

## Check List for Installation of Radiant Heat

**The Items listed below will insure that you have an efficient and comfortable system.**

1. Contractor to have a minimum of 40 hours training by radiant heat company. Training to be by Uponor/Wirsbo or equivalent training.
2. Heat load calculations using a **radiant heat load program** will be used to calculate the amount of heat necessary to heat **each room** in your home that is being heated with radiant heat. This program will calculate the amount of heat needed to heat the room, the temperature of the floor surface, the temperature of the water in the radiant tubing, the flow rate of water necessary, the pressure needed to obtain the flow rate, and various floor type choices for installing radiant heat.
3. If a geothermal water to water system is being used to furnish heat for the radiant heat system contractor to verify that 110 degree F. water will heat all rooms.
4. Contractor to perform room by room heat load calculations to insure that each room will heat properly. Room temperature differences shall be 2 degrees or less at night.
5. If desired an option with thermostats in each room to be provided in order to allow for the sun as it tracks the sky.
6. Contractor to guarantee a minimum of 65 degree F. room temperature when the outside temperature is minus 10 degrees F. Contractor to guarantee 70 degree F. room temperature for bathrooms when the outside temperature is minus 10 degrees F.
7. If radiant heat is being installed under a concrete slab or in a basement, proper precautions will be taken to insure that there will be no water under the slab. These precautions include making sure that proper sump, or pumps and drain tile will be installed. A rated vapor barrier instead of Visquene will be installed and the base under the vapor barrier will be smooth and level. Stego Wrap or equivalent shall be used.
8. The insulation used under a concrete slab to have independent laboratory certification. The R- value should be no less than R-10. The insulation used around the perimeter of the slab to have independent laboratory certification. The R-value should be no less than R-5. The insulation thermally isolates the slab from the earth. The insulation should support 3,600 pounds per square foot.

9. Radiant tubing with an oxygen barrier shall be used. The tubing should be pressurized to a minimum of 60 pounds per square inch with air before concrete is poured, or the floor is installed to be sure that there are no leaks.
10. Manifolds designed for radiant heat shall be used. Manifolds made with tee's and ball valves are not acceptable. Proper manifolds have 5 turn metering valves to adjust flow rates for each of the loops so that the floor temperature is even. Except for garages manifolds shall have built in zone valves that can be operated with an actuator.
11. A European style primary secondary pumping system shall be used. The system shall be designed so that the rooms needing the hottest water receive the hottest water and the rooms needing cooler water will receive cooler water. This system will insure even temperature between rooms.
12. Contractor to install radiant thermostats designed for radiant heat.
13. If there are wood floors contractor to install thermostats with a floor sensor and room sensor to insure that the floor surface temperature does not go above 80 degrees F.
14. Contractor to coordinate with wood floor contractor to insure that there are no issues with wood floor and radiant heat.
15. If chilled water coils are to be used for air conditioning, contractor to design chilled water coil or coils so that the system will cool the space to 75 degrees when the outside temperature is 95 degrees. Contractor will also design chilled water coil or coils to insure that the humidity on above ground floors is less than 60 per cent relative humidity. If a basement area is involved, provision to reduce humidity levels to be included as an option. Chilled water coils are typically used for geothermal radiant heat with forced air – air conditioning.
16. Contractor to furnish Certificate of Insurance to prove insurance coverage.
17. Contractor to furnish a copy of a business license.

This checklist is for work being done at \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_  
CONTRACTOR