



COLD AIR PENETRATION

If you experience a cold draft around your fireplace, first check and make sure the flue damper is closed. Second, if your unit is equipped with the optional outside air supply, be sure the damper for this system is closed. Third, be sure all gaps around the metal fireplace and the finished product are sealed. If all three of these conditions are satisfied then you are probably experiencing a cold air infiltration problem.

Cold air infiltration problems are inherent in the design of double-walled pre-fabricated fireplace systems. Pre-fabricated fireplaces are cooled through the convection process of circulating air around the unit. This process enables the unit to be set on combustible materials and maintain minimal clearances in order to be a cost effective product in the construction of new homes.

When in operation, the fire in the combustion area produces heat. This heat warms the air in the surrounding chamber. As this air is warmed, it rises and pulls additional air through the ventilation openings. The circulation of this air through the cooling area keeps the unit within safe temperature ranges. This system works very well when the unit is in operation.

The major disadvantage to this type of cooling system is under some conditions the convection process can reverse itself causing cold air to spill back into the room. This typically occurs on extremely cold days and is the result of the exterior of the fireplace becoming cold and then cooling the air in the surrounding chamber. As this air is cooled it drops into the room through the ventilation openings in the fireplace. The best analogy is to compare it to the cold drafts that occur around full drapes in front of patio doors. The cold that transfers through the glass cools the air behind the drapes and this cold air dumps into the room creating a draft.

The amount of cold air infiltration is typically increased with lower exterior temperatures, extreme wind conditions, certain site conditions, air flow conditions within the home, location of the fireplace within the home, and the existence of a negative air pressure situation within the home. The unfortunate part is when a cold air problem occurs, there is no remedy. Most manufacturers provide some magnetic strips that can be used to cover the vents when the fireplace is not in use, but this will not stop all of the draft. These strips absolutely **MUST BE REMOVED** before using the fireplace as they cover the ventilation openings which allow the cooling air to keep the unit from overheating. If these strips are not removed, the probability of the unit overheating and catching the home on fire is extremely high.