

FIRM-FILL®

GYPSUM CONCRETE

 **Hacker Industries, Inc.**
SUBMITTAL FORM

Technical Data	Properties	ASTM
Weight	7 lb/ft ² (34.2 kg/m ²) at 3/4" (19 mm)	
Thickness	3/4" (19 mm) (minimum over wood) to 3-1/2" (89 mm)	
Compressive Strength	1200 to 2000 psi (8.3 to 13.8 MPa)	C472 M
Thermal Performance	K-value of 2.45 BTU; R-value of 0.36 BTU/(h °F ft ²)	C177
Fire Hazard Classification	Flamespread index 0; Fuel contribution 0; Smoke density 0	E84
Sand	1/8" (3 mm) or less washed plaster or masonry sand	E11
Flexural Strength	900 psi	C348

- Benefits**
- Ideal for wood-frame, multi-family construction
 - Essential for excellent STC and IIC ratings
 - Install over a FIRM-FILL® SCM or Hacker Sound Mat for additional sound isolation
 - Integral part of 100 UL design listings
 - Lightweight and crack-resistant
 - Fast installation and rapid set time; can be walked on in 90 minutes
 - Contributes points to LEED® project certification
 - Creates a flat, durable surface for finished floor coverings
 - Installed only by trained, Licensed Applicators across North America

Product Description FIRM-FILL® Gypsum Concrete, the original blue bag underlayment from Hacker Industries, Inc., is formulated for use over wood or concrete subfloors in multi-family construction. FIRM-FILL® Gypsum Concrete provides compressive strengths from 1200-2000 psi (8.3 - 13.8 MPa). Depending on compressive strength, it can be installed before or after drywall. To keep project on schedule and on budget, Hacker Industries, Inc.'s Licensed Applicators can install over 40,000 ft² of FIRM-FILL® Gypsum Concrete in one day.

FIRM-FILL® Gypsum Concrete is mixed on the job site with local sand (per ASTM E11) and water to create a lightweight slurry. Installed at a minimum of 3/4" thick, the underlayment weighs approximately 7 lb/ft² (34.2 kg/m²) with a dry density range of 105-115 pcf.

For new construction or renovation, FIRM-FILL® Gypsum Concrete is a cost-efficient way to create a smooth, hard surface for finished floor coverings, while offering exceptional compressive strengths matched with superior acoustical control and fire resistance properties. To achieve additional sound isolation, use in conjunction with a FIRM-FILL® SCM or Hacker Sound Mat.

- Limitations**
- Shall not be used in exterior locations, below grade, or where continuous exposure to moisture is likely.
 - Shall not be used as a wear surface; must be covered by a finished floor covering.
 - Structure shall be designed so that deflection does not exceed L/360 live or dead load. Certain floor coverings, such as marble, limestone, travertine and wood, may have more restrictive deflection limits. Consult the appropriate floor covering manufacturer for recommendations.
 - If installed above a crawl space, subfloor must be protected by a vapor barrier.
 - No single application of FIRM-FILL® Gypsum Concrete shall exceed 3-1/2" in depth.
 - FIRM-FILL® Gypsum Concrete is but one component of an effective sound and fire control system. Care must be taken in the installation of all components to assure the ultimate design performance. Published acoustical and fire system tests were conducted under controlled laboratory or field conditions and reflect results applicable only to those specific assemblies.

Installation Before, during, and after the installation of FIRM-FILL® Gypsum Concrete, the building must be enclosed and the temperature maintained at a minimum of 50°F (10°C). Prior to the installation of FIRM-FILL® Gypsum Concrete, the subfloor shall be structurally sound (L/360), broom cleaned, dry and free from oil, grease, paraffin, laitance, wax or other contaminants. Concrete subfloors shall be 28 days or older. For on-grade applications over concrete, measure the Moisture Vapor Emission Rate (MVER) per ASTM F1869. MVER shall not exceed 3 lb/1000 ft² per 24 hours.

**Installation
cont.**

Prime wood subfloors per recommended specifications before installing underlayment.

Adequate ventilation shall be provided by the General Contractor (GC) to ensure proper drying of FIRM-FILL® Gypsum Concrete. If necessary, the GC shall provide mechanical ventilation. Depending on thickness and drying conditions, the underlayment should dry within 10 to 14 days. To avoid potential problems during the drying process, the GC shall consult Hacker Industries, Inc.'s Drying Conditions Flyer and information contained on Hacker Industries, Inc.'s website for additional information concerning drying of this product. After installation, temporary wood planking shall be placed by the GC wherever the floor underlayment will be subject to wheeled or concentrated loads.

Finished floor coverings can be installed when the FIRM-FILL® Gypsum Concrete is completely dry. Consult flooring contractor for recommended procedures to test for dryness and acceptable levels of moisture. Reference Hacker Industries, Inc.'s Guidelines for Installing Finished Floor Coverings. This guideline is not a warranty and shall be used as a guideline only. See ASTM F2419.

Product Data

Approximate Compressive Strength per ASTM C472 Modified: 1200 to 2000 psi* (8.3 to 13.8 MPa)
Approximate Dry Density (aggregated): 107 to 115 pcf

*Note: Compressive strengths published herein were achieved under controlled laboratory conditions. Actual field results may differ due to environmental conditions, regional sand variations, or inconsistent proportioning of field-applied water, sand and Hacker Floor Underlayment, as well as differences in mixing/pumping equipment.

Compliance

- ICC-ES ER-4147
- City of Los Angeles Research Report No. 24540
- FHA-HUD MR 1255
- Tile Council of North America (F180, F200, RH111, RH122)

UL Designs

J917	J919	J920	J924	J927	J931	J957	J991	J994	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	L521	L522	L523	L524	L525	L526	L527	L528	L529	L530
L532	L533	L534	L535	L536	L537	L538	L539	L540	L541	L542	L543
L545	L546	L547	L549	L550	L551	L552	L556	L557	L558	L563	L564
L569	L570	L571	L574	L576	L577	L579	L581	L583	L585	L588	L589
L590	L592	L593	L598	M500	M502	M503	M504	M505	M506	M508	M511
M513	M515	M517	M519								

**Related
Products**

Hacker Floor Primer, Hacker TopCoat™ SP and Hacker Floor Sealer are available for use with FIRM-FILL® Gypsum Concrete Floor Underlayment. Contact Hacker Industries, Inc. at (800) 642-3455 for more information.

Warranty

Subject to express warranty stated on Hacker Industries, Inc.'s website.

**Submittal
Approvals**

Project Name: _____

Contractor/Architect: _____

Date: _____

PRODUCT INFORMATION

See www.HackerIndustries.com for current recommended product specifications and literature.

WARNING

When mixed with water, this product hardens and becomes extremely hot. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions may cause severe burns that may require surgical removal of affected tissue or amputation of limb. Portland cement is strongly alkaline. Direct contact can be corrosive and cause severe damage or chemical

burns to eyes and wet, moist skin. Avoid contact with eyes and skin. Wear protective glasses and clothing. If eye contact occurs, immediately flush thoroughly with water for 30 minutes and seek medical advice. Inhalation of dust may be corrosive or cause chemical burns or irritation to nose, throat and respiratory tract.

Avoid breathing dust. Use a NIOSH/MSHA-approved dust respirator. Wash thoroughly with soap and water after use. Do not ingest. If ingested, call a physician. Product safety, call (800) 642-3455. **KEEP OUT OF REACH OF CHILDREN.**

TRADEMARKS

FIRM-FILL®, GYP-SPAN®, Let Our Products Floor You™ and the associated logos are trademarks of Hacker Industries, Inc. LEED® is a registered trademark of the U.S. Green Building Council.

NOTICE

We shall not be liable for incidental or consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instruction or for other than the intended use. Our liability is expressly limited to replacement of defective

goods. Any claim shall be deemed waived unless made in writing to us within 30 days from date it was, or reasonably should have been, discovered.

SAFETY FIRST

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read specs, MSDS and literature prior to specification and installation.

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