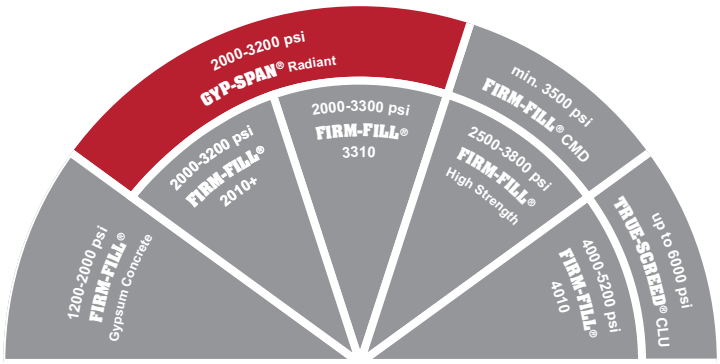
GYP-SPAN® Radiant
Recommended Product Specifications



PART I. GENERAL

1.1 Scope

Specify to meet project requirements. The conditions of the Contract (General, Supplementary, and other conditions) and the General Requirements (sections of Division 1) govern the provisions of this section.

1.2 Qualification

A. Supplier: HACKER, Newport Beach, California.

B. Installer: Installation of GYP-SPAN® Radiant shall be by a Licensed Applicator of HACKER, using mixing and pumping equipment with a water meter approved by HACKER.

C. All materials specified herein shall be approved by HACKER, Newport Beach, CA. All others must receive prior approval.

D. Compressive strength can be specified from 2,000 - 3,200 psi (13.8 - 22.1 MPa).

E. Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements after delivery. Do not allow bags to get wet. Product shall not be used beyond shelf life.

PART II. PRODUCTS

2.1 Materials

A. Gypsum Concrete: GYP-SPAN® Radiant, as supplied by HACKER.

B. Subfloor Primer: Hacker Floor Primer or approved equal.

C. Sand: Well graded (ASTM C33) washed plaster, or masonry sand or concrete sand meeting the requirements of Hacker Industries, Inc. Sand Guidelines..

D. Water: Potable and free from impurities.

E. Hacker TopCoat® SP, if specified.

2.2 Mix Designs: See Section 3.3

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PART III. PREPARATION

3.1 Condition of Subfloor

A. Subfloor must be structurally sound (L/360), broom clean, dry, and free from oil, grease, paraffin, laitance, wax or other contaminants before the arrival of the Hacker Licensed Applicator.

B. Leak Prevention: All cracks and voids should be filled with a quick-setting patching or taping compound or equal where leakage could occur.

C. Before installation, the General Contractor (GC) shall inspect and approve the condition of the subfloor and test the existing subfloor for moisture.

3.2 Priming

A. Prime wood subfloors with one coat of Hacker Floor Primer (diluted 1:4 with water using one gallon of Hacker Floor Primer (3.78L) per 300 - 400ft.^{2} (27.9 - 37.2m^2).

B. Hacker Floor Primer is not always required over concrete substrates. Multiple coats may be required over porous concrete or plank. The Hacker Licensed Applicator can give specific recommendations. (Note: for rehabilitation work or pours over old and/or porous concrete, consult a Licensed Applicator or HACKER for recommended preparation.)

3.3 Mixing Instructions

A. 4 - 6 gallons (15.1 - 22.7L) of water and sand per 80 pound (36.3 kg) bag of GYP-SPAN® Radiant. Do not over water. Water amount will change with wetness of sand.

B. GYP-SPAN® Radiant mix proportions and methods shall be in strict accordance with Hacker recommendations.

3.4 Underlayment Application

A. Scheduling:

1. Installation of GYP-SPAN® Radiant shall not begin until the building is enclosed, including roof, windows, doors and other openings.

2. GYP-SPAN® Radiant can be installed before or after the installation of drywall.

B. Application:

1. The minimum thickness of GYP-SPAN® Radiant varies with the type of radiant tubing. Install the first lift (pour) to the top of the tubing cable. After the first lift has set-up, install the second lift (pour) ¾-inch (19 mm) above the first lift. The minimum thickness of GYP-SPAN® Radiant is ¾-inch (19 mm) over the top of the tubes or cables.

2. Install GYP-SPAN® Radiant at specified thickness by placing bags, sand and water into the approved high-speed mixing device, and blend for a minimum of one minute. GYP-SPAN® Radiant should be

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pumped onto floor areas, spreading and screeding to a smooth surface. Place as continuously as possible until installation is complete so that no GYP-SPAN® Radiant slurry is placed against GYP-SPAN® Radiant that has obtained its initial set, except at authorized joints.

3. GYP-SPAN® Radiant is suitable for interior application only and must be covered by a finished floor material.

C. Protection: After installation, temporary wood planking shall be placed by the GC wherever the floor underlayment will be subject to wheeled or concentrated loads. The GC shall not place concentrated loads such as pallets of material, drywall, taping compound or any heavy items, which may cause deflection in the middle of the floor.

D. Drying: The GC shall provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the underlayment is dry. If necessary, the GC shall provide mechanical ventilation and heat. Do not install finished floor coverings until the GYP-SPAN® Radiant has been tested for dryness. Consult flooring contractor for recommended procedures to test for dryness and acceptable moisture levels. To avoid potential problems during the drying process, the GC shall consult HACKER's Drying Conditions Flyer and information contained on HACKER's website for additionally information concerning drying of this product.

3.5 Preparation for Installation of Floor Coverings

B. For ceramic tile installations, a crack isolation membrane shall be used as recommended by setting material manufacturer for intended use or application. Reference Tile Council of America Handbook.

C. Floor Covering Procedures: Please see HACKER's "Guidelines for Installing Finished Floor Coverings." The guideline is not a warranty and shall be used as a guideline only. Also see ASTM F2419 for recommended procedures.

3.6 Field Quality Control

A. Slump Test: GYP-SPAN® Radiant shall be tested for slump at the beginning of each installation in order to establish the required slump. Slump tests shall then be taken periodically during installation to verify that the required slump is maintained. Slump tests shall be conducted using a 2-inch by 4-inch (51 mm by 102 mm) cylinder. The acceptable patty size shall be 8 ½-inch (216 mm) plus or minus ½-inch (13 mm) in diameter.

B. Field Samples: Testing shall be done in accordance with ASTM C472 modified testing procedures using split brass molds. Prior to independent testing, consult HACKER for proper ASTM procedures.

Warranty: Hacker Industries, Inc. warrants Hacker Gypsum Floor Underlayments (GFU) to be free from manufacturing defects, and when properly prepared and installed according to approved specified methods, GFU will attain minimum physical specifications as stated by Hacker Industries, Inc.'s most recent literature. Hacker Industries, Inc.'s obligation shall be limited to the replacement of the bagged product only and is subject to notice and inspection requirements. This warranty is in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose and all other obligations or liabilities.