

Firm-Fill[®]
Sound Control Mats



Firm-Fill[®]
Gypsum Underlayments



PRODUCT GUIDE



FIRM-FILL® Sound Control Mats & Gypsum Underlayments

A quiet living space is our business. Established in 1983, Hacker Industries, Inc. offers a full line of FIRM-FILL® Sound Control Mats (SCM) and pourable FIRM-FILL® Gypsum Concrete Underlayments to meet demanding sound-attenuating and fire-resistance specifications. More than five billion square feet of FIRM-FILL® SCM and FIRM-FILL® Gypsum Concrete Underlayments have been installed in residential, multi-family, and commercial projects across North America; demonstrating proven performance over plywood, OSB, corrugated steel deck, concrete or any structurally sound substrate.



FIRM-FILL® SCM are the only sound control mats that are color coded for quality control. These durable, lightweight sound control mats are engineered to limit impact and airborne sound transmission between units when used in conjunction with FIRM-FILL® Brand Gypsum Underlayments. FIRM-FILL® SCM can improve IIC ratings 15-25 points and carry a Class-A fire rating under ASTM E84.



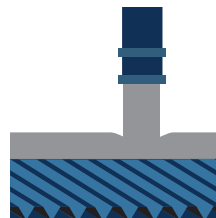
All FIRM-FILL® Gypsum Underlayments are quick drying and offer a flat, durable surface for finished floor coverings. They meet ASTM F2419; Standard Practice for the Installation of Thick Poured Gypsum Concrete Underlayments, as well as the updated ICC-ESR 3386 and IAPMO ER-474, and Los Angeles City RR 24540.

Hacker Industries, Inc. does not sell its products directly to the general public. Rather, it provides distribution through a network of trained Licensed Applicators.

Applications for Multi-Family, Commercial and Hospitality



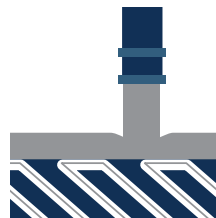
Fire Attenuation
FIRM-FILL® Gypsum Underlayments are an integral component of over 105 UL-rated floor/ceiling assemblies with one to four hour fire ratings.



Corrugated Metal Decking
Poured gypsum underlayments are lighter than concrete, making them an ideal component in light gauge steel structures where weight is a major design factor.



Sound Attenuation
FIRM-FILL® SCM sound control mats, working in conjunction with FIRM-FILL® Gypsum Underlayments, create a sound attenuation system to reduce the spread of IIC/STC sound between units.



Radiant Floor Heating
GYP-SPAN® Radiant is specially formulated for use in conjunction with radiant heating products to create even heat distribution throughout the entire floor.



Concrete Topping & Self-Levelers
Among the line of FIRM-FILL® Gypsum Concretes are cost effective solutions to most topping and leveling problems.



Topcoats & Sealers
Hacker Industries, Inc.'s TopCoat® and Sealer products will help create the best possible floor underlayment substrate for finished floor goods.

FIRM-FILL® Gypsum Underlayments Overview

FIRM-FILL® Gypsum Concrete: Introduced in 1983, Super Blue creates a flat, durable surface with compressive strengths up to 2200 psi and excellent STC and IIC ratings.

FIRM-FILL® 2010+: developed specifically for use over plywood or OSB subfloors to produce the hard, smooth surface for finished floor coverings with compressive strengths of 2000-3200 psi.

FIRM-FILL® 3310 Classic: a premium poured floor underlayment delivering compressive strengths from 2000-3300 psi. Ideal over wood or concrete subfloors in multi-family, hospitality, and renovation projects.

FIRM-FILL® 3310+: a premium, fast-setting gypsum-based floor underlayment that maximizes sound control and creates an exceptionally smooth, flat and high-strength up to 3900 psi surface.

FIRM-FILL® High Strength: a cost-efficient leveling and resurfacing gypsum-based floor underlayment for new construction or renovation projects with a compressive strength of 2500-3800 psi.

FIRM-FILL® 4010+: provides compressive strengths from 4000-5200 psi and superior bonding characteristics for cost-effective thin-capping of damaged or uneven concrete to maximize sound control.

FIRM-FILL® CMD: a lightweight, high-strength gypsum floor underlayment for use over corrugated steeldeck in multi-family, commercial and institutional buildings, provides superior acoustical control with compressive strengths from 3500 psi.

GYP-SPAN® Radiant: a special, non-shrinking gypsum floor underlayment designed for use over radiant heating systems that provides uniform heat transfer and compressive strengths of 2000-3200 psi.

FIRM-FILL® Sound Control Mats Overview

FIRM-FILL® SCM-125: a 1/8" (3mm) sound control mat, is engineered to limit impact sound transmission in multifamily construction. Ideal for when the gypsum concrete pour is not a standard thickness, FIRM-FILL® SCM-125 is topped with a minimum of 3/4" (19mm) of a FIRM-FILL® Brand Gypsum Underlayment to create an effective low profile sound control system.

FIRM-FILL® SCM-250: is a 1/4" (6mm), random filament, corrugated, "U" groove core sound control mat designed to limit impact noise between floors. When used in conjunction with a 1" FIRM-FILL® Brand Gypsum Concrete topping, the combined system has been tested to achieve a "Light Commercial" rating from the Tile Council of North America.

FIRM-FILL® SCM-400: is a 3/8" (10mm) sound mat is efficiently engineered to limit sound transmission in multifamily construction. Ideal for when the gypsum concrete pour is not a standard thickness.

FIRM-FILL® SCM-750: is a 3/4" (19mm) sound mat, that helps create sound resistant floors with the high IIC and STC level required by IBC 2009. It is a cost-effective way to address higher IIC requirements.

Hacker Sound Mat II: an innovative sound mat is composed of 92 percent recycled rubber and is designed to provide a quieter environment and meet the most demanding project specifications.

Gypsum Concrete Underlayments



FIRM-FILL® Gypsum Concrete

Super Blue is a cost-effective solution to satisfy acoustical ratings and fire codes in multifamily construction. Designed for application over plywood or OSB subflooring, FIRM-FILL® Gypsum Concrete delivers a smooth, flat surface for finished floor coverings.

- Compressive strength up to 2200 psi
- Meets ASTM F2419
- Minimum 3/4" (19 mm) over wood
- Helps increase sound ratings between units
- Listed in over 130 UL fire-rated designs
- Fast application and quick drying time



FIRM-FILL® 2010+

Installed over wood subfloors, FIRM-FILL® 2010+ delivers optimal compressive strengths while providing improved STC and IIC ratings in multi-family and single family construction. Reengineered to create a flatter, harder, and smoother surface for finished floor coverings.

- Compressive strength from 2000–3200 psi (13.8–22 MPa)
- Apply from 3/4" (19 mm) to 3-1/2" (89 mm)
- Greater abrasion resistance
- Increased sound and fire performance
- Stiffens subfloor to eliminate squeaks



FIRM-FILL® 3310 Classic

Premier gypsum underlayment ideal for wood frame, light commercial, renovation, and hospitality projects. FIRM-FILL® 3310 Classic requires less water, allowing for accelerated drying time and unparalleled levels of strength and finish.

- Compressive strength from 2000–3300 psi (13.8–22.8 MPa)
- Apply from 3/4" (19mm) to 3-1/2" (89mm)
- UL designs with 1 and 2-hour fire ratings
- Creates a durable, hard surface
- Acceptable with most flooring solutions
- Meets TCNA standards RH111 and RH122



FIRM-FILL® 3310+

A unique poured floor underlayment, FIRM-FILL® 3310+ delivers best in class performance. It is ideal over wood or concrete subfloors to maximize sound control and is integral in a UL fire rated floor/ceiling assembly.

- Compressive strength from 3000–3900 psi (20.7–26.9 MPa)
- Apply from 3/4" (19 mm) to 3-1/2" (89 mm)
- Solid and crack resistant
- Acceptable with finished floor coverings, including laminates, wood, stone, tile and carpet

Gypsum Concrete Underlayments



FIRM-FILL® High Strength

Solid, cost-effective solution for producing a durable, firm surface for finished floor coverings. Can also correct concrete problems in light commercial, renovation and repair projects.

- Compressive strength from 2500–3800 psi (17.2–26 MPa)
- Apply from featheredge to 3-1/2" (89 mm)
- L-240 required
- Acceptable with a variety of finished floor coverings, including laminates, stone and tile



FIRM-FILL® 4010+

Engineered for thin capping existing concrete floors that may be damaged, jagged, or uneven. FIRM-FILL® 4010+ provides outstanding bonding characteristics to give old concrete floors new life.

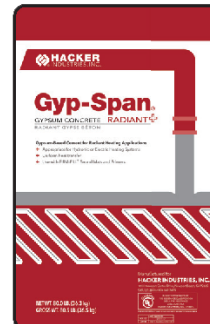
- Designed to provide a smooth, flat surface for finished floor coverings
- Compressive strength from 4000–5200 psi
- Install from featheredge to 2" (51 mm)
- Lightweight, high strength
- No shot blasting or surface prep required



FIRM-FILL® CMD

Ideal for multi-family and mid-rise commercial projects with light-gauge steel frame construction and corrugated metal deck. FIRM-FILL® CMD is an economical solution to build higher and faster and still achieve a smooth, flat surface.

- Compressive strength from 3500 psi (24.1 MPa)
- Average thickness of 1-9/16" (40 mm)
- Lightweight alternative for fast track construction
- UL designs with 1 and 2-hour fire ratings
- Provides smooth, flat and durable surface for finished floorings



GYP-SPAN® Radiant

Designed specifically for use in hydronic or electrical radiant heat systems. GYP-SPAN Radiant® is the perfect solution in custom residential housing to create a thermal mass for even distribution of heat where it matters most - under your feet.

- Compressive strength from 2000–3200 psi (13.8–22 MPa)
- Minimum 3/4" (19 mm) above tubes/cables
- Meets TCNA standards RH111 and RH122
- No shrinkage cracks
- Acceptable under a variety of finished floor coverings

Sound Control Mats



FIRM-FILL® SCM-125

At just 1/8" (3 mm), FIRM-FILL® SCM-125 delivers big noise reduction

results, while maintaining a low profile. Ideal for multi-family construction when the gypsum concrete pour is less than 1", FIRM-FILL® SCM-125 creates smoother floor transitions between carpet and hard surface areas.

- Quick and easy installation
- Dramatically improves IIC ratings under a variety of floor coverings
- Minimum 3/4" (19 mm) FIRM-FILL® Brand Gypsum Concrete topping

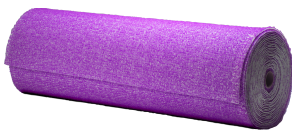


FIRM-FILL® SCM-250

FIRM-FILL® SCM-250 is a cost-effective solution to address STC/IIC

requirements in multi-family construction. Tested by independent, third party test facilities, this 1/4" (6 mm) sound control mat is proven to increase STC/IIC levels in wood frame construction.

- Lightweight; Quick and easy installation
- Helps reduce noise transmission between units
- Outstanding under laminate flooring
- Minimum 1" (25 mm) FIRM-FILL® Brand Gypsum Concrete topping

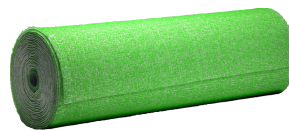


FIRM-FILL® SCM-400

For luxury, high end multi-family projects, FIRM-FILL® SCM-400

delivers extraordinary IIC values. At 3/8" (10 mm) thick, FIRM-FILL® SCM-400 provides additional noise control when a thicker mat is specified. There is minimal deflection and no creep or long-term degradation.

- Lightweight; Easy to handle and install
- Helps elevate sound performance in wood-frame, steel, and concrete systems
- Minimum 1-1/4" (32 mm) FIRM-FILL® Brand Gypsum Concrete topping



FIRM-FILL® SCM-750

Provides excellent sound performance in the mid and high range

frequencies. At 3/4" (19 mm), FIRM-FILL® SCM-750 has the largest air void of any sound control mat, dramatically improving sound attenuation in critical applications. Ideal in assemblies with challenging noise control requirements.

- Lightweight; Easy to handle and install
- Additional impact sound deadening when thicker mat is specified
- Minimum 1-1/2" (38 mm) FIRM-FILL® Brand Gypsum Concrete Underlayment

Sound Control Mats

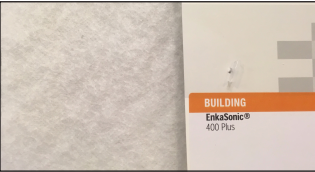


EnkaSonic® 250 Plus

With the added layer of a microfibrus non-woven fabric for additional

sound muffling, EnkaSonic® 250 Plus lowers both structural and airborne sound transmission by its ability to convert and store vibrational energy when used in combination with FIRM-FILL® Gypsum Concrete Underlayments.

- Nominal 1/3" (8 mm) thick sound control mat
- The Plus fabric provides a sound muffling effect
- Minimum 1" (25 mm) FIRM-FILL® Brand Gypsum Concrete topping

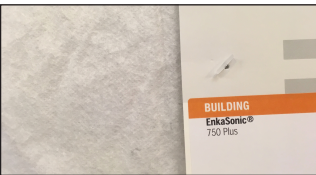


EnkaSonic® 400 Plus

An entangled net acoustical control mat with a layer of microfibrus

non-woven fabric for additional sound muffling. EnkaSonic® 400 Plus increases the IIC performance of the floor/ceiling assembly by up to 18 points over wood frame construction and up to 25 points over concrete construction.

- Nominal 1/2" (12 mm) thick sound control mat
- Helps reduce noise transmission between units
- Outstanding under laminate flooring
- Minimum 1-1/4" (31 mm) FIRM-FILL® Brand Gypsum Concrete topping



EnkaSonic® 750 Plus

Like walking on a cloud, EnkaSonic® 750 Plus provides the greatest

sound attenuation of any sound mat in its class. The large void space created by the entangled net design, along with its layer of microfibrus non-woven fabric, provide the ultra-luxurious levels of sound resistance.

- Nominal 4/5" (20 mm) thick sound control mat
- Helps elevate sound performance in wood-frame, steel, and concrete systems
- Minimum 1-1/2" (38 mm) FIRM-FILL® Brand Gypsum Concrete topping



HACKER SOUND MAT II

Hacker Sound Mat II is a 1/4" (6 mm), dimpled mat designed to maximize

IIC ratings while meeting indoor air quality standards.

- Low compression set
- System rated for commercial & residential use per ASTM C627
- Minimum 1-1/4" (32 mm) FIRM-FILL® Brand Gypsum Concrete topping
- Withstands movement of heavy equipment

Hacker Reinforcement



Hacker Reinforcement is a reinforcement product used in conjunction with Firm-Fill® SCM Sound Control Mats and Firm-Fill® Gypsum Concrete Underlayments for crack suppression and to reduce the gypsum underlayment pour depth.

- Light and easy to handle , easy to cut with scissors or utility knife
- No memory, unlike metal lath
- Dimensionally stable in hot weather; not brittle in cold

Hacker Floor Sealer



A clear, water based, vinyl acrylic copolymer sealer that is recommended over FIRM-FILL® Gypsum Concrete Underlayments when protection is needed from subsequent construction traffic.

- Used to prevent wear on underlayment during construction
- Installed by trained Licensed Applicators

Hacker Floor Primer



Required to enhance the bond between a FIRM-FILL® Brand Gypsum Concrete and existing wood structural substrate, Hacker Floor Primer also decreases moisture penetration on the existing wood subfloor. Hacker Floor Primer is available in liquid.

- Substrate primer for FIRM-FILL® Underlayments
- Meets ASTM F2419; Standard Practice for the Installation of Thick Poured Gypsum Concrete Underlayments
- Installed by trained Licensed Applicators

Hacker TopCoat® SP



An acrylic based, film-forming surface preparation agent, which provides optimal surface bonding conditions for most floor covering adhesive products.

- Improves bond between Hacker floor underlayment and floor covering adhesives
- Meets ASTM F2419; Standard Practice for the Installation of Thick Poured Gypsum Concrete Underlayments
- Installed by trained, Licensed Applicators

Choosing the Right Underlayments

		Type of Subfloor	Recommended PSI	FIRM-FILL® Gypsum Concrete	FIRM-FILL® 2010+	FIRM-FILL® 3310 Classic	FIRM-FILL® 3310+	FIRM-FILL® High Strength	FIRM-FILL® 4010+	FIRM-FILL® CMD	GYP-SPAN® Radiant
Multi-family	Wood New	1200-3300									
	Wood Renovation	1500-3300									
	Concrete New	2500-5500									
	Concrete Renovation	1500-3300									
	Corrugated Steel Deck	Min. 3500									
	Radiant Heating	2000-3200									
Hospitality	Wood New	1200-3300									
	Wood Renovation	1500-3300									
	Concrete New	2500-5500									
	Concrete Renovation	1500-3300									
	Radiant Heating	2000-3200									
Commercial	Wood New	1200-3300									
	Wood Renovation	1500-3300									
	Concrete Plank	3000-5500									
	Concrete New	2500-5500									
	Concrete Renovation	1500-3300									
	Corrugated Steel Deck	Min. 3500									
	Radiant Heating	2000-3200									

Recommended
 Optional
 Over wood, reinforcement is required

Choosing the Right Sound Control Mat

		Floor System			Finished Flooring	
		FIRM-FILL® SCM-125			FIRM-FILL® SCM-250	
		FIRM-FILL® SCM-400			Finished Flooring	
					Hacker Sound Mat II	
Open Web	2mm Vinyl Plank	51 IIC	53 IIC	53 IIC	7mm Laminate	53 IIC
	3mm Vinyl Tile	53 IIC	53 IIC	54 IIC	3mm LVT	50 IIC
	2mm Vinyl Sheet	51 IIC	54 IIC	53 IIC	3mm LVT over Hacker Sound Mat	52 IIC
	7mm Sheet Vinyl w/ Rubber Backing	57 IIC	58 IIC	58 IIC	3mm LVT over 5mm Encore QT4005	53 IIC
	13mm Engineered Wood	57 IIC	57 IIC	58 IIC	3mm LVT over 10mm Encore QT4010	53 IIC
Nominal Wood	2mm Vinyl Plank	50 IIC	50 IIC	52 IIC	Stone Tile	51 IIC
	3mm Vinyl Tile	52 IIC	50 IIC	53 IIC	Oak Flooring	54 IIC
	2mm Vinyl Sheet	53 IIC	51 IIC	53 IIC	2mm Vinyl Sheet	53 IIC
	7mm Sheet Vinyl w/ Rubber Backing	54 IIC	56 IIC	58 IIC	2mm Vinyl Sheet over Encore QT4005	57 IIC
	13mm Engineered Wood	54 IIC	54 IIC	57 IIC		
I-Joist	2mm Vinyl Plank	50 IIC	52 IIC	54 IIC	2mm Vinyl Sheet	52 IIC
	3mm Vinyl Tile	52 IIC	52 IIC	58 IIC		
	2mm Vinyl Sheet	53 IIC	52 IIC	54 IIC		
	7mm Sheet Vinyl w/ Rubber Backing	54 IIC	57 IIC	58 IIC		
	13mm Engineered Wood	54 IIC	57 IIC	60 IIC		

Robinson Wheel Test Results

EXTRA HEAVY DUTY

- Minimum 3/4" (19 mm) of 2000 psi (13.8 MPa) FIRM-FILL® Brand Gypsum Underlayment over 1/8" (3 mm) FIRM-FILL® SCM-125
- Minimum 1" (25 mm) of 2000 psi (13.8 MPa) FIRM-FILL® Brand Gypsum Underlayment over 1/4" (6 mm) FIRM-FILL® SCM-250
- Minimum 1-1/4" (32 mm) of 2000 psi (13.8 MPa) FIRM-FILL® Brand Gypsum Underlayment over 3/8" (10 mm) FIRM-FILL® SCM-400

LIGHT COMMERCIAL

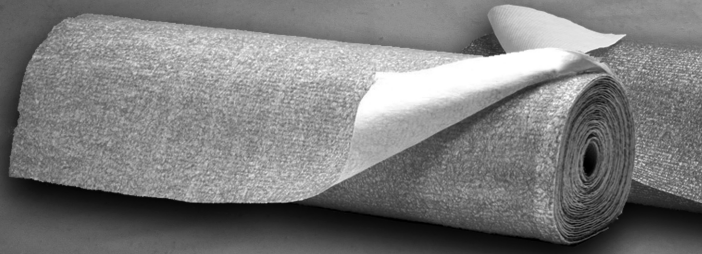
- Minimum 1" (25 mm) of 2500 psi (17.2 MPa) GYP-SPAN® Brand Gypsum Underlayment over 1/4" (6 mm) Hacker Sound Mat II

*Tested in accordance with ASTM C627-10; Standard Test Method for Evaluating Ceramic Tile Installation Systems Using Robinson-Type Floor Tester.

UL Fire Rated Design Listings

OPEN WEB	L521	L528	L529	L534	L542	L546	L550	L558	L562	L563	L574
	L576	L577	L579	L583	L585	L587	L592	M500	M503	M508	
NOMINAL WOOD	L003	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	L519	L520	L522	L523	L525	L526
	L533	L535	L536	L537	L539	L540	L541	L545	L556	L557	L569
	L581	L583	L588	L590	L593	L598	M501	M504	M509	M514	M517
	M519	M525	M526	M530	M531	M538	M540	M545	M550	M553	
I-JOIST	L518	L530	L538	L547	L556	L570	L571	L581	L583	L589	M502
	M506	M512	M544	M546							
CONCRETE	J917	J919	J920	J924	J927	J931	J957	J958	J991	J994	
STEEL	G230	G516	G524	G553	G561	G565	G566	G568	G575	G587	G594
	G595	H502	H516	I533	L524	L527	L543	L549	L551	L560	L564
	L565	L573	M505	M511	M513	M515	M518	M520	M521	M536	

For additional assistance with choosing the right underlayment, call Hacker Industries, Inc. at (800) 642-3455 or visit HackerIndustries.com



Product Update

See HackerIndustries.com for the most up to date product information.

WARRANTY

HACKER INDUSTRIES WARRANTS TO ITS LICENSED APPLICATORS WHO EXCLUSIVELY INSTALL ONLY FIRM-FILL® BRAND PRODUCTS AND TO THE OWNER(S) OF THE WORK OF IMPROVEMENT AT THE TIME THE SOUND CONTROL MAT IS INSTALLED THAT THE SOUND CONTROL MATS COVERED BY THIS WARRANTY WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP. IF COVERED SOUND CONTROL MATS FAIL TO PERFORM WITHIN THIS WARRANTY DURING THE TWO-YEAR WARRANTY PERIOD, AND IF THAT FAILURE IS REPORTED PROMPTLY, (BUT IN NO EVENT MORE THAN THIRTY (30) DAYS AFTER DISCOVERY), HACKER INDUSTRIES, INC. WILL, AT ITS SOLE OPTION, REPLACE OR REFUND THE PURCHASE PRICE OF THE DEFECTIVE MATS. HACKER INDUSTRIES, INC. WILL NOT, HOWEVER, PAY COSTS OF LABOR, FREIGHT, FLOOR COVERING MATERIALS, CONSEQUENTIAL OR INCIDENTAL DAMAGES, OR ANY OTHER COSTS OR DAMAGES ASSOCIATED WITH THE REPAIR OR REPLACEMENT.

The preceding paragraph limits the scope of the warranty provided hereunder and the remedies for its breach. This limited warranty replaces and supersedes any and all other express or implied warranties. Except as expressly warranted herein, these FIRM-FILL® SCM Underlayments are sold "as is," without warranty.

FIRM-FILL® SCM Underlayments are one component in an overall floor/ceiling assembly designed to achieve certain sound results. The sound control mat itself has no acoustical value. Its performance is affected by every other component and the likelihood of achieving code compliance is contingent upon many other trades including framers, plumbers, drywall contractors to name a few. Accordingly, Hacker Industries, Inc. makes no warranty or representation concerning IIC or STC ratings or the overall effectiveness of the finished floor/ceiling assembly.

Developers and general contractors are responsible for building properly and testing field performance immediately in order to assure the reliability of the project.

Laboratory tests are not a guarantee of field performance because of the issues noted above and many other design errors that may occur. Please consult a professional acoustical consultant to assure plans are proper and that the floor/ceiling assembly can perform to expectations.

SAFETY FIRST

Follow good safety/industrial practices during installation. Wear appropriate personal protective equipment. Read SDS and literature prior to specification and/or installation.

TRADEMARKS

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