



Guidelines for Installing Finished Floor Coverings

Hacker Floor Underlayments are non-structural, lightweight gypsum concrete toppings that supply fire resistance and sound control while providing a durable, flat surface for finished floor coverings. This guideline is not a warranty and should be used as a guideline only. The following procedures are critical to a successful finished floor installation.

Installation of Hacker Floor Underlayments

Before, during, and after installation of a Hacker Floor Underlayment, building interior shall be enclosed and maintained at a temperature above 50°F (10°C) until structure and subfloor temperatures are stabilized. Provide continuous ventilation and adequate heat to remove moisture rapidly from the area until the underlayment is dry. Provide mechanical ventilation if necessary. Under the above conditions, a 3/4" (19mm) thick underlayment is usually dry in 6-8 days. Low temperatures, certain sands and high humidity will lengthen the drying time.

Recommended Guidelines

Check for Dryness

Before starting any installation, make sure the underlayment is dry. Use the recommended procedures of taping a 24" x 24" (609mm x 609mm) section of plastic to the surface of the underlayment. Or lay a flat, 24" x 24" (609mm x 609mm), high-density, smooth rubber mat weighted down on the underlayment surface. If no condensation or darkening of the underlayment occurs in 16 hours, the underlayment is considered dry and ready for the following steps. (Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method, ASTM Designation D 4263-83) Perform any additional tests, if required. If any gouges or nicks occur from construction traffic, contact your Licensed Applicator for necessary repair.

Another recommended procedure to test for dryness is to use a moisture meter with a gypsum scale. The results should be reported to the general contractor for use by the flooring installer. The floor goods manufacturer and/or the adhesive manufacturer will determine acceptable levels of dryness (see ASTM F-2419 Standard Practice for Installation of Thick Poured Gypsum Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring).

Caution: Calcium chloride/moisture dome testing may not be reliable due to atmospheric conditions.

Seal / Prime The Underlayment

Porosity of the floor is a prime factor in the drying rate of adhesives. This porosity factor may reduce the effective open time of the adhesive. An application of sealant/primer prior to the installation of glue-down floor material will minimize the porosity of the underlayment. Before applying the sealant/primer, the flooring installer should test the underlayment for dryness; it must be FULLY dry. When preparing the gypsum floor underlayment to receive resilient floor coverings, install Hacker TopCoat™ per ASTM F2419; Standard Practice for the Installation of Thick Poured Gypsum Concrete Underlayments and the Preparation of the Surface to Receive Resilient Floor Coverings.



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Make certain that the surface to receive the sealant/primer is free of mud, oil, grease, and other contaminants. Dilute the sealant/primer according to manufacturer's instructions. For maximum results, the sealant/primer should be applied about 1-2 hours prior to adhesive application. Make sure the surface is completely dry so latex adhesives can achieve maximum bond. Perform a sample installation to test bond capability. Finished floor goods manufacturers may require a special adhesive or installation system; their requirements supersede these recommendations. Contact the floor goods manufacturer and the adhesive manufacturer to determine the compatibility of products.

Resilient Flooring: Sheet Vinyl and Vinyl Composition Tiles

Follow the Recommended Guidelines on Page 1 to prepare the underlayment. If required by the floor good manufacturer of resilient floor covering, install Hacker TopCoat™ prior to installation (Also see ASTM F2419 for recommended guidelines).

Prior to installation of the sheet vinyl or vinyl composition tiles, conduct a sample test to confirm bond capability.

Note: Pay particular attention to seaming when installing over underlayments, as you do not want water and dirt to accumulate in the seam areas.

Ceramic, Quarry and Marble Tile

Follow the Recommended Guidelines on Page 1 to prepare the underlayment.

Hacker Industries, Inc. strongly recommends installing an anti-fracture membrane between the underlayment and tile. The anti-fracture membrane helps eliminate tile cracking caused by structural movement and may act as a waterproofing membrane. Install the membrane according to membrane manufacturers' recommendations.

Movement Joints: Follow and adhere to expansion joint requirements found in the Handbook for Ceramic Tile Installation under EJ171 specification. Contact the Tile Council of America (TCA) at 864-646-8453 or www.tileusa.com for a copy of the handbook. See page 6 for a list of recommended anti-fracture and waterproofing membrane manufacturers.

The Hacker Floor Underlayment must be dry before the installation of these membranes, unless otherwise stated by the membrane manufacturer. Follow the respective membrane manufacturers' recommendations for installation of the membrane and of the latex modified thin set, if required.

Note: See TCA Methods: F180 Wood Subfloor; F200 Concrete Subfloor; RH111 Radiant Heat on Concrete; RH122 Radiant Heat on Wood Subfloor



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Laminated Hardwood and Parquet Wood Flooring

Follow the Recommended Guidelines on Page 1 to prepare the underlayment.

Glue Down Installations: Hacker Industries, Inc. recommends the following adhesives: Bostik's Ultra-Set™ Hardwood Premium Wood Flooring Urethane Adhesive, Bostik's Best Adhesive Wood Flooring Urethane Adhesive, or Bostik's Fast-Tack Wood Flooring Urethane Adhesive (all from Bostik Findley, Inc.). Other adhesives may also be compatible. Before applying any adhesive, make sure the underlayment is clean and has passed a dryness test, detailed in the Surface Requirements on Page 1. Apply primers and adhesives according to the flooring manufacturers instructions. Prior to installation, the flooring installer should conduct a sample test to confirm bond compatibility. Allow the test area to set for 72-hours before installing the flooring.

Mechanical Attachment: Follow and adhere to the floor goods manufacturer's general and installation recommendations.

Floating Floors

Follow the Recommended Guidelines on Page 1 to prepare the underlayment and adhere to the floor goods manufacturer's general and installation recommendations.

Solid Wood Flooring

Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Keep in mind that wood is hygroscopic and the flooring installer must provide 3/4" perimeter gaps to allow for expansion.

Mechanical Attachment: The flooring installer should attach the solid wood flooring according to instructions published by the National Oak Flooring Manufacturers Association, Inc. (NOFMA). Call NOFMA at 901-526-5016, or view their website at www.nofma.org.

Carpet and Pad

Hacker Floor Underlayments can be used with many different carpets, carpet pads, and adhesives.

Mechanical Attachment of Tackless Strips over Wood Subfloors: Nails must penetrate 1/4" into the substrate through the underlayment. If the underlayment is 3/4" (19mm) thick use "Acoustical Concrete" tackless strips like #20-451 manufactured by Roberts Consolidated Industries. For thicker underlayment, use filler nails every 12" to 18" (305mm to 457mm) O.C. The filler nail should be long enough to penetrate at least 1/4" into the subfloor.

Use an air compressor-driven automatic nailer to install diamond point nails through the tackless strip and underlayment. One type of nailer is the Duo-Fast Coil Gun (Model #1N-123; #1N-124; #1N-125) and the 1-1/4" (32mm) Duo-Fast #054 nails.



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Note: When Hacker Floor Underlayments have been poured over expanded or extruded polystyrene or over an acoustical matting product, mechanical attachment of tackless strips is not recommended. It is recommended that an adhesive system be used in these cases.

Glue-Down Attachment of Tackless Strips: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Follow and adhere to the floor goods manufacturers' adhesive recommendations. Prior to installation, the flooring installer should conduct a sample test to confirm bond capability.

The following adhesives have been compatible with Hacker Floor Underlayments:

- ~ Roberts 0167 Carpet Gripper Cement
- ~ Hydroment 900, manufactured by Bostik
- ~ Polyseamseal® All-Purpose Adhesive Caulk, manufactured by Darworth Co.

Glue-Down Attachment of Carpet and Pad: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Follow manufacturers recommendations for adhesives. Prior to installation, the flooring installer should conduct a sample test to confirm bond compatibility.

Double Glue-Down of Carpet and Pad: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Follow manufacturers recommendations for adhesives.

Free-Lying Carpet Modules: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Hacker Industries, Inc. strongly recommends that all Hacker Floor Underlayments be sealed prior to installation. Install the carpet modules with 100% adhesive coverage.

Wood or Metal Base Plates

Mechanical Attachment: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. The flooring installer should shoot power actuated nails through the base plate and into the wood or concrete subfloor. The nail should be long enough to penetrate at least 1/2" (13mm) into the subfloor. If the underlayment is too thick for the nails to penetrate the subfloor, use one of the following adhesives in addition to the nailing:

- ~ Hydroment 900, manufactured by Bostik
- ~ Polyseamseal® All-Purpose Adhesive Caulk, manufactured by Darworth Co.
- ~ PL 400, manufactured by Contech
- ~ Any construction grade adhesive suitable for use with a cementitious underlayment.



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Radiant Heat Systems

The temperature of the radiant heat system must be lowered before applying any floor covering, adhesive and/or floor covering. Consult the Radiant Panel Association Guidelines.

Carpet and Pad: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. Select a tackless installation and install system. Achieve appropriate heat transfer by using a low R-value carpet cushion. Consult the Radiant Panel Association Guidelines.

Laminated Hardwood and Parquet Wood Flooring: These flooring systems are ideal for radiant systems. The systems are very stable and resist expansion and contraction while improving the overall performance of radiant systems. Follow the Surface Requirement steps on Page 1 to prepare the underlayment. Follow and adhere to floor goods manufacturers' adhesive recommendations. Consult the Radiant Panel Association Guidelines.

Floating Floors: Follow the Recommended Guidelines on Page 1 to prepare the underlayment. The flooring installer should install boards glued edge to edge and float on a 1/8" (3mm) foam pad. Consult the Radiant Panel Association Guidelines.

Solid Wood Flooring: Nail-down sleeper system. Install tubing between 2" x 4" sleepers, which are attached to the subfloor. Pour Hacker's GYP-SPAN Radiant between the spaces around the tubes to provide a thermal mass. GYP-SPAN Radiant must be 3/4" minimum above the outside diameter of the tubes. Follow the Surface Requirement steps on Page 1 to prepare the underlayment. When dry, install a vapor barrier and nail boards to the sleepers. Be careful not to puncture the radiant heating tubes when nailing down a solid wood floor. This system offers limited insulation above the radiant system. For best results, refer to the radiant heat system manufacturers' recommendations. Consult the Radiant Panel Association Guidelines.

Note: The floor surface temperature should never exceed 85°F (29°C) when laminated, parquet or solid wood floors are installed over radiant heat systems.

Sheet Vinyl and Sheet Vinyl Composition Tiles: According to vinyl industry recommendations, the floor surface temperature should never exceed 85°F (29°C). During adhesive and tile installation, lower the floor temperature. Consult Radiant Panel Association Guidelines.



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Anti-Fracture and Waterproof Membrane Manufacturers

Badger Cork (Stress Cork)	(800) 255-2675
Bostik Inc. (Hydroment Ultra-Set) (Natural Cork)	(800) 726-7845
Carlisle Waterproofing (CCW Under-Tile Membrane)	(800) 338-8701
C-Cure (UniFlex916) (UltraCure971)	(800) 895-2874
Laticrete International (Laticrete 9235 Membrane)	(800) 243-4788
Mapei (Planicrete W)	(800) 992-6273
Mer-Kote Products (Mer-Krete BFP) (Mer-Krete Hydro-Guard 2000)	(800) 851-6308
Noble Company (Nobleseal TS)	(800) 678-6625
Protecto Wrap (AFM Anti-Fracture Membrane)	(800) 759-9727
Schluter Systems, Inc. (Schluter Ditra Matting)	(800) 361-3127
TEC Specialty Products (Crack Isolation Membrane)	(800) 832-9023
(Triple Flex Waterproofing & Crack Isolation Membrane)	