

FIRM-FILL® 4010

FLOOR UNDERLAYMENT

 **Hacker Industries, Inc.**
SUBMITTAL FORM

Technical Data	Properties	ASTM
Weight	7.8 lb/ft ² (38 kg/m ²) at 3/4" (19 mm)	
Thickness	Featheredge at transitions to 2" (51 mm)	
Compressive Strength	4000 to 5200 psi (27.5 to 35.9 MPa)	C472 M
Thermal Performance	K-value of 2.8 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	1300 psi	C348

- Benefits**
- Ultra-high-strength underlayment for use over concrete slabs or precast concrete
 - Listed in over 100 UL floor/ceiling assemblies
 - Lightweight and crack-resistant
 - Ideal for commercial, institutional and renovation projects
 - UL designs for 1-4 hour fire ratings
 - No shot blasting or surface preparation required
 - Helps contribute points to LEED® project certification
 - Creates a flat, durable underlayment surface for finished floor coverings
 - Installed only by trained, Licensed Applicators across North America

Product Description FIRM-FILL® 4010 is a gypsum floor underlayment from Hacker Industries, Inc. that is designed for thin-capping concrete in new construction or renovation projects with no shot blasting required. FIRM-FILL® 4010 sets in 90 minutes and is suitable for light foot traffic the following day. Installed from featheredge to 2" (51 mm) in one lift, FIRM-FILL® 4010 is widely used over existing concrete, precast, and damaged or cracked lightweight concrete to create a strong, flat surface for finished floor coverings. FIRM-FILL® 4010 provides compressive strengths from 4000 to 5200 psi (27.5 to 35.9 MPa).

FIRM-FILL® 4010 is mixed on the job site with local washed plaster, masonry or silica sand (per ASTM E11) and water to create a lightweight slurry. At 1/2" thick, the underlayment weighs approximately 5.2 lb/ft² (25 kg/m²) with a dry density range of 125-130 pcf.

For new construction or renovation, FIRM-FILL® 4010 is a cost-efficient way to maximize sound control and provide fire ratings, and is suitable for a variety of finished floor coverings.

- Limitations**
- Do not use FIRM-FILL® 4010 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® 4010 shall exceed 2" (51 mm) in depth.
 - FIRM-FILL® 4010 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® 4010, the building must be enclosed and the temperature maintained at a minimum of 50°F (10°C). Prior to the installation of FIRM-FILL® 4010, 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. If required, prime concrete subfloors per recommended specifications before installing underlayment. Multiple coats may be required.

Adequate ventilation shall be provided by the General Contractor (GC) to ensure proper drying of FIRM-FILL® 4010. If necessary, the GC shall provide mechanical ventilation. Depending on thickness and drying conditions, the underlayment should dry within 7 to 12 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® 4010 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. See ASTM F2419.

Product Data **Approximate Compressive Strength per ASTM C472 Modified:** 4000 to 5200 psi* (27.5 to 35.9 MPa)
Approximate Dry Density (aggregated): 125 to 130 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® 4010. 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.

© 03-2015 Hacker Industries, Inc., Newport Beach, CA.