying and is an ideal underlayment to meet ASTM F710.

Commercial Topping is now always made with pre-consumer recycled content and is considered a "green" building material.

BENEFITS

Maxxon Floor Underlayments deliver a wide range of benefits and offer a cost-effective means to meet performance specifications in new construction and renovation projects. Maxxon underlayments:
- Eliminate nail pops and squeaks associated with plywood subfloors

Maxxon Corporation

Maxxon Underlayments can turn a rough, irregular surface into one that is smooth and flat - ready for floor goods fast.

- Offer quick, cost-effective installation
- Fill cracks and joints, reducing or eliminating a major source of sound leakage between floors
- Muffle sound transmission, despite their light weight
- Are fast drying and ready for final flooring application, usually within 5 - 7 days
- Are lightweight, making them ideal for wood-framed buildings
- Seal perimeter cracks, reducing sound leaks
- Accept most types of floor covering, including vinyl tile, ceramic tile, wood laminate, glued-down hardwood and carpeting
- Compressive strengths to 4500 psi (31 MPa)
- May contribute points toward LEED® project certification

LIMITATIONS

Maxxon Floor Underlayments require a floor covering and are not for use as wear surfaces. They are not to be used on or below grade or where continuous exposure to moisture is possible. Concrete moisture or vapor emission must be eliminated prior to below-grade, on-grade or suspended slab Maxxon underlayment application.

Maxxon underlayments cannot resist stresses caused by sudden structural movement. The structural subfloor must comply with APA maximum span/joist criteria and be adequate to withstand design loads with a deflection limitation of L/360.

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C177 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM C190 Standard Method of Test for Tensile Strength of Hydraulic Cement Mortars
- ASTM C348 Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
- ASTM C472 Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM F710 Practice for Preparing Concrete Floors to Receive Resilient Flooring

Lightweight Therma-Floor® encases tubes or electric cables in a crack resistant layer of noncombustible gypsum.

APPROVALS

Maxxon Floor Underlayments are recognized by the following:

- City of Los Angeles
- City of San Francisco
- GREENGUARD Indoor Air Quality Certified®
- GREENGUARD Children & Schools℠
- ICC-ES Evaluation Report ESR-1153
- ICC-ES Evaluation Report ESR-2540
- ICC-ES Legacy Report ER-3433
- ICC-ES Legacy Report #90-31
- Metro Dade County, Florida
- State of Rhode Island
- Underwriters Laboratories (UL)

TABLE 1 APPROVED DESIGN NUMBERS

UL Design Numbers											
G524	G560	G561	G563	G566	G574	J917	J919	J920	J924	J927	J931
J957	J958	J966	J994	L004	L005	L006	L201	L202	L206	L208	L209
L210	L211	L212	L501	L502	L503	L504	L505	L506	L507	L508	L509
L510	L511	L512	L513	L514	L515	L516	L517	L518	L519	L520	L522
L523	L524	L525	L526	L527	L528	L529	L530	L533	L534	L535	L536
L537	L538	L539	L540	L541	L542	L543	L544	L545	L546	L547	L548
L549	L551	L552	L555	L556	L557	L558	L559	L560	L562	L563	L564
L569	L573	L574	L579	L581	L583	L585	L588	L589	L592	L593	L594
L599	M500										
ULC Design Numbers											
L003	L201	L511	L512	M500	M501	M503	M513	M514	M517		

- Underwriters' Laboratories of Canada (ULC)
- U. S. Department of Housing and Urban Development 951 h

See Table 1 for a list of approved UL and ULC design numbers.

PHYSICAL PROPERTIES

See Table 2 for information concerning composition and physical properties of Maxxon Floor Underlayments.

FIRE PERFORMANCE

Maxxon gypsum cement underlayments have the following surface burning characteristics (ASTM E84):

- Flamespread - 0
- Fuel contribution - 0
- Smoke development - 0

ACOUSTICAL PERFORMANCE

Maxxon Corporation has performed over 60 different sound tests on Maxxon Floor Underlayments. Each was performed by recognized testing agencies over a wide variety of floor/ceiling assemblies. All tests had sound ratings above the minimum values accepted by major housing codes. The acoustical performance of Gyp-Crete, Gyp-Crete 2000/3.2 K, Therma-Floor, Dura-Cap and Commercial Topping are all similar.

ENVIRONMENTAL CONSIDERATIONS

See Table 3.

5. Installation

Maxxon gypsum cement underlayment installation must be completed by a manufacturer-authorized applicator using approved mixing and pumping equipment.

Generalized Maxxon installation instructions are included below. Specifications for the following specific applications are available from the manufacturer at www.maxxon.com:

- Multifamily housing
- Over extruded or expanded polystyrene foam
- Multifamily housing after removal of 1 1/2 Lightweight Concrete
- Wood frame commercial construction
- Single-family housing
- Capping cracked 1 1/2" Lightweight Concrete
- Over Acousti-Mat® II Sound Deadening Mat
- Over Acousti-Mat® II in hard surface areas in multifamily housing
- Over Maxxon Moistop for old wood frame construction
- Wood frame multifamily construction
- Topping concrete floors
- Capping cracked concrete
- As an enclosure over an asbestos soil-penetrating encapsulant in soil floored crawl space or tunnel areas
- Topping old wood hardwood floors
- Over precast concrete slabs
- "Green" floor underlayments
- Topping corrugated steel deck over light-gauge steel framing
- Topping wood sleepers in cinder concrete
- Topping concrete floors in nursing homes and hospitals
- With silica sand for topping concrete floors
- Over vinyl asbestos tile
- Capping cracked concrete in multifamily housing
- As the heat mass for radiant floor heating
- As the heat mass for radiant floor heating over extruded or expanded polystyrene foam

TABLE 2 COMPOSITION & MATERIALS, PHYSICAL PROPERTIES

Product	Gyp-Crete	Gyp-Crete 2000/3.2 K	Therma-Floor	Dura-Cap	Commercial Topping
Subfloor	Wood, concrete	Wood, concrete	Wood, concrete	Concrete, precast planks, steel deck	VAT, VCT, terrazzo, ceramic, concrete, precast, wood frame, steel deck
Construction	Multifamily, renovation projects	Single family, multi-family, light commercial, renovation	Radiant floor heating systems	New or renovation projects, commercial, multi-family	Commercial, institutional
Applications	Apartments, townhomes, condominiums, motels, hotels	Single-family homes, apartments, businesses, condos	Thermal mass for radiant floor	Smooth or cap rough, pitted concrete	Under resilient flooring
Other uses	-	Vinyl asbestos tile abatement	-	Vinyl asbestos tile abatement	-
Compressive strength, ASTM C472	To 2000 psi (14 MPa)	To 3200 psi (22 MPa)	To 3000 psi (21 MPa)	To 3800 psi (26 MPa)	To 4500 psi (31 MPa)
Dry density, ASTM C472	100 pcf (1602 kg/m^3)	115 pcf (1842 kg/m^3)	115 pcf (1842 kg/m^3)	115 pcf (1842 kg/m^3)	125 pcf (2003 kg/m^3)
Flexural strength, ASTM C348	-	-	-	-	1660 psi (11.4 MPa)
Environmental considerations	Now always a "green" building material; GREENGUARD Indoor Air Quality Certified	Now always a "green" building material; GREENGUARD Indoor Air Quality Certified	Now always a "green" building material; GREENGUARD Indoor Air Quality Certified	Now always a "green" building material; GREENGUARD Children and Schools Certified	Now always a "green" building material; GREENGUARD Children and Schools Certified
Tensile strength, ASTM C190	-	-	-	-	460 psi (3.2 MPa)
K factor, ASTM C177	4.75 Btu/(h x ft^2 x °F) (0.6840 W/(m x °C))	5.15 Btu/(h x ft^2 x °F) (0.7416 W/(m x °C))	4.96 Btu/(h x ft^2 x °F) (0.7142 W/(m x °C))	4.76 Btu/(h x ft^2 x °F) (0.6854 W/(m x °C))	-
Specific heat, ASTM C177	0.223 Btu/(lb x °F) at 85° F (0.9343 kJ(kg x °C) at 29.44° C)	0.222 Btu/(lb x °F) at 85° F (0.9301 kJ(kg·°C) at 29.44° C)	0.224 Btu/(lb x °F) at 85° F (0.9385 kJ(kg x °C) at 29.44° C)	0.229 Btu/(lb x °F) at 85° F (0.9595 kJ(kg x °C) at 29.44° C)	-

TABLE 3 ENVIRONMENTAL CONSIDERATIONS			
USGBC LEED	Category	Credit	
Materials & Resources	Construction Waste Management	MR 2.1, MR 2.2	
Materials & Resources	Recycled Content	MR 4.1, MR 4.2	Pre-consumer: Fly Ash
Materials & Resources	Regional Materials	MR 5.1, MR 5.2	Blue Rapids, KS 66411 Camden, NJ 08103 Brunswick, GA 31521 Las Vegas, NV 89124 Jobsite manufactured with local sand and water
Indoor Environmental Quality	Air Quality Before Occupancy	EQ 3.2	GREENGUARD Children and Schools Certified
Indoor Environmental Quality	Low Emitting Materials: Floor System	EQ 4.3	GREENGUARD Children and Schools Certified
Innovation & Design	Sound Control	ID 1.1	

PREPARATORY WORK

Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer. Remove any damaged or deteriorated material from the jobsite.

Before, during and after Maxxon underlayment installation, the building interior must be enclosed and temperatures maintained at 50 degrees F (10 degrees C) until the structure and subfloor temperatures are stabilized. Although Maxxon Floor Underlayments are inorganic and provide no source of nutrients to sustain mold growth, prolonged contact of moisture with other construction materials can result in mold growth. To avoid mold growth on construction materials such as wallboard and drywall compound, it is vital to maintain a low relative humidity both before and after placement of Maxxon gypsum underlayments. Controlling moisture levels in the building through appropriate trade sequencing and prevention of potential damage by other trades is the responsibility of the general contractor, who must supply mechanical ventilation and heat if necessary.

Install floor underlayment or topping after drywall installation, unless the finish requirements call for partition installation after pouring underlayment.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected. Ensure that the subfloor is structurally sound. Clean the subfloor to remove mud, oil, grease and other contaminants before applying underlayment. Fill cracks and voids with a quick-setting caulk or patching material where product leakage could occur. Prime concrete subfloor using a primer approved by the manufacturer. Apply multiple coats of primer as necessary according to the porosity of the concrete. Expansion joints in all types of work must be brought through the underlayment. Allow joints to continue through cementitious underlayment at the same width.

METHODS

Mix proportions and methods must be in strict accordance with manufacturer recommendations. Mix water must be potable and free from impurities.

Install the underlayment or topping to the required depth, based on the product and application, and in accordance with manufacturer recommendations. Spread to achieve a smooth surface.

Provide continuous ventilation and adequate heat to remove moisture from the area until the underlayment or topping sets. Provide mechanical ventilation as necessary to enhance the drying process.

Maxxon offers an installation brochure for flooring materials. Refer to these guidelines for more information. The procedures described are to be used as guidelines only and do not constitute a warranty. Where floor goods manufacturers require special adhesive or installation systems, their requirements supersede these requirements.

PRECAUTIONS

During construction, place temporary wood planking over the underlayment or topping if it will be subject to heavy wheeled or concentrated loads. Protect installed products until the project is complete.

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

6. Availability & Cost

AVAILABILITY

Maxxon Floor Underlayments are available from certified dealers and regional representatives. Contact Maxxon Corporation for availability information in specific localities.

COST

Cost information may be obtained from Maxxon dealers.

7. Warranty

Complete warranty terms and conditions are available from the manufacturer. For details, consult Maxxon Corporation.

8. Maintenance

None required.

9. Technical Services

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Maxxon Corporation.

10. Filing Systems

- SmartBuilding Index (SBI)
- ARCAT®
- Sweet's Catalog Files
- GREENGUARD Environmental Institute
- Additional product information is available from the manufacturer upon request.