

The Beauty of Warming with Wood

small airtight stove that does not have the visual importance the room requires, the placement and materials used for installation can improve the visual balance.

The placement of the masonry can also make a difference in your enjoyment and use of the heat produced. For the masonry fireplace with a masonry chimney, some of the usable heat comes from the hot gases conducting heat through the chimney and in turn radiating heat from the surface. The heat is stored and released slowly, extending the time for heat gain from the fire. It is good common sense to make use of the heat gain from all sides by not building the chimney on an outside wall. Another consideration is to design this masonry mass as a passive solar heat storage unit as well as a chimney, and increase its usefulness. As sunlight passes through the window glass, its heat is trapped inside the room. If the sunlight strikes a masonry surface, the heat is absorbed and then slowly released as radiant heat. A chimney, fireplace or hearth could all act as this solar heat sink if placed correctly in the room.

Free-standing units will have direct radiation from all heated surfaces including the chimney or stove pipe (Figure 2). This energy release can be useful directly or can in turn be absorbed by masonry material used to fireproof the surrounding walls and floor. The slow

release of this heat extends the time warmth is received from the fire.

Construction Materials. The outside appearance of the wood-burning unit has a strong impact on room design. A wide variety of colors, textures and finishes are available.

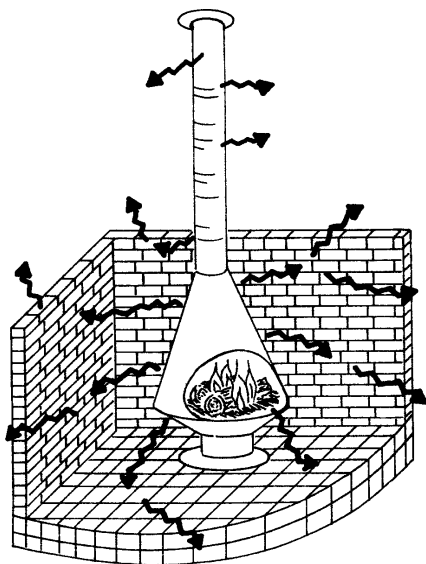
Non-combustible materials at least 6 inches wide must surround the fireplace opening at the sides and top and form a front hearth at least 20 inches deep. A free-standing unit must have non-combustible material between it and a wall if closer than 36 inches. It also should have floor protection extending 12 inches beyond the unit on three sides and 18 inches where the wood is added. Check local codes for exact requirements.

Table 1 indicates the tremendous variety of materials that can be used for construction and facing. For fireplaces, brick is probably the most popular material and the type of brick and the way it is laid in itself is so variant as to determine whether it is traditional or modern, formal or informal in appearance.

Wood paneling, although a combustible material, is often used for fireplace facing in combination with masonry materials. Many materials are now available in panel form that can simulate a masonry wall and provide a fire-resistant surface. These vary from thin photographic prints on a hardboard base to actual slices of bricks or stone. They can come in 4 x 8-foot sheets that you install as wall panels or individual pieces that you glue to the flat surface and “grout” in between. Manufactured materials are available to simulate most of the face materials listed. Check the literature carefully to determine the non-flammability and wearing quality of both the material and the method of adhesion. If you have questions, consult a competent builder or building inspector.

Hearth. The hearth is an area of masonry or other fire-proof material in front or beneath the fire opening designed to protect the floor from sparks and the heat of the fire. The hearth of a fireplace may be flush with the floor, raised or cantilevered. Sometimes a hearth is extended to accommodate a seating area or platform for other furnishings or sculpture. A raised hearth can

Figure 2. Take advantage of heat storage and radiation from chimney, stove pipe and masonry fireproofing material.



Materials		Finishes
BRICK	Sizes	Patterns
	Colors	Bonds
	Textures	Joints
	Glazed	Mortar
	Used	
CONCRETE	Standard	Floated
	Adobe	Brushed
	Exposed	Pre-cast
	Aggregate	
	Terrazzo	Hammered
STONE		Ground
	Marble	Polished
	Granite	Polished
	Limestone	Carved
	Boulders	Random
CERAMICS	Fieldstone	
	Split face	
	Quarry tile	Decorated
	Terra cotta	Metallic
	Glazed tile	Variegated
	Mosaic tile	Colors
	Glass	Sizes and shapes
		Textures
		Patterns

be designed to provide convenient wood storage. The materials used are usually the same as the facing materials with more attention paid to durability, smoothness and ease of cleaning, especially if this surface is walked on.

Loose non-combustible material can be used for this purpose if it is contained in some way. Smooth pebbles, rock chips and sand are examples. These materials would need to be replaced occasionally as they become soiled.

Free-Standing Fireplaces and Stoves. These units are available in a wide variety of materials. Because they become a prominent piece of furnishing in any room, consider design carefully (Figure 3). Many types are made primarily of metal; some are made of pottery, ceramic, tile or stone; some are made of glass. Many are constructed of combinations of these materials.

Two main construction categories are single wall and double wall. The single wall are generally of a heavier material such as cast-iron or formed pottery and

provide mostly radiant heat. The double walled stoves may be lighter weight material and heat primarily by convection. The layer of air between the two walls circulates through vents into the room. Some thin metal units are lined with fire brick or other absorbtive materials to act as a heat sink and to increase the life of the metal.

Metal Stoves. Most metal wood-burning stoves are made of sheet metal, plate steel, cast-iron or combinations of these. These materials are available in many finishes. To evaluate the materials you should consider your heating needs, the durability compared to cost and your personal aesthetic requirements.

Finishes. Some finishes are designed to increase the heat radiating surface, some to absorb heat for later slow release, some to prevent rust or surface deterioration and some are purely decorative (Figure 4).

- *Porcelain* is a durable heat-resistant surface fired

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- *Trim and handles* should be designed of heat resistant materials that can be handled when hot. These are usually made of porcelain or nickel plated coiled metal. (Chrome discolours from the heat.)

Some stove manufacturers advertise by stating their metal is a certain gauge. Gauge numbers vary inversely to thickness, so the smaller the gauge number, the thicker and heavier the metal. Some manufacturers will state the thickness of metal in fractions of an inch. Metal between 3 and 10 gauge – approximately between ¼- and 1/8- inch thick – would be satisfac-

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