

THE SAFE STOVE

Two tested ways to shield your walls from fire.

Wood-burning season is here. For some people, it will turn into "house burning" season.

A common cause of wood-stove-related fires is placing stoves too close to combustible walls. Something happens to wood when it is exposed to heat over a period of time. You may never have heard about it, and even our fire chief here in Chittenango, New York, had trouble pronouncing it.

"Pyrolysis," he finally uttered, and then explained how it affects wood. "Heat slowly breaks down wood's chemical composition and lowers the temperature at which it will catch fire, until, one day . . . it does. It's like turning your wall studs into charcoal."

It's never intentional; people think they are protected, but they're not. Masonry veneers or simulated-brick wall coverings don't provide any protection at all. Neither does a sheet of metal applied directly to the wall. These materials conduct heat right to where you don't want it—your wall studs. Some of those panels that look like stone or brick are actually made mostly of wood or wood fibers. Not good!

The National Fire Protection Association (NFPA) recommends that radiant stoves be placed 36 inches from any combustible material. You can reduce that

clearance to 18 inches if you have the proper wall protection. Short of ripping out all the combustible materials from behind your stove (wallboard, lath, studs) and replacing them with noncombustibles, the NFPA recommends wall panels that have space behind them for air to circulate and draw away the heat. These recommendations are made on the basis of thorough testing by the National Bureau of Standards. Two of the best panels you can install yourself for excellent heat protection are metal heat shields and ventilated brick walls.

Metal Heat Shields

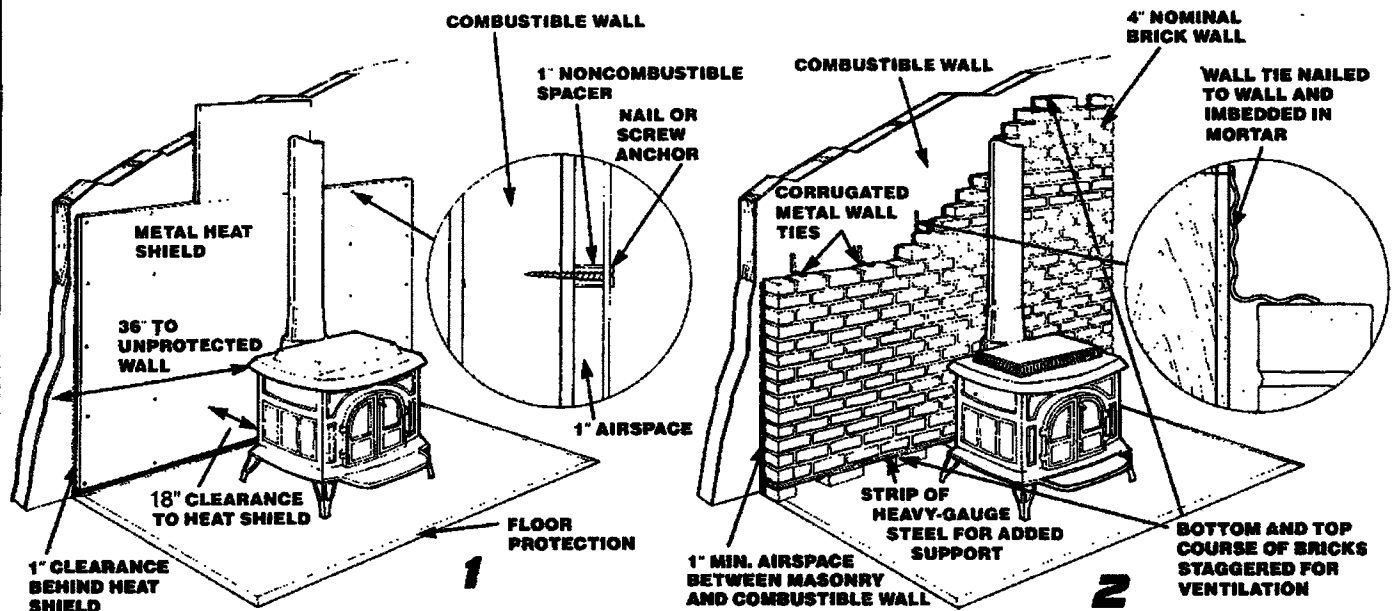
Use a sheet of 24-gauge steel large enough so there is still 36 inches clearance between any combustible material and the closest radiating surface of your stove (Fig. 1). You will need to use noncombustible spacers to maintain the 1-inch airspace behind the panel. Ceramic fence insulators, stacked washers, or a small-diameter pipe will work well, but don't use copper or aluminum because it will conduct too much heat. Nail or screw the panel to the wall studs through the hole in the center of the spacer. Use a screw and spacer every 16 inches horizontally and vertically, but do not use any directly behind the stove or connector. Mount the panel 2 inches off the floor,

leaving the top and bottom edges open to allow for air circulation.

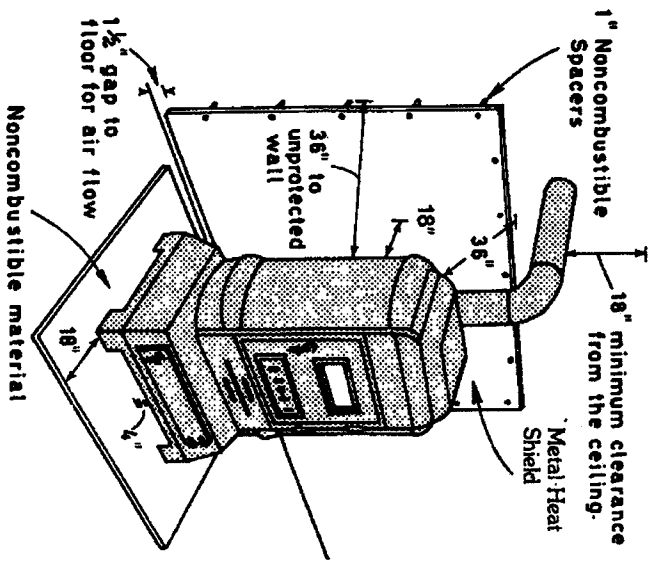
The heat-reflecting quality of bare metal is best for keeping heat away from the wall, but you can make a heat shield more attractive by painting it with a high-temperature paint. Also, a noncombustible veneer panel may be applied to the metal as long as you don't use glue. Most glues are combustible or don't hold up at high temperatures.

A Ventilated Brick Wall

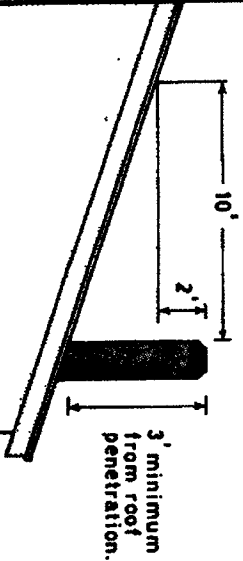
A nonventilated brick wall placed directly against a combustible wall will not offer any protection, but a brick wall with a 1- or 2-inch airspace behind it makes an excellent heat shield. Before you build the wall, check to be sure your floor can support the weight of brick. The wall must be 4 inches thick with the bottom and top courses of brick staggered for ventilation (Fig. 2). A strip of heavy-gauge steel can be used above the bottom course for extra support. Use corrugated-metal wall ties, one for every square foot of brick wall—about one every 9 inches on studs that are 16 inches apart. Again, do not use any ties directly behind the stove or connector because they will conduct too much heat to the wall. It is important to clean off the mortar overrun behind the wall to maintain an unobstructed airspace. ■



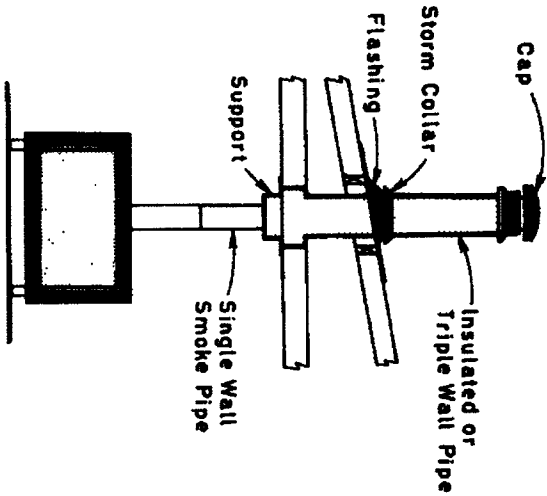
Stove Clearances



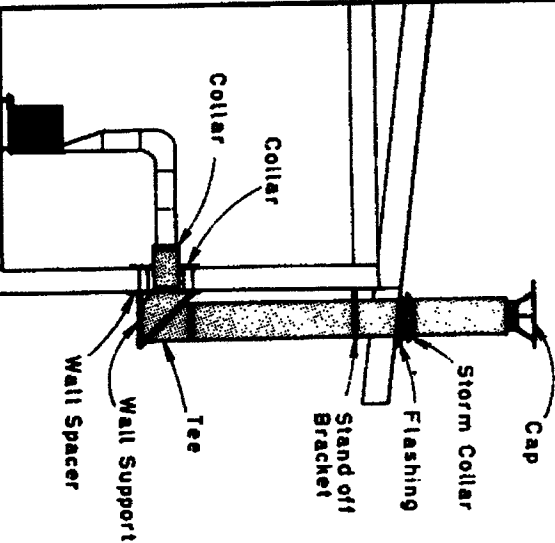
To prevent downdrafts and fire from sparks, chimney height must be at least 2 feet above any roof surface within 10 feet horizontally.



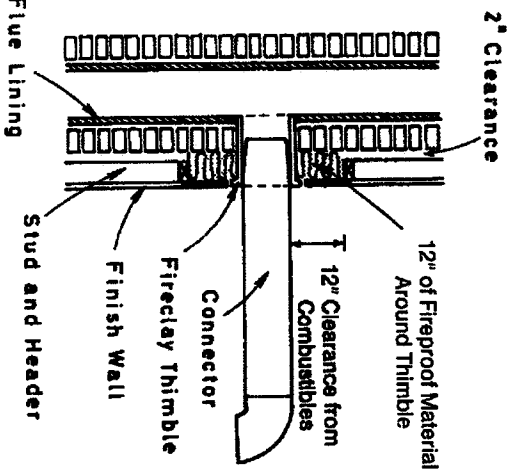
Prefabricated Chimney - Interior (Preferred) Installation



Prefabricated Chimney - Outside Installation



Chimney Connection



Per NFPA 211

FLOOR PROTECTION

UNLESS STOVE IS ON A CONCRETE FLOOR, THIS FLOOR PROTECTION IS REQUIRED

