warmboard® RADIANT SUBFLOOR

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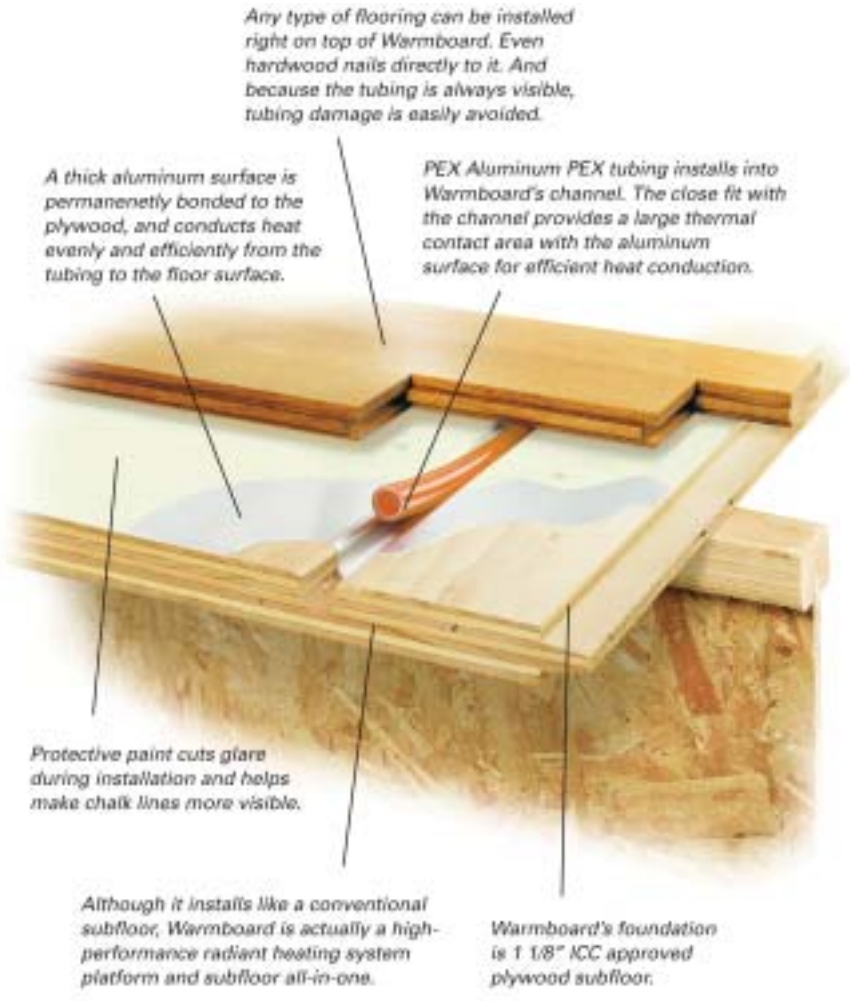

GREEN

Warmboard contributes to healthy and clean indoor air quality, while providing superior comfort. Germs, dust, pollen and mold spores generally associated with forced air systems do not apply to Warmboard. Additionally, the high conductivity of the panel leads to lower water temperatures, creating greater efficiency that ultimately benefits the environment.

Warmboard was chosen by five participating universities—including University of Maryland, MIT and University of Texas at Austin—to be used in their solar-powered homes for the Department of Energy's 2007 Solar Decathlon Competition. Warmboard was also selected by the University of Colorado at Boulder at the 2005 competition where they won the competition and took first place.

WHAT IS WARMBOARD?

Warmboard combines a structural subfloor and a thermodynamically sophisticated radiant panel into one simple component of your radiant heating system. Warmboard begins with a stiff, strong, 1-1/8" thick, 4' X 8' sheet of tongue and groove, weather-resistant plywood. A modular pattern of channels is cut into the top surface. A thick sheet of aluminum is stamped to match the channel pattern and is permanently bonded to each panel.

As a structural subfloor, Warmboard is stiff, strong and especially tough. It can be sawn with a Skilsaw and nailed or screwed directly to your floor joists just like any conventional subfloor. The same labor that would ordinarily install just a subfloor, installs a high performance radiant panel system, saving you time and labor from the very beginning. Other radiant heat systems are more labor intensive because they're added either above or below the subfloor. Warmboard is the subfloor.

As Warmboard is installed, the four modular panel types create an infinite variety of radiant tubing layouts to suit the needs of any home. A roll of half-inch PEX tubing (the radiant industry standard for toughness, reliability, and performance) is then easily installed into the channel to complete the hydronic circuit.

FEATURES

Why it's easy to use?

One of the most important criteria in the creation of Warmboard was to make every aspect of our system as compatible as possible with conventional construction materials and techniques. Any carpenter who has ever installed 4×8 sheets of plywood subfloor already has the tools and skills needed to install Warmboard. Architects do not have to change their construction details or structural calculations in any significant way in order to accommodate Warmboard. We produce all additional design documents necessary to satisfy local building codes and to guide you through a fast and efficient installation. Standard hydronic components from a wide variety of sources work seamlessly with Warmboard. Journeyman plumbers and radiant heat specialists will find that the same skills and tools they have always employed to install the hydronic components of a radiant system work with Warmboard. Because the layouts are in the panels themselves, the tubing installs quickly. In addition, the amount of tubing required is reduced by our 12" on center spacing, reducing labor costs and accelerating the overall construction schedule.

warmboard®
RADIANT SUBFLOOR
"Simply Smarter Radiant Heat"

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US Patent No. 5,788,152

see us at Sweets.com

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PERFORMANCE

CONDUCTIVITY IS KING

There's a reason frying pans are made of aluminum, not concrete. The thick aluminum surface of Warmboard radiant subfloor possesses the two most important properties for excellent thermodynamic performance: high conductivity and low thermal mass. Aluminum conducts heat 240 times better than conventional concrete and 490 times better than gypsum-based concretes. In fact, Warmboard is so conductive that with 12" on center tubing, it outperforms even 4" on center slab systems. Better conductivity equals faster response times, more even floor temperatures, and more heat delivered from lower water temperatures. This allows the right amount of radiant heat where and when it is wanted.

WATER TEMPERATURE

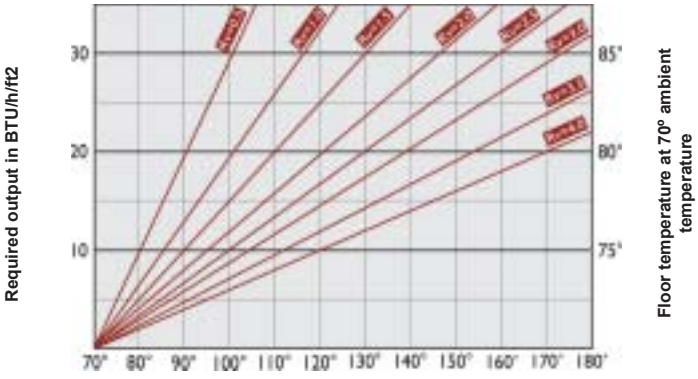
LOWEST IN THE RADIANT HEAT INDUSTRY

Most Warmboard systems operate with water between 90° and 110°. Lower water temperature means lower energy bills. It also means more choices in ways to heat your water. While many Warmboard systems use conventional boilers, innovative low temperature alternatives such as condensing hot water appliances, geothermal, solar panels, and ground source heat pumps work just fine.

Required Water Temperature in Degrees Fahrenheit

This chart displays typical outputs expected. Warmboard is one component of a complete system. Complete system design shall be performed in accordance with both the Radiant Panel Association (RPA) Guidelines, the manufacturers' recommendations for components supplied by others, and is the responsibility of the system designer.

Assumes a designed ambient air temperatue of 70° Fahrenheit



Average of supply/return water temperature at manifold for good dynamic performance

Notes:
- Steady state performance will require 10% lower supply temperature.
- Rv = floor covering resistance value
- Maximum finish floor temperature should not exceed 85° fahrenheit.
- Assumes minimum R21 insulation below floor.

COVERINGS

COMPATIBILITY

One of Warmboard's greatest advantages is its compatibility with virtually all floor coverings. Warmboard works particularly well with hardwoods, delivers ample radiant heat through even the plushest carpeting, and tile or stone can be set over it using conventional methods. Warmboard is the one radiant panel that doesn't ask you to compromise your floor covering choices.

DESIGN

FOUR PANEL TYPES

Part of the elegant simplicity of Warmboard is that just four panel types can accomodate virtually any home design. We'll work closely with the architect to provide the optimum Warmboard system design for your home. The resulting construction documents provided by Warmboard are the best in the radiant industry, and will help streamline approval by your local building officials.

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