

# ASTM Publishes the First Standard for the Installation of Resilient Floor Coverings Over Gypsum Concrete Floor Underlayments

by Kerry V. Hacker

The American Society of Testing Methods (ASTM) International Committee F06 on Resilient Floor Coverings has approved a new standard, ASTM F2419; *Standard Practice for Installation of Thick Poured Gypsum Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring*. This standard was adopted to ensure that thick poured gypsum concrete underlayments are an acceptable surface to receive resilient floor coverings. The standard also promotes a better understanding of gypsum concrete underlayments, which are widely used

in structures throughout North America for fire resistance, sound control and to provide a smooth, flat surface for finished floor coverings.

Prior to its adoption, no standard for the installation of gypsum concrete underlayments existed even though millions of square feet are installed annually. ASTM Committee F06 accepted the challenge of developing an industry standard.

Since its creation in 1898, ASTM has published thousands of voluntary, consensus standards to achieve its mission statement, which reads in part to “contribute to the reliability of materials, products, systems and services.” By establishing best-practice recommendations, these standards provide the building industry with guidelines that result in a more uniform level of product quality, reliability and predictability. Construction material standards are created to assure the building community that they can rely on specified products and installations – providing the products and installation methods used conform to the established standards.

The Task Group responsible for creating the much-needed standardization was F06.40.04 Thick Poured Gypsum Concrete Underlayments, under the jurisdiction of F06.40 Practices, which is part of F06, Resilient Floor Coverings. ASTM Technical Committees are comprised of highly qualified, industry specific profes-



Photo courtesy of Hacker Industries, Inc.

*ASTM F2419 recommends minimum thickness of gypsum concrete underlayments, such as Hacker Floor Underlayments, at 3/4" over wood and 1/2" over concrete surfaces.*

sionals from around the globe. When a standard is written and finally approved, it is the result of many months or years of submissions, data analysis, committee debate and ballots by experts in the field.

This was precisely the course taken in the creation of ASTM F2419. The Standard was adopted by a committee of resilient flooring manufacturers, adhesive manufacturers, gypsum concrete underlayment manufacturers, moisture meter manufacturers, consultants to the floor

Photo courtesy of Hacker Industries, Inc.



*Gypsum concrete floor underlayments are installed over wood or concrete surfaces to achieve a sound-rated, fire resistant surface for floor coverings.*

## About the Author

Kerry V. Hacker, co-founder and Vice President of Hacker Industries, Inc., established in 1983, is actively involved with ASTM. She is serving as Task Group chair of F06.40.04 for Gypsum Concrete Underlayments, a member of TCA's Underlayment Committee, and with AWCI, as a member of its Suppliers Committee and serves on its Board of Directors.

covering industry, testing labs and other industry professionals. ASTM F2419 is a milestone in the path embarked upon by Committee F06 to ensure consistent resilient floor covering applications, specifically addressing the concerns of the resilient floor covering industry and manufacturers to establish approved guidelines for gypsum concrete underlayments.

ASTM F2419 specifies the factors required for the proper installation of gypsum concrete underlayments as a base for resilient floor coverings. The Standard is

broken down into numerous sub-categories including: storing and handling, preparing the subfloor, installing the underlayment, field quality control, protection and preparing the underlayment surface. Some of the major highlights of the standard are:

- Minimum compressive strength of 2000psi (13.8 MPa) for use over wood subfloors per ASTM C472
- Minimum compressive strength of 3000psi (20.7 MPa) for use over concrete subfloors per ASTM C472
- 3/4" (19mm) minimum thickness over wood subfloors
- 1/2" (13mm) minimum thickness over cast in place concrete
- 1" (25mm) minimum thickness over sound mat
- Maximum subfloor deflection of L/360
- Continuous ventilation required until the underlayment is dry
- Moisture testing prior to installation of resilient floor coverings
- Priming in accordance with the recom-

mendations of the resilient floor covering manufacturer

Additional guidelines within the Standard define proper subfloor preparation, requirements for a minimum ambient temperature of 50°F (10°C) which must be maintained before, during and after installation and the provision of adequate ventilation necessary to assure proper drying of the gypsum concrete underlayment. Installations should be completed only by an applicator recommended by the gypsum concrete manufacturer. Since satisfactory performance of the finished flooring depends, in part, on the condition of the thick poured gypsum concrete underlayment, it should be protected from heavy traffic via wheeled or concentrated loads by using temporary walking boards until the underlayment is dry.

Prior to the installation of resilient floor coverings, the moisture content of the underlayment must be tested according to ASTM D4263, or with an approved moisture meter containing a

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Monitoring the water content of gypsum concrete floor underlayments.

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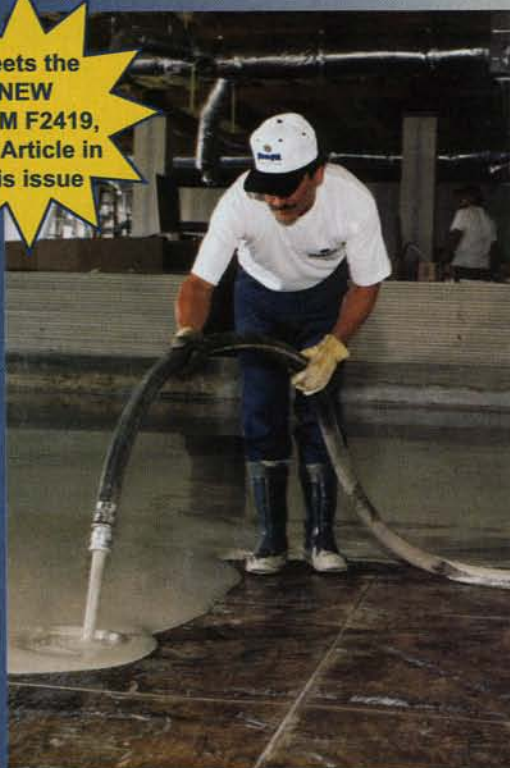
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NEW  
ASTM F2419,  
see Article in  
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Photo courtesy of Hacker Industries, Inc.

*Procedures for testing psi per ASTM C472. Minimum compressive strength requirement over wood subfloor is 2,000 psi; 3,000 psi is required over a concrete subfloor.*

gypsum scale that is recommended by the gypsum concrete underlayment manufacturer. Two such moisture meters are the Delmhorst G-79, which is strictly a gyp-

sum concrete moisture detector, and the Delmhorst BD-2100, which offers three scales for wood, concrete and gypsum. Upon the completion of moisture testing, the resilient flooring manufacturer approves the suitability of the substrate for installation of the resilient floor covering, so long as moisture levels are in accordance with their product specifications. ASTM F2419 also requires that a topcoat/sealer be applied to the thick poured gypsum concrete floor underlayment in accordance with the recommendations of the gypsum concrete manufacturer, prior to the application of finished floor goods.

The practice does not address the structural adequacy of the wood panel or concrete subfloor, nor does it supersede in any manner the thick poured gypsum concrete underlayment manufacturer's, adhesive manufacturer's or resilient flooring manufacturer's written instructions. Consultation with each individual manufacturer for specific recommendations is advised.

Suppliers of gypsum concrete under-

layments, such as Hacker Industries, Inc., support the new standard and believe by providing definitive guidelines for product quality that the understanding between trades will improve. To give an example of this support for the standard, Hacker Industries, Inc.'s TopCoat™ SP contains a built-in color identifier to assure compliance with ASTM Standard F2419's recommendation of a topcoat/sealer. TopCoat™ SP is applied over any floor underlayment to enhance and strengthen the bond between the gypsum floor underlayment and floor covering adhesives.

The work of the Task Group continues today with the development of a standard for the Installation of Self-Leveling Underlayments. All interested parties should attend the next meeting in November of 2006 in Cancun, Mexico.

For referenced ASTM Standards, please visit [www.astm.org](http://www.astm.org) or call (610) 832-9585. The technical contact is Kerry Hacker at Hacker Industries, Inc. Please call (800) 642-3455 or contact via e-mail at [kvh@hackerindustries.com](mailto:kvh@hackerindustries.com). **FCI**

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## Correction



The cover image of the September issue of *FCI* was incorrectly credited; the photo was courtesy of Sinclair Equipment Company. For more information, please visit their Web site: [www.sineqco.com](http://www.sineqco.com). *Floor Covering Installer* regrets this error.