



# Gypsum Concrete Underlayment versus Lightweight Cellular Concrete

## APPLICABLE PRODUCTS

### FIRM-FILL® Gypsum Concrete

1,200 to 2,250 psi  
(8.3 to 15.2 MPa)

"Super Blue" is a cost-effective solution to satisfy acoustical ratings and fire codes in multifamily construction.

### FIRM-FILL® 2010+

2,000 to 3,200 psi  
(13.8 to 22 MPa)

Delivers optimal compressive strengths while providing improved STC and IIC ratings in multifamily and single family construction.

### FIRM-FILL® 3310+

3,000 to 3,700 psi  
(20.7 to 26.9 MPa)

Best-in-class performance over wood or concrete subfloors to maximize sound control and fire ratings.

### FIRM-FILL® High Strength

2,500 to 3,500 psi  
(17.2 to 26 MPa)

Can correct concrete problems in light commercial, renovation and repair projects.

### FIRM-FILL® 4010

Up to 5500 psi  
(Up to 37.9 MPa)

An exceptionally durable cementitious underlayment for thin capping of concrete on projects requiring the highest compressive strength.

### Gyp-Span® Radiant

2,000 to 3,200 psi  
(13.8 to 22 MPa)

Designed specifically for use in hydronic or electrical radiant heat systems that create a thermal mass for even distribution of heat.



**Cellular Concrete**



**Gypsum Concrete**

Since the late 1950s, one and a half (1½) inches of cellular lightweight concrete was the accepted solution as an alternate to the code requirement of a second layer of plywood in multi-family housing. However, floor underlayment technology has advanced considerably in recent decades. In 1983, Hacker Industries, Inc. introduced a gypsum concrete floor underlayment with strengths equal, or superior to, lightweight cellular concrete. The product, FIRM-FILL Gypsum Concrete, was also crack resistant, poured at ¾", and was code compliant. Since that time, Hacker has worked continuously to improve the quality of gypsum floor underlayments available to the building community.

Today, our line of Firm-Fill® Brand Underlayments have high compressive strengths, flow with a minimal amount of water, and provide a flat, smooth surface for floor coverings. Firm-Fill® Brand Underlayments offer the following advantages over traditional lightweight cellular concrete:

- When comparing ASTM Standard (F2471) for lightweight concrete with the ASTM Standard (F2419) for gypsum concrete underlayments, you will notice several key differences. The two most important differences are that traditional lightweight concrete, unlike gypsum concrete Underlayment, requires caulking at the perimeter to limit sound transmissions and reinforcing for stability in doorways. As a result, properly installed gypsum underlayments are less expensive, faster to install and provide the surface required by floor covering installers.
- Additionally, most brands of lightweight, cellular concrete do not have recognition from code officials that show them to be in compliance with the current Uniform Building Code. After conducting an extensive series of comprehensive tests, the entire Firm-Fill® Gypsum Concrete Underlayment product line received new evaluation reports, ICC-ES 3386 and IAPMO UES-474, certifying that these gypsum underlayments are in compliance with the current IBC codes. Firm-Fill® Brand Underlayments are also included in over 105 UL fire rated assemblies.
- Finally, Hacker Industries, Inc. has quality control systems in place which ensure that its Firm-Fill® Brand Underlayments are installed consistently with the expectations of the architect and owner of the multi-family project.



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For more information, please refer to the chart below:

	Hacker Industries, Inc.	Lightweight Concrete
<b>Product</b>	FIRM-FILL Gypsum Concrete 1,200 - 2,250 psi	Lightweight Concrete
<b>Product</b>	FIRM-FILL 2010+ 1,600 - 2,500 psi	None
<b>Product</b>	FIRM-FILL 3310+ 3,000 - 3,800 psi	None
<b>Product</b>	FIRM-FILL High Strength 2,500 - 3,500 psi	None
<b>Product</b>	FIRM-FILL 4010+ 3,500 - 5,500 psi Cementitious	None
<b>Product</b>	GYP-SPAN Radiant 1,800 - 2,500 psi	None
<b>Code Approvals</b>	Most	<ul style="list-style-type: none"> <li>• Very Limited</li> <li>• Requires caulking for sound</li> </ul>
<b>Cracking</b>	Limited	<ul style="list-style-type: none"> <li>• Shrinkage from plates</li> <li>• Expansion cracks decrease sound ratings</li> </ul>
<b>Availability Nationwide</b>	Excellent	<ul style="list-style-type: none"> <li>• Requires ready-mix truck</li> <li>• Can be limited by price, geography</li> </ul>
<b>Framing</b>	<ul style="list-style-type: none"> <li>• Single plate</li> <li>• Less dead load</li> </ul>	<ul style="list-style-type: none"> <li>• Double plate</li> <li>• More dead load</li> </ul>
<b>Insulation</b>	Good	<ul style="list-style-type: none"> <li>• Shrinkage cracks and shrinkage away from plates allow heat loss</li> </ul>

#### WARRANTY

HACKER INDUSTRIES, INC. 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.

#### PRODUCT INFORMATION

Visit [HackerIndustries.com](http://HackerIndustries.com) for the most up-to-date product information.

#### 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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