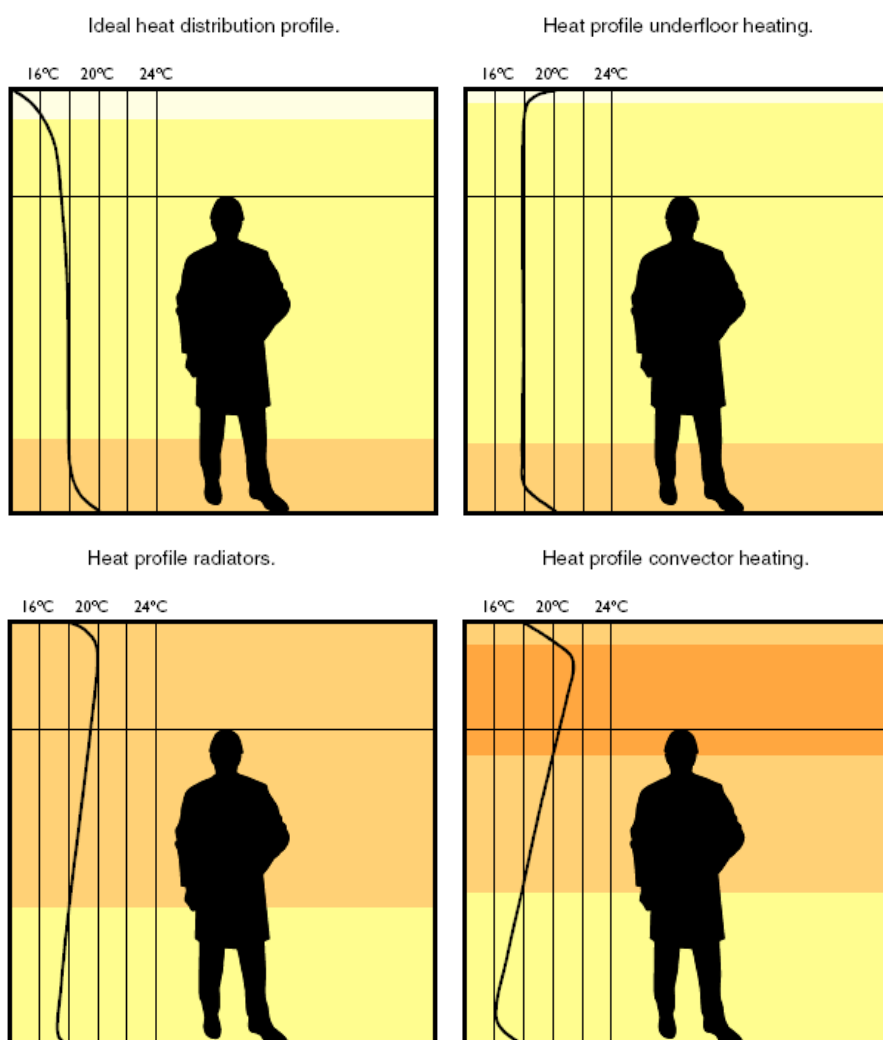


FACT SHEET: HEAT TYPE COMPARISON

Choosing the right heating type for a home can be a difficult decision. Factors such as the type of heat (radiant vs. convection), type of fuel (electric vs. gas), and distribution system (central vs. localised) all need to be considered to ensure the home can be heated comfortably without too great an expense. Right House has a variety of heating options available and can help you decide what's right for your home. This guide is designed to provide you with an overview of the heating systems available. The first section examines the difference between radiant and convective heating.

The following diagrams illustrate the temperature gradients produced from various different types of heating systems. The ideal case is shown in on the top left where the temperature reduces as it rises through the occupied zone, with the temperature level at its lowest at the ceiling. This is based on when people feel the most comfortable, in other words when their feet are a little warmer than their heads. A typical value for the temperature difference is the feet no more than 1°C warmer than the head.



The underfloor heating profile shown in the figure on the top right is the closest to the ideal profile, with practically no temperature rise between floor and ceiling. For very high spaces this will move more towards the ideal line with the temperature reducing as the height increases. The radiator heating profile shown in the bottom left figure shows a higher temperature at ceiling level than at ground level, with a difference of approximately 2°C between the two positions. This temperature difference becomes even greater for the convector heating profile on the bottom right. In this case a difference in excess of 5°C may be experienced. This gradient is especially great in room with high ceilings. Warm air from convective heating systems will rise (warm air is less dense) making rooms with high ceilings more difficult and expensive to heat.

Radiant heat does not directly heat the air, but heats the solid objects on which it falls, and so floors and walls derive warmth from the radiant rays. These warm surfaces set up convection currents, which reduce the heat lost from the human body by convection. Since about 45% of the heat lost by the human body is due to radiation, the feeling of warmth derived from radiant heating is greater than by convection. The radiant heat gives a greater feeling of warmth with a lower air temperature. This can achieve about a 15% saving in fuel costs.

COMPARISON OF HEATING TYPES

Radiant floor heating

Features

- Even temperature distribution
- Increased flexibility for furniture
- Reduced running costs
- Healthier (fewer dust mites)
- Reduced convection currents
- Less obtrusive than other heating systems

Considerations

- Generally slower response time
- Sensitive to certain types of floor coverings
- Floor penetrations to be avoided, or very carefully planned

Radiators

Features

- Quick response when required
- Can be replaced easily and cheaply
- Easy to incorporate towel rails
- Independent control for different locations
- Can be high or low temperature

Considerations

- Local hot spots



- Caution recommended when using high temperature systems in homes with small children
- System gets furred up over time without adequate water treatment
- Take up wall space reducing room usage
- Needs to remain unblocked by furniture or other items

Convection

Features

- Can feel warmer faster
- Ducted, ceiling and wall units can be less obtrusive than radiators
- Can be economical in climates suitable for a heat pump

Considerations

- May have some heat loss through ductwork
- May lose part of loft space to accommodate ductwork
- Limited individual room control for central systems
- Some systems require wall or floor mounted indoor units

