

HEATIZON SYSTEMS

4403 South 500 West · Murray, UT 84123 · (801) 293-1232 · Fax: (801) 293-3077

The Product: Heatizon consists of two different types of resistive heating elements, a transformer and a control unit. The system operates at 8 to 30 volts and 90 amperes. One type of element is for use in concrete and the other type is for use on concrete floors, under roof shingles, tile, carpet or hardwood floors.

Benefits or Advantages:

Radiant Heat is more comfortable and efficient than forced air or convection heating. In space-heating, occupants feel more comfortable even when the space air temperature is maintained lower than typical for forced air heating. Radiant heat results in less heat-loss from a room. Forced air registers and baseboard heat strips are always located on outside walls below windows. These systems heat air that comes in contact with the external windows and walls to temperatures much higher than the desired room temperature. This results in more heat-loss from the space. The Heatizon system provides a uniform heat flux from the floor into the space, resulting in less heat-loss from the room.

Mass Warming results in less temperature variations in the space being heated. The flooring material is heated by the element which then radiates the heat into the space. The floor surface can be maintained at a very uniform temperature which prevents the hot and cold temperature swings that occur as other systems cycle on and off. Warming the mass of the floor results in what is called thermal capacitance. This allows the space to remain warm even when extreme temperatures occur. Essentially, heat energy is stored in the mass of the floor and other objects in the space. This applies to any type of floor surface -- wood, concrete, tile, etc.

Efficiency of the Heatizon system is excellent. When compared with a heat pump, forced-air furnace or baseboard heating system. The Heatizon system is more efficient watt for watt. An article in the July, 1996 ASHRAE Journal, "Radiant Heating for Thermal Comfort" reported on experimental results comparing a heat pump, baseboard heat and radiant heat. The radiant heating system consumed 33% less energy than the heat pump system and 52% less energy than the baseboard system.

Reliability of the Heatizon system is superior. The entire system is solid-state. There are no water lines to break or crack. The system has been proven over 20 years of service. Damaging the element is almost impossible. The controls allow for power failures or spikes, yet brings the system back on-line as quickly as possible.

Comfort of radiant heat is superior because the radiant heat flux is uniform throughout the heated space. There are no "point-source" hot spots like there are in baseboard and forced air systems. Thermal comfort is sustained as the system cycles on and off, because the heated mass temperature remains almost constant.

Convenience of installation is superior to any other system. There is no ducting to deal with, no lost floor or wall space. Other than a thermostat, the system disappears from sight. Retrofitting is easy. Adding the system to an existing space is much easier than installing a hydronic system.

Safety is a major advantage of the Heatizon system. Other electric resistance heating systems operate at 208/240 volts AC, whereas the Heatizon system operates at 30 volts AC. Water spilling or a nail being driven into the element is not a serious safety concern in the Heatizon system. The Heatizon system and components are ETL listed.

Quiet and Clean. The Heatizon system produces no noise. There is no fan starting and stopping and there is no filter to change or clean.

Life-Cycle Costs are less, especially when heating exterior concrete surfaces. The cost to replace a driveway, sidewalk or patio is many times the cost of the Heatizon system.

Typical Installations:

Finishing a Basement is an excellent application for Heatizon systems. The element can be placed directly on the concrete with padding and carpet installed over the top.

Tile is cold to step on in bare feet both summer and winter. The Heatizon element can be installed under tile in bathrooms, kitchens, entries, etc.

Hardwood Floors tend to be cold. The element installs between the subfloor and the hardwood floor and maintains the surface at a constant temperature that is comfortable to the touch.

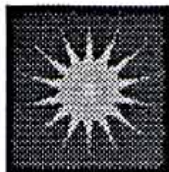
Nurseries or anywhere that babies crawl is ideal to keep warm. Small children are always close to the floor. Heatizon systems helps keep them from getting chilled.

Driveways, Sidewalks and Porches can be kept clear of snow and ice. The cost is less than shoveling and the concrete lasts longer because it is not subjected to salt or snow-melting chemicals.

Handicap Ramps are of no value if they are not clear of snow and ice.

Parking Ramps and Loading Docks are often sloped and difficult to clear of snow and ice.

Remote Locations and Moderate Climates, where electricity is the only utility available are ideal applications for installing the Heatizon system.



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Heating System Comparison

| | Heatizon Floor Radiant Low-voltage Electric Heating System | Forced Air - Gas | Hydronic (Hot Water) Floor Radiant | Hydronic (Hot Water) Baseboard | Electric Baseboard | Electric High-voltage Floor Radiant |
|--|--|------------------|------------------------------------|--------------------------------|--------------------|-------------------------------------|
| Efficiency | Efficient at 100% of capacity | 100% | 60-90% | 65-85% | 65-85% | 100% |
| | Efficient at 50% of capacity | 100% | 30-60% | 35-65% | 35-65% | 100% |
| | Efficient - relative thermal | 100% | 50-75% | 100% | 50-75% | 50-75% |
| | 100% of energy is delivered to heat element | Y | N | N | N | Y |
| | Proper sized capacity for "Off Peak" conditions | Y | N | N | N | Y |
| Maintenance | Annual maintenance required - subject to wear, leaks, water damage, friction, filters to clean or change, etc. | N | Y | Y | Y | N |
| | Easy to repair | Y | N | N | N | Y |
| | No/low maintenance/service (no chemicals, treatment, filters) | Y | N | N | N | Y |
| | Controls - simple and reliable | Y | N | N | N | Y |
| Cost Savings | Expandable - easily and economically | Y | N | N | N | Y |
| | Floor covering - compatible with all | Y | Y | N | Y | Y |
| | Floor space required for installation (mechanical room) | N | Y | Y | Y | N |
| | Decorating limitations for furnishings, wall coverings, etc. (no registers, grills, radiators, etc.) | N | Y | N | Y | Y |
| | Installation and operation - simple | Y | N | N | N | Y |
| | Structural building cost increases required to accommodate | N | N | Y | N | N |
| | Venting required to outside and combustion air required | N | Y | Y | Y | N |
| Concrete required - regular or lightweight | N | N | Y | N | N | |
| Remodel | Retrofitability - in existing concrete or asphalt | Y | N | N | N | N |
| | Retrofit into joist space effectively | Y | N | N | N | N |
| | Simple modification for remodeling | Y | N | N | N | Y |
| | Easy and effective for large or small areas | Y | N | N | N | Y |
| | Minimal floor section height increase (1/8" or less) | Y | Y | N | Y | N |
| Health & Safety | Health and Medical (does not distribute dust, pollen, allergy promoting particles through the air) | Y | N | Y | Y | Y |
| | Environmentally-friendly (Greenhouse, glycol, etc.) | Y | N | N | N | Y |
| | Safety (no high-voltage, no hot surfaces, no combustible gases) | Y | N | N | N | N |