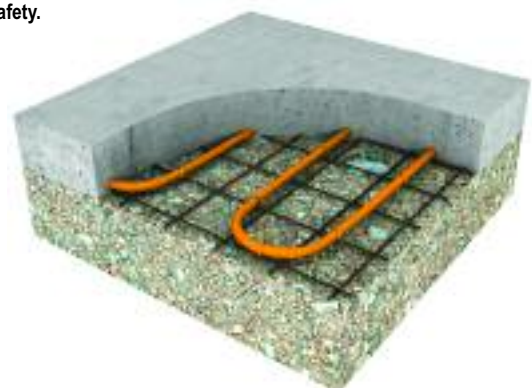




RadiantPex installs in sand below concrete pavers and will join with a manifold. Imagine warm pavers instead of shovels, blades or salt.



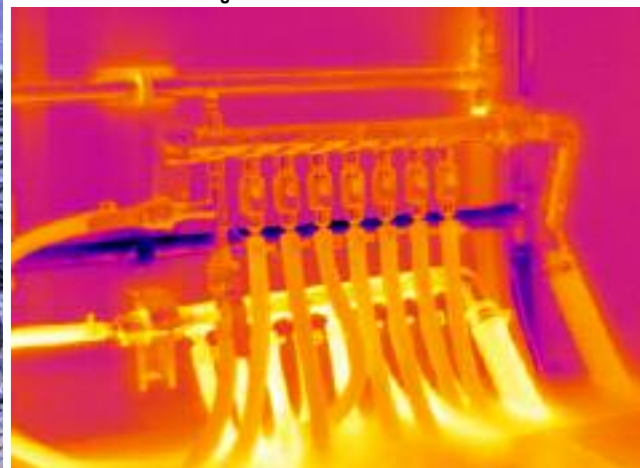
Onix tied to reinforcing wire in sand. Cover with bricks, stone, or pavers for snow-free safety.



Onix tubing ready for a concrete sidewalk.



Onix shown in infrared light connected to a manifold.



Note Onix's cold weather jobsite flexibility.



Photo courtesy of Sun Valley Resort

Safe access for the River Run Day Lodge.

Barrier-equipped RadiantPex installs in a concrete slab. Imagine snow-free steps.

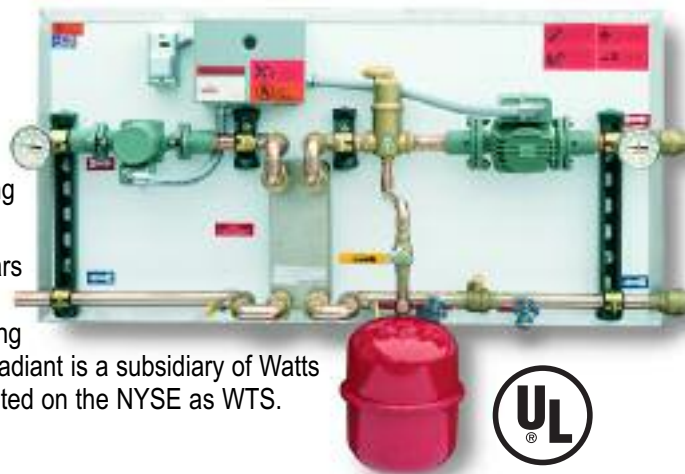


Get the right equipment.

Tubing. A Watts Radiant snowmelt system circulates a water/antifreeze fluid under pavement, using special radiant rated tubing. The two most popular choices are Onix aramid-reinforced tubing, and RadiantPex™ tubing. Watts also supplies matched components, including stainless steel and copper manifolds.



Mechanical Packages. A HydroControl Panel is the heart of a snowmelt system. It transfers heat from a heat source to the snowmelted area. These factory designed/assembled panels systemize the pumps, heat exchangers, valves and controls for years of trouble-free operation.

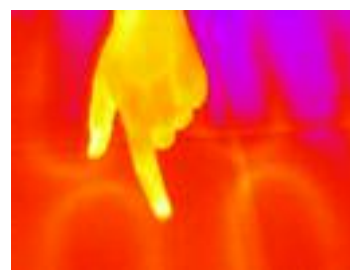


Controls. Watts offers the simplicity of manual controls for smaller systems, but supplies automatic snow/moisture sensing controls for commercial systems.

Support. The people at Watts Radiant have hundreds of years of collective radiant experience. We work with professional engineers, representatives, wholesalers and contractors to bring you the convenience and safety of snow-free access. Watts Radiant is a subsidiary of Watts Industries of Andover, Massachusetts, founded in 1874 and listed on the NYSE as WTS.



Infrared images produced with Flir Systems ThermoCAM®, www.flirthermography.com



The depiction of radiant floor systems via color infrared photographs is a trademark of Watts Radiant, Inc.



The Future Looks Radiant™ **WattsRadiant**
Floor Heating & Snowmelting
A Watts Industries Company

Call us toll free; **1.800.276.2419**
or visit us at **www.wattsradiant.com**

3131 W. Chestnut Expressway
Springfield, MO 65802
FAX: 417 864-8161



Thousands of systems have made us a leader in the radiant snowmelt industry. Experience points to Watts Radiant!



WattsRadiant
Floor Heating & Snowmelting
A Watts Industries Company

Melt Troubles Away.



Sun Valley Resort in Idaho snowmelts so skiers may dine comfortably, and save their balancing skills for the slopes.

Photo courtesy of Sun Valley Resort; Sun Valley, ID.

Stairs and Steps
Walkways and Sidewalks
Entryways
ADA Ramps
Sports Fields
Coal and Aggregate Bins

Driveways
Parking Lots and Garages
Car and Truck Washes
Car Ramps
Courtyard Areas
Roofs and Eaves
Bridges

Decks
Courtyard Areas
Helicopter Landing Pads
Loading Docks
Roadways
Milking Parlor Ramps
Animal Arenas and Tracks



Melt troubles away with a Watts Radiant snowmelt system.

A professional snow/ice melting system welcomes friends and customers, and is surprisingly inexpensive to operate.

Whether you have a steep driveway, a helipad, or loading docks that must be accessible at all times; more and more people are turning to professionally designed snowmelt systems for convenience, safety, and savings.

Four Reasons to Consider Snow Melting:

1. Minimizes Accidents

- Reduces slips and falls on ramps, steps, and entrances.
- Reduces "tracked in" ice, snow, and water.
- Reduces auto accidents on ramps, entrances, and parking lots.

2. Prevents Damage

- Saves concrete, floor coverings, and landscaping from salt.
- Protects concrete, stone, and brick from snow plowing.
- Avoids damage to landscaping from snow plowing.
- Prevents damage to overhead doors from ice related "freeze ups".

3. Saves Time and Money

- No time lost shoveling walks and drives.
- No time lost clearing loading docks.
- No time lost spreading salt.
- No time lost getting to work.

4. Surprisingly Inexpensive to Operate

Seasonal operating costs for heavy commercial snowmelt systems are estimated using methods adopted by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), and are based on typical Winter weather for the areas. RadiantWorks software calculates estimated annual costs based on your local weather conditions, fuel costs, and performance requirements.

Buffalo, NY	\$.21/square foot
Chicago, IL	\$.12/square foot
Minneapolis, MN	\$.25/square foot
Great Falls, MT	\$.14/square foot
Spokane, WA	\$.14/square foot



The snow goes and the work goes on.



Institutional snowmelt is a matter of life and death.



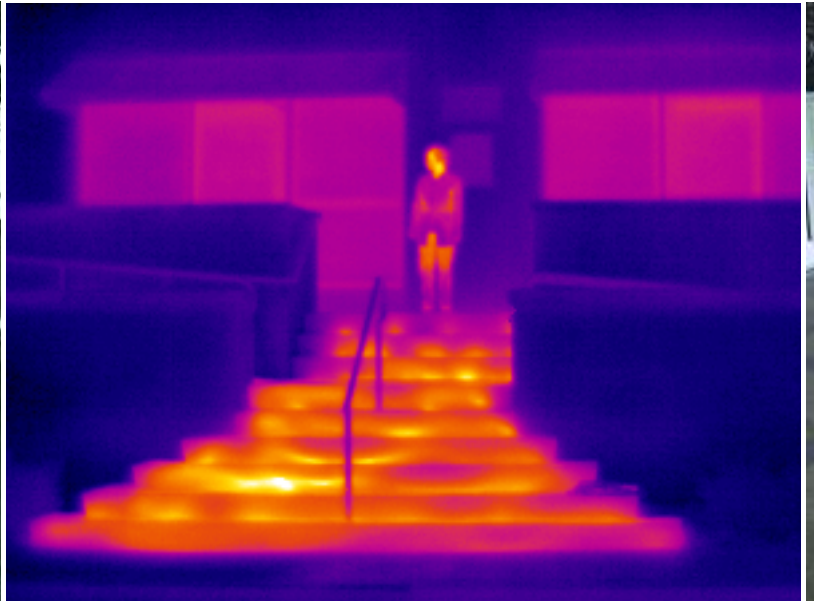
Skyscraping not snowscraping.



Every public building should be this accessible.



Warm your entryway with infrared energy.



Get a design from Watts Radiant.

Professional Design Assistance

The engineers and design staff at Watts Radiant work with the owner's representatives to ensure a professional design, based on local weather. Each system is designed on Watts RadiantWorks® software.



RadiantWorks was the first professional snowmelt design software in the industry, and offers unequalled advantages to professional system designers.

RadiantWorks is based upon the original research of Dr. Birol Kilikis, long time consultant to Watts Radiant. Dr. Kilikis is a distinguished ASHRAE Fellow, who also serves on the ASHRAE Technical Activities Committee. Dr. Kilikis is also Head of Section 6, which encompasses many ASHRAE technical committees and task forces, including those charged with writing standards for snowmelt systems.



Cars won't slip going up or down.

Snow-free Area Ratio 0 - Residential

Recommended for residential and light commercial walkways, driveways, entrances, etc. It permits the entire surface to be covered with snow while the snow is falling, although melting is occurring under the blanket of snow. The snow will gradually melt after the snowfall ends.

A typical design might be 9"- 12" on-center tubing spacing with a load of 75-125 BTU/sq.ft.

Snow-free Area Ratio 0.5 - Commercial

Recommended for heavier commercial applications, such as docks, ramps, entrances, driveways, etc. It permits 50% of the surface area to be covered with snow during the snowfall event. The remaining snow will gradually melt after the snowfall ends.

A typical design might be 8"- 9"on-center tubing spacing with a load of 125-175 BTU/sq.ft.

Snow-free Area Ratio 1.0 - Institutional/Industrial

Recommended for hospital emergency entrances, helipads, high-priority aprons, loading areas, runways, etc. This class melts all of the snow at maximum snowfall amounts as the snow falls.

A typical design might be 6"- 9"on-center tubing spacing with a load of 175-250 BTU/sq.ft.

The following chart is an example of a RadiantWorks® calculation for a **Snow-free Area Ratio 0.5** driveway in Buffalo, NY, 95% of the time:

Calculated snowmelt heat loss for driveway @ 0.15 in. water per hour					
Ratio 0.5 50% clear	Sensible (Btu/h-sqft)	Melting (Btu/h-sqft)	Evaporation (Btu/h-sqft)	Atmosphere (Btu/h-sqft)	Total (Btu/h-sqft)
During snow	2	111	5	9	127
After snow	0	0	15	87	87
Idling load	0	0	0	54	54

Total heat loss: 165,612 Btu/hr - Total back and edge loss: 5,152 Btu/hr

Note: Watts Radiant uses RadiantWorks® software to calculate the actual design specifications of each system. The above examples are not intended for rule of thumb design.

RadiantWorks® snowmelt design.

Powerful "what if" capabilities are used to evaluate the benefits of adding insulation, changing pavement types, changing fuel sources, or altering tubing types and spacing.

RadiantWorks evaluates your local code or performance requirements, weather, fuel costs, tubing depth, pavement type, and many other factors. It reports the total heat load, pump specs, amount and type of tubing, and fluid temperatures.

Surround your hot tub with warm stone.



Easy access all the way to your front door.

Cars and houses last longer without salt.



Do all you can to make steps safe.



Travel safer on ice-free bridges.

