

# Radiant Heating & Snow Melting

Give Your Heroes the Comfort of Radiant



[WattsRadiant.com](http://WattsRadiant.com)

**WattsRadiant**<sup>™</sup>  
A **WATTS** Brand

# Radiant heating for comfort & efficiency

Radiant heat provides numerous benefits, including improved comfort, reduced allergens, and consistent temperatures. It is also known for being quieter and more energy efficient than forced air heating. In a 'hydronic' radiant system, warm water flows through tubing connected to a central manifold. Electric radiant uses cables or mats instead of tubing. Electric systems are often selected when the area to be heated is limited in size. Hydronic is typically preferred for whole home heating due to lower operating costs. Both types of radiant systems can easily be zoned to provide customized operation for various areas of the home.



Infrared images illustrate how heat radiates from a heated floor to warm surrounding surfaces. Radiant heat transfers in every direction unlike hot air which tends to move upward and collect at the ceiling.

## Why does radiant heat 'feel' more comfortable?

People are natural heat generators. They feel comfortable when the amount of heat they lose through their skin is equal to the amount of heat they generate. Touching a cold surface causes discomfort because heat is lost too quickly through conduction. Conversely, air temperatures that are too warm prevent heat from transferring away from our skin at a comfortable rate. Radiant heating offers warmer surfaces and cooler air temperatures, the ideal for comfort.



## Reasons to choose radiant heating

- More efficient than air
- Improved comfort
- Less allergens
- No ducts or grills
- Quiet operation
- Higher resale value





# Radiant snow & ice melting for safety

Properly designed snow and ice melting systems are safe, reliable and efficient. They can be engineered to meet the needs of large or small spaces in weather conditions ranging from mild to extreme. Radiant snow melting systems are used in a variety of locations.

- Driveways, walkways & stairs
- Parking lots & exit ramps
- Emergency entrances
- Sports fields
- Car washes



Snow Melting systems include tubing or electric cables embedded in the concrete. An experienced mechanical contractor can help select the best type of snow melting system for your location. Properly designed systems need to factor in weather and site conditions while including provisions for drainage.

## Safety

A 2009 study published in The American Journal of Emergency Medicine found that an average of 11,500 snow shoveling-related injuries and medical emergencies were treated in U.S. emergency departments each year from 1990 to 2006.<sup>[1]</sup>

- Study of 6,100 hospital emergency departments over a 17-year period
- 6.7% of cases were cardiac-related; they caused half of all hospitalizations and all 1,647 deaths.<sup>[1]</sup>
- Each year nearly \$500 million is spent in defending and settling claims for snow and ice related injuries.<sup>[2]</sup>

<sup>[1]</sup> Daniel S. Watson, Brenda J. Shields, Gary A. Smith, American Journal of Emergency Medicine, Vol. 29, Issue 1, p11-17

<sup>[2]</sup> SNOW Magazine, March 2015



## Benefits:

- Safety
- Convenience
- Reduce clearing costs
- Improve accessibility
- Eliminate paver or curb damage from snow plows
- Prevent lost revenue due to business closures
- Protect landscaping from salts and chemicals
- Melt areas with limited snow removal space

## Hydronic (heated water) under subfloor

Install floor heating without disturbing the finished space above. Radiant tubing is fastened to the underside of the subfloor with clips or FlexPlate™ heat transfer plates. Insulation below the tubing and at joist ends is recommended to ensure heat transfers in the desired direction.



### Tubing options

ONIX™



RadiantPERT™



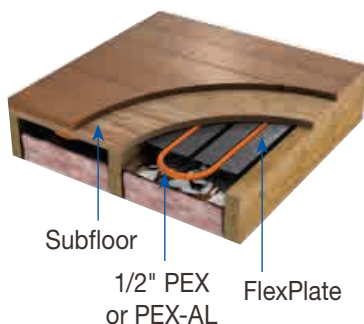
RadiantPEX+™



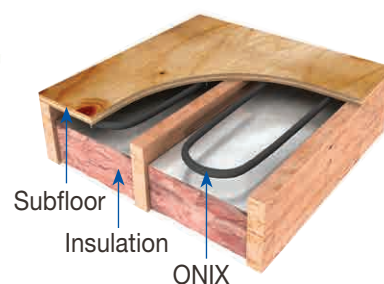
RadiantPEX-AL™



FlexPlate with 1/2" PEX+ or PEX-AL improves heat transfer and uniformity



ONIX is a kink-proof choice compatible with Watts Radiant's StapleGun



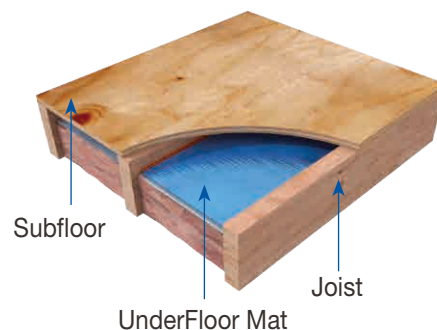
## Electric under subfloor

UnderFloor™ Mat provides a simple option for installing electric radiant heating without replacing flooring in the space above. These easy-to-install mats come in two widths for common joist spacing.

The orange mesh is attached to joists using a staple-gun. Each joist bay requires one mat.



Underfloor mat attached to joists. Insulate below mats and at the joist ends to ensure heat is directed to the living area above.





## Hydronic above subfloor

SmartTrac™ provides an easy way to install radiant heating above a subfloor without the added weight of a concrete slab. These 5/8" modular panels are compatible with 3/8" PEX or PERT tubing. SmartTrac can also be used in wall and ceiling applications.



Standard Panel



Optional Utility Panel



### Tubing options

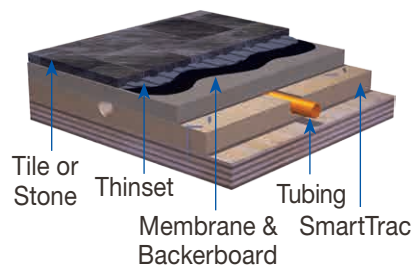
3/8" RadiantPERT™



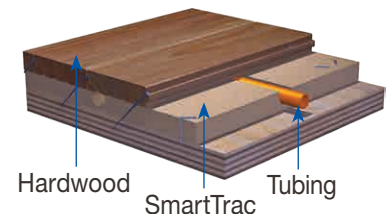
3/8" RadiantPEX+™



For tile, a crack isolation layer is recommended

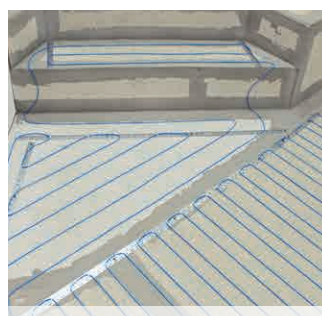


Hardwood can be installed directly over SmartTrac

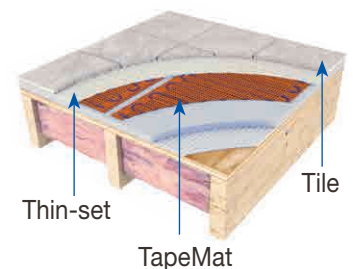


## Electric above subfloor

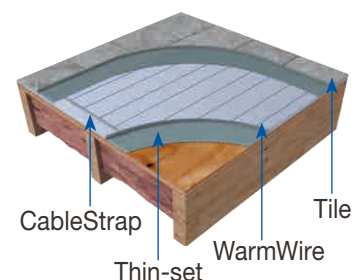
Mat products such as Tapemat®, Custom TapeMat or ShowerMat™ offer the fastest installation. For curved or non-rectangular spaces, WarmWire® is recommended. Both are embedded in thin-set or concrete self-leveler after attaching to the subfloor.



Double-sided tape makes attaching TapeMat to the floor easy.



WarmWire is installed using CableStrap or heated tile membrane.



## Hydronic in concrete

Tubing can be installed in a thin concrete layer over subfloors or within a structural slab. Thicker slabs offer a more consistent temperature and take longer to warm up or cool down. Attachment options for subfloors include pipe clips, and snap-in plastic panels. Structural slabs commonly use cable-ties with rebar or rigid insulation panels with grooves for tubing. Watts Radiant offers reference materials and support to help contractors select and install the best components for each project.



### Tubing options

ONIX™



RadiantPERT™



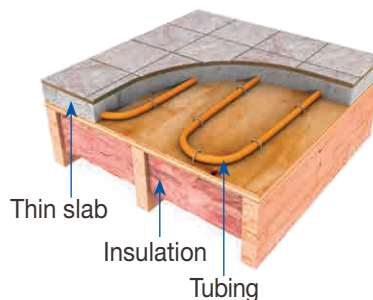
RadiantPEX+™



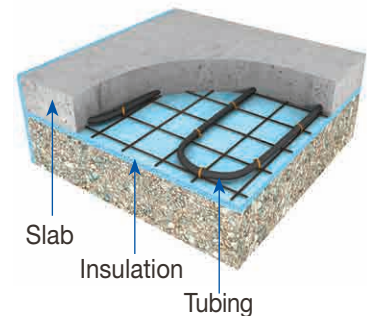
RadiantPEX-AL™



PERT, PEX+ or PEX-AL tubing embedded in a thin concrete slab (thinslab)



ONIX tubing attached to rebar and embedded in a structural concrete slab

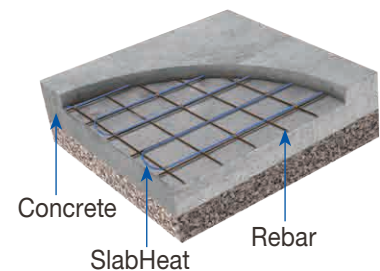


## Electric in concrete

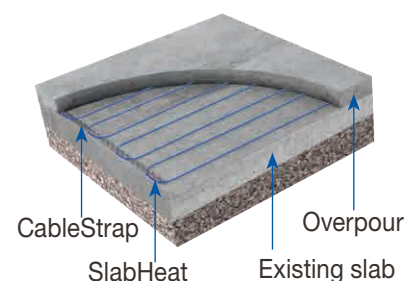
SlabHeat™ offers the comfort of radiant heating in buildings where a hydronic system is not practical. SlabHeat can either be embedded in a new structural slab or added above an existing slab with an overpour (slab cap).



For new concrete slabs, SlabHeat cable is attached to the rebar using cable-ties.



CableStrap™ is used to attach SlabHeat cable for overpour installations.





## Hydronic

Hydronic snow melting systems are flexible enough to fit a wide range of applications. They allow for a choice of fuel sources and can work together with hydronic floor heating systems. The tubing used in hydronic snow melting systems is filled with a fluid that is resistant to freezing.

Tubing options



ONIX™



RadiantPERT™



RadiantPEX+™



RadiantPEX-AL™

## Electric

Electric snow melting systems are commonly installed in areas with less extreme weather or fewer snowfall events per year. Compared with hydronic, electric typically has lower installation and higher operating costs.

Watts Radiant offers a choice between ProMelt Mats and Cable in a range of voltages. Mats are faster to install. Cable has more flexibility for curves and non-rectangular areas.



RadiantPEX+ tubing attached to rebar and embedded in a structural concrete slab



ONIX tubing installation for stairs



ProMelt Mats offer a fast installation option

## Radiant Heating Controls

Watts Radiant offers a full line of temperature control solutions to optimize hydronic heating system operation. Products include thermostats and mechanical room panels. For electric radiant, the SunStat thermostats offer built-in GFCI's, dual voltage relays and optional features like Wi-Fi access and touchscreen control.

## Snow Melting Controls

Watts Radiant snow melting controls include innovative features to improve safety and reduce the cost of operation. To get the best mix of efficiency and convenience, ask your contractor for features like automatic start and stop operation and slab outdoor reset.



# Why Choose Watts Radiant?

- Extensive radiant heating and snow melting product line
- Solution packages designed to provide superior comfort and efficiency
- Product choices available for both new and retrofit construction
- Proven reputation with thousands of successful installations across North America
- World-class design, manufacturing and technical support with over 30 years in the floor heating business

Watts Radiant products are designed to add comfort, convenience and reliability to homes and commercial buildings. With Watts Radiant, you can choose from a full line of floor heating and snow melting solutions that are easy to use and install.



**WattsRadiant™**

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