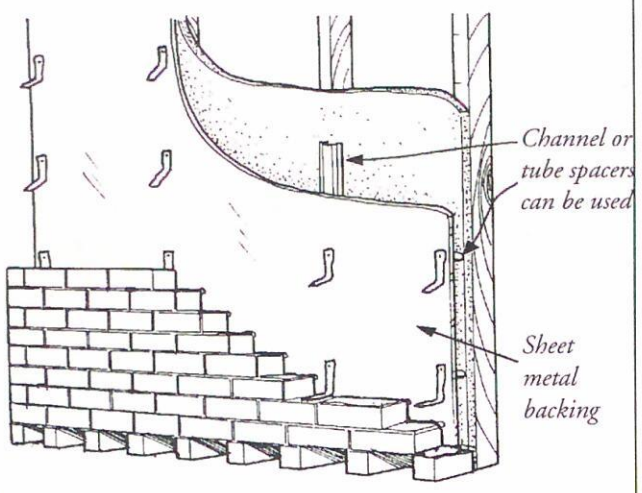

CONSTRUCTION OF A BRICK SHIELD WITH SHEET METAL BACKING

Steel backing for a brick shield should rest on the bottom course of bricks to ensure airflow behind the shield. If spacer channels rest on the floor or on the bottom course of bricks, be sure to ventilate them at the bottom so that air can flow through the channel. This type of shield construction provides a 67% reduction of clearance.

A more practical alternative to a solid brick shield is to use a commercial cement board (or equivalent) on which brick slices or tile can be mounted. The original cement board contained large amounts of asbestos, which can be a health hazard if its fibres are released into the air. Products similar to cement board are available that use safer reinforcing fibres. Make sure the board you select is either approved for the purpose or you are sure it contains no combustible material.

The glue used to mount brick slices or tile should, according to B365, "not loose adhesive qualities at temperatures likely to be encountered and not contribute a significant combustible load." Suitable glues may be specified by the supplier of the brick or tile. Glue manufacturer's instructions should indicate its characteristics and proper use. If you find a glue with the adhesive qualities you like but are unsure of its combustibility, test it yourself. Spread some on sheet metal and let it dry, then heat it with a propane torch. If it begins to flame, don't use it, but if it just darkens and dries out, it is probably fine for shielding systems.

In terms of the percentage reduction of clearance, not all air cooled radiation shields are created equal. Sheet metal is the most effective shielding material because of its ability to conduct heat across its surface. By dissipating heat quickly from hot spots directly behind the appliance, a sheet metal shield can safely handle more intense radiation. It also gives up its heat readily to the air flowing behind it.

While a sheet metal shield provides a reduction of 2/3 or 67% from the original clearance, a solid brick wall or tile mounted on non-combustible board provides only a 50% reduction. Brick and tile shields can get hot at the point of the most intense radiation, and the heat does not spread as quickly as it does in sheet metal. However, if a brick wall or tile/board composite shield is backed with sheet metal, the maximum clearance reduction of 67% is permissible.

Any air cooled radiation shield affords less protection when mounted on a ceiling than it would on a wall because convection air flow behind horizontal shields is far less effective. Sheet metal shields spaced out 21 mm (7/8") from ceilings give a 50% clearance reduction.

5.5 Commercial Shields

Commercial shielding systems are available that have been tested and labelled. These shields are performance tested, and may give more protection than site built shields. Some shields are certified for clearance reductions of up to 75%. Others may be mounted directly on a combustible surface with no air space. For these commercial shielding systems to perform as intended and meet code requirements, the installer must follow manufacturer's instructions exactly. Note that the shield extensions of 500 mm (20") above and 450 mm (18") beyond each edge required in B365 for site built shields may not necessarily apply to certified commercial shields. The test standard for commercial shielding systems is ULC S632.

5.6 Locating and Costing a Corner Installation

Many homeowners like the look of a space heater placed diagonally in the corner of a room. A corner installation provides several decor options and gives homeowners more freedom in room layout. A large proportion of corner installations call for wall shields because, if standard appliance clearances are used, too much floor area is taken up.

The calculation of shield size usually requires that you produce an accurate scale drawing, but this can be time