Hydronic Heating

Hydronic heating works by circulating water heated by natural gas, oil or electricity throughout the home. The hot water then radiates heat and warms the air in the home. As the water circulates it starts to cool down, it then is circulated back to a boiler for re-heating. Hydronic heating is generally more even and steady than other heating systems. When the heat exchanger and boiler are off, the system still emits heat until the circulating water cools down. These systems are quieter than standard forced air heating systems and can reduce airborne dust. Hydronic heating does not require a lot of space and the boiler can be located anywhere within the home as long as it is not threatened with freezing. This type of heating can produce the same amount of heat as most standard forced air heating systems.

There are many benefits of this type of heating, however, there are also disadvantages. If your heating system does not have a fan installed, it cannot provide the cooling, humidification, air filtration or forced air circulation that an alternative heating system could. Where excessive heat is produced (sunlight), the heat cannot be easily transferred to other areas within the home. When hydronic heating is being installed it is vulnerable to possible damaging impacts and leaks. The system will only function properly when all of the piping is in full working order. If the piping somehow becomes damaged, water leaks can rot the flooring and structure of the home.

Piping systems for hydronic heating

There are a few types of piping used in hydronic heating systems to distribute heated water throughout a home. The first type of piping is called a one pipe series loop system, which uses a single pipe that runs through a series of rooms and is said to be the simplest version. The heating devices are connected to the pipe where they are needed. There is also a one pipe system, which is similar to the series loop system in that a single pipe is used but the heating units are installed inside circuits off the main pipe. A special pipefitting is installed to force the

heated water out of the main pipe to a heating device before returning the water back to the main pipe. A two-pipe direct return and reverse return system is good for balancing room temperatures across the home. Water in each of the pipes travels shorter distances, returns to the boiler more quickly and allows greater heat control in individual rooms or areas.

Heating the water

When the boiler is used for space heating, it is best to have the thermostat control the burner and circulator together. This will adjust the heat to your needs and provide the lowest operating costs. A programmable thermostat is one of the most energy efficient items that you could add to your heating structure. Another control strategy is to keep the boiler hot and have the thermostat turn the circulator on and off. The operating costs for doing this will be higher because of the continual heat loss.

Tips for Installation

When you install the heating system make sure that you also install a programmable thermostat and program it so that the heat goes down when you are not there or when you are sleeping and goes back to normal during regular hours. To keep the air circulating properly you should clean the heating devices regularly. Bedrooms should be zoned separately from living and dining spaces because each requires different heat specifications. Rooms that are exposed to a lot of sun should be zoned separately as well. Hydronic heating systems should be installed by a professional contractor.

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