

# Flashing materials

Some materials don't work with masonry

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**F**lashing directly affects how a masonry wall performs. Without it or with an inappropriate flashing, walls may leak or the flashing may corrode. All construction documents should specify the type of flashing and show its exact location.

Three types of flashing are available: sheet metals, plastics, or a combination of materials. A good flashing for masonry construction must be impervious to moisture and resist corrosion due to alkalis in the mortar. Tar papers (asphalt saturated felts) and

other asphaltic fiber flashing should not be used in masonry construction. They may not last long and they are easily punctured by a bricklayer's trowel.

## Sheet metals

Not all sheet metal flashings are suitable for masonry construction. Aluminum and lead are highly susceptible to corrosion when in contact with wet mortar. They should not be used in masonry walls.

*Zinc coated.* Metals galvanized with zinc coatings can be used in masonry construction, but are not highly recommended. Zinc, an effective galvanizing agent, protects the metal from corroding for a time, but eventually the zinc—and then the metal flashing—

—does corrode. Field handling and bending can crack the zinc film too. A minimum thickness for this type of flashing should be about 15 mils (0.38 mm). Its durability depends on the thickness of the zinc film. Flashing with thicker zinc coatings lasts longer.

*Copper,* on the other hand, is an excellent flashing material for masonry. It is moderately priced, a superb moisture barrier, and resists the alkalis in fresh mortar (Figure 1). It also is unaffected by low temperatures and rough handling.

Copper flashings are available in 3-ounce sheets. They usually are laminated on both sides with a dense film of polyethylene. This film adds waterproofing and a protective layer that eliminates staining of masonry that could occur if exposed copper were used. Unfortunately, placement and forming by hand is harder with copper sheets than with other types of flashing.

*Stainless steel* is an excellent flashing material too. It's impervious to moisture and resists chemicals well. Within a masonry wall, stainless steel lasts the life of the building.

In most cases, however, stainless

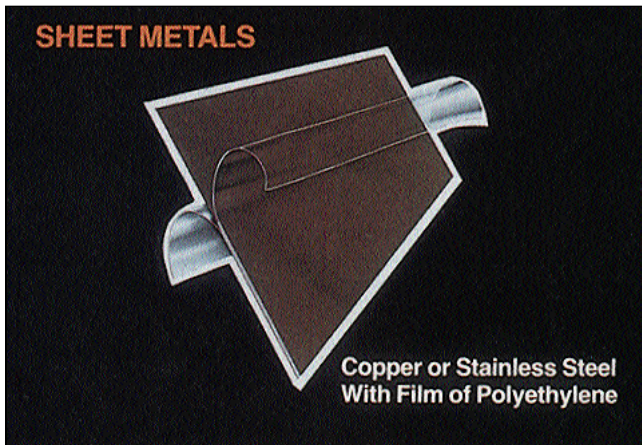


Figure 1. Although copper is a good flashing material, it can stain masonry. To prevent this, copper sheet metal is often coated with polyethylene.

## COST OF FLASHING MATERIALS

Material	Thickness	Cost per Square Foot (\$)
Polyvinyl chlorides	20 mil	0.17-0.21
Metal foil with fiberglass film	7 mil	0.70-0.80
Copper with creped kraft paper (one side)	2 oz.	0.80-1.20
	3 oz.	0.90-1.60
Copper with polyethylene	3 oz.	1.00
Copper-lead with creped kraft paper (both sides)	2 oz.	1.00
	3 oz.	1.35
Asphalt-coated copper (both sides)	2 oz.	1.25-1.35
	3 oz.	1.35-1.85
Stainless steel	26 gauge (smooth)	4.00
	26 gauge (deformed)	4.35
	28 gauge (smooth)	3.75
	28 gauge (deformed)	4.00

Note: These costs were quoted by suppliers in the Chicago area and are subject to change.

steel flashing must be preformed. This can create placement problems due to variances in construction tolerances. Stainless steel flashings also are the highest priced of all flashing materials (see table). They are available in 10 mil (0.25 mm) sheets, although thicker sheets are often used.

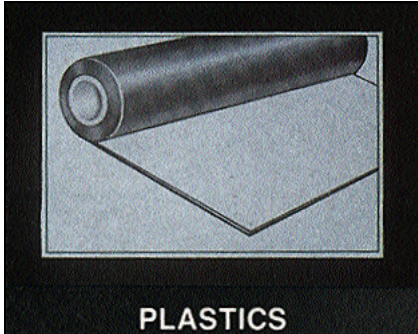


Figure 2. Polyvinyl chloride flashing is commonly used and is inexpensive. It must be completely covered, though, because ultraviolet light deteriorates it.

## Plastics

Plastic flashings are probably the most widely used today. They cost less than other flashing materials and most of them are tough, flexible, and resilient. Some plastic flashings, however, have deteriorated severely when embedded in masonry.

One type of plastic flashing is a polyester membrane that is 6 mils (0.152 mm) thick. The manufacturer says it is highly resistant to corrosion, water permeance, and extreme temperatures. It is a semi-rigid plastic, though, which makes it difficult to bend around corners.

The most widely used plastics are

polyvinyl chlorides (PVC) (Figure 2). They are homogeneous, waterproof, impermeable sheets that remain flexible and crack-free at -20° F. Because they deteriorate rapidly when exposed to ultraviolet light, however, PVC plastics must be concealed in masonry walls. They're not attacked by the alkalies in masonry mortars and they are easy to form. A thickness of at least 20 mils (0.5 mm) should be used.

## Combination materials

Combining different materials can

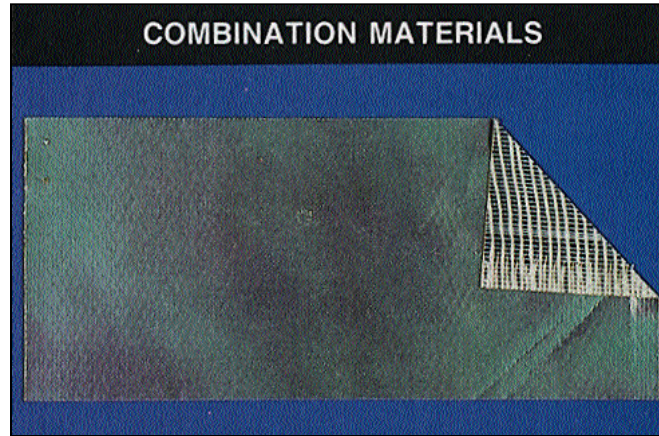


Figure 3. By combining materials, such as metal foil, glass fiber reinforcement, and plastic, many manufacturers have produced good masonry flashing materials that are moderately priced.

produce a moderately priced flashing with good properties. Some of the most common flashing combinations are sheet metals coated with a flexible compound.

One type combines glass fiber or a cotton fabric with a bituminous compound that is bonded (using heat and pressure) to a 1- to 3-ounce sheet of copper or a combination of copper and lead sheets. This forms a waterproof membrane that resists alkalies and acids. Another type of flashing consists of textured, waterproofed, creped

kraft paper bonded to copper or lead sheet metals with asphalt and reinforced with glass fiber.

These types of combination flashings have life spans similar to those of sheet metal flashings. They are durable, but forming corners can be difficult because of their overall thickness. (The thickness depends on the weight of copper or lead.)

A third type of combination flashing is made of a metal foil coated with a polyester film that is reinforced with a glass fiber mesh (Figure 3). The man-

ufacturer says the material is waterproof, durable, unaffected by caustic chemicals or low temperatures, and relatively easy to form. It's available in 7 mil (0.178 mm) thickness at a moderate to low price.

A small part of total costs

Flashing is a very small part of total masonry wall costs. So don't try to reduce construction costs by using an inexpensive flashing that doesn't last. The building will suffer a lot more water problems if you do.