

Heat Flow

Heat Transfer and Standard Insulation

All the materials that are used in the construction of your home or business absorb and transfer Heat.

Thermilate[®] will greatly reduce heat gain in the walls, ceilings and roofs. **Thermilate**[®] will absorb the **AMOUNT** of heat that you are either trying to keep in or out! **Thermilate**[®] will reduce heating cost during the winter months in your home. It will reduce cooling cost in your home during summer months. **Thermilate**[®] will reduce energy cost all year round.

Standard insulation works by slowing down the **RATE** of transfer of the heat that has been absorbed by the walls and roof of your home. **Thermilate**[®] brings an additional layer of protection against energy loss by improving insulation that is added to paint.

About 80% to 95 % of all heat is transferred! Heat **ALWAYS** flows from the warmer side to the cooler side by one or more of the following ways:

Conduction - Conduction is the transfer of heat through a solid object. When one part of an object is heated, the molecules within begin to move faster and more vigorously. When these molecules hit other molecules within the object they **CONDUCT** heat through the entire object. They cause heat to be transferred through the entire object.

Convection - Convection is the transfer of heat by the movement of a fluid such as water or in the air. Inside of a wall cavity, air removes heat from a warm interior wall, and then circulates to the colder exterior wall where it loses the heat.

Radiation - Any object will radiate heat to cooler objects around it by giving off "heat waves". This is a direct transfer of heat from one object to another, without heating the air in between. This is the same process in which the Earth receives heat from the Sun or a wood stove supplies heat to its surroundings.

How do we stop this transfer?

Insulation such as Fiberglass, Cellulose, Styrofoam, etc. have commonly been used to reduce heat gain and resist [R value](#)¹, the heat transfer by way of conduction only; they do nothing for the heat transfer by way of radiation.

Mass insulation products work by trying to "trap" the heat in air pockets contained between the fibers in the product. Air is a good insulator against conduction but cannot stop radiant heat! Once the insulation becomes saturated with all the heat it can absorb, the heat is then transferred on to the wall or ceiling.

Summer heat gain increases interior temperatures and requires extended air-conditioning running times. **Thermilate**[®], by adding insulation value to your paint, will reduce cooling cost. In winter, heat loss results in the need to generate more heat and thus gives you higher heating bills! **Thermilate**[®] will reduce heating cost.

Your power company loves it when your heating/cooling system works trying to cope with the heat that is being radiated into or out of your home. **Thermilate**[®] will reduce heat gain and will reduce those costs.

Thermilate® works for you, not the utility companies.

Standard insulation reduces the **RATE** of heat transfer into your home but not the **AMOUNT** of heat transfer. In fact standard insulation can actually work against you in the summer since your home actually stores up the heat absorbed during the day. You will notice that in hot climates it may take until late evening for your home to cool down.

In the winter time your interior walls and ceilings actually absorb a great deal of the heat that you generate with your heater. This absorbed heat then flows outward through the walls and ceilings of your home into the colder outside air.

Thermilate® is the Answer!

Thermilate® will reduce heating cost and reduce cooling cost by decreasing the insulation demands placed on conventional insulation. Regular insulation may have been poorly installed or can deteriorate due to dampness or age. The ability of **Thermilate®** to be easily and inexpensively applied to walls and ceilings in the form of a paint additive creates a thermal barrier. It is a superior method for the homeowner to utilize in order to maximize the energy efficiency of a home or building.. Upgrading the inner - wall or ceiling insulation in older or poorly insulated buildings can be an expensive and sometimes impossible task **Thermilate®** is the economical choice.

¹ the ratings of a materials ability to "resist" the conduction of heat flow through a solid. This conduction of heat transfer is between 5 % to 8 % of the total heat transfer into and out of a building that leaves between 92 % and 95 % of the total heat transfer to be dealt with, mostly by your air conditioner and heater.