CHOOSING Flexible Flashings

To ensure weathertight window and door installations, keep a roll of flashing membrane handy

by Martin Holladay

In recent years, builders have been paying more attention to the importance of keeping water out of walls. News of construction-defect lawsuits in California, EIFS failures in North Carolina, and the "leaky condo" crisis in British Columbia have all driven home the point that leaking buildings can cause major headaches for builders. One result of the focus on waterproof walls is the growing use of peel-and-stick membranes and other types of flexible flashing.

The term "flexible flashing" is used to describe a broad category of nonmetallic flashings, including both peel-and-stick and nonstick flashings. Manufacturers have not yet agreed on a generic term for these products, which are referred to as self-adhering bituminous tapes, flashing tapes, waterproofing tapes, flexible window flashings, flashing membranes, and wall tapes.

Only in the past few years have these flashings become common on residential job sites. Flexible flashing is rapidly replacing traditional felt splines for sealing the perimeter of finned windows. Some flexible-flashing manufacturers promote the use of these products at other locations, as well: to cover below-grade concrete cracks, at roof penetrations, under exterior door sills, over deck ledger boards, at inside and outside corners of wall sheathing, under stucco shelves and parapets, and over sections of wall sheathing susceptible to splashback. But by far the most common use of flexible flashing is at window and door perimeters.

These new materials have some significant advantages over traditional flashing materials. Unlike most metal flashings, for example, peel-and-stick flashings conform easily to unusual shapes. Most types of flexible flashing

can be folded to form a waterproof end-dam on a rough windowsill, where making the same shape with copper would require soldering the flashing at the corners. Manufacturers claim that peel-and-stick flashings, unlike metal flashing, can form a waterproof seal between the flashing and the substrate.

These flashings are versatile and easy to install. But before slapping peel-and-stick over every exterior crack, you need to be sure you've chosen the right product for a given application. It's also important to know about potential compatibility problems and to avoid accidentally creating a wrong-side vapor barrier.

Figure 1. Self-adhering rubberized-asphalt flashings are made of the same material as the eaves membranes used to prevent ice dam leaks.

Figure 2. Rubberized-asphalt flashings, like Grace's Vycor Plus, stick well to unprimed plywood. Some manufacturers of rubberized-asphalt flashings warn that adhesion to OSB can be difficult unless the OSB is first primed.

Figure 3. Since foil-topped flashings like Peel'N'Stick from Polyguard Products can be left exposed to the weather for a longer period than polyethylene-topped flashings, they are a good choice when siding installation may be delayed.

Rubberized Asphalt

Most peel-and-stick flashings are made from rubberized asphalt, also known as modified asphalt, modified bitumen, or rubberized bitumen. Rubberized-asphalt membranes were originally developed to protect roofs from ice dams. As builders recognized new uses for the product, several manufacturers began selling it in narrow rolls — typically between 4 and 12 inches wide — for a variety of flashing applications (Figure 1).

Rubberized asphalt used for flashing is made by modifying asphalt with styrene butadiene styrene (SBS), which makes the asphalt more rubber-like. SBS-modified asphalt, being elastic, can accommodate thermal expansion and contraction in building components. Because of its "cold flow" characteristics, rubberized asphalt can also seal around fastener penetrations.

Sticky stuff. As long as the surface is clean and warm, rubberized asphalt sticks to a wide variety of substrates: dimensional lumber, plywood, steel, aluminum, hard vinyl, asphalt felt, and plastic housewrap (Figure 2). Some manufacturers of rubberized-asphalt flashing advise that their products may not stick well to concrete, masonry, or OSB unless these substrates are first primed.

To make it possible to handle such a sticky substance, one side of the rubberized asphalt is laminated to a thin sheet (usually about 8 mils) of cross-laminated high-density polyethylene, and the other side is protected with a siliconized paper release sheet. Instead of polyethylene, some manufacturers laminate a thin layer of aluminum foil to the top of their rubberized-asphalt flashings (Figure 3).

Stickiness is a double-edged sword. In warm temperatures, when rubberized asphalt is at its stickiest, it can be impossible to readjust a flashing once it has touched a surface.

Keep it covered. Rubberized-asphalt flashings, except for those laminated with aluminum foil, should not be left

exposed to the weather. Eventually, ultraviolet light breaks down the polyethylene, exposing the modified asphalt, which then begins to oxidize. Most manufacturers recommend that their flashings be covered within 30 days of installation, although one manufacturer, Protecto Wrap, says that its BT20XL Building Tape can be left exposed for up to 120 days.

Butyl Rubber

Several manufacturers make peel-and-stick flashings from butyl, also called butyl rubber (Figure 4). Butyl flashings are usually black, resembling their rubberized-asphalt cousins. However, butyl flashings lack the asphalt smell that distinguishes rubberized-asphalt products, and they feel more rubbery. Like rubberized-asphalt flashings, butyl flashings are available with a top surface of either polyethylene or aluminum foil. Those with a top surface of polyethylene should not be left permanently exposed to the weather. FlexWrap, a butyl flashing from DuPont, has a top layer of corrugated Tyvek that enables it to conform to curved shapes, like the heads of arch-top windows.

In general, butyl flashings cost about twice as much as rubberized-asphalt products (see "Flexible Flashing Costs"). However, DuPont's FlexWrap is significantly more expensive than other butyl flashings; it costs about six times the price of the average rubberized-asphalt product. Manufacturers claim that butyl has several advantages over rubberized asphalt: longer-lasting stickiness, less staining, less high-temperature oozing, and a wider temperature range for installation.

Butyl rubber has a reputation for long-lived tackiness: One *JLC* editor has 21-year-old butyl glazing tape in his greenhouse that is still as pliable and tacky as the day it was installed. Jeff Winzeler, product manager for the roofing adhesive group at Ashland Chemical Co. in Columbus, Ohio — a manufacturer of EPDM and butyl tapes — says, "Compared to SBS-modified asphalt, butyl is a more high-performance adhesive, with the ability to adhere to difficult surfaces, and is much more weatherproof." Although butyl's bond is aggressive, it is slower acting than the bond of rubberized-asphalt products. Butyl manufacturers tout this as an advantage, because it allows readjustment of the flashing during installation.

Although rubberized asphalt can be formulated for low-temperature installation, butyl flashings, on average, can be applied at colder temperatures than most rubberized-asphalt flashings.

Butyl laminated with EPDM. Some butyl flashings are laminated to a top layer of EPDM to make a type of flexible

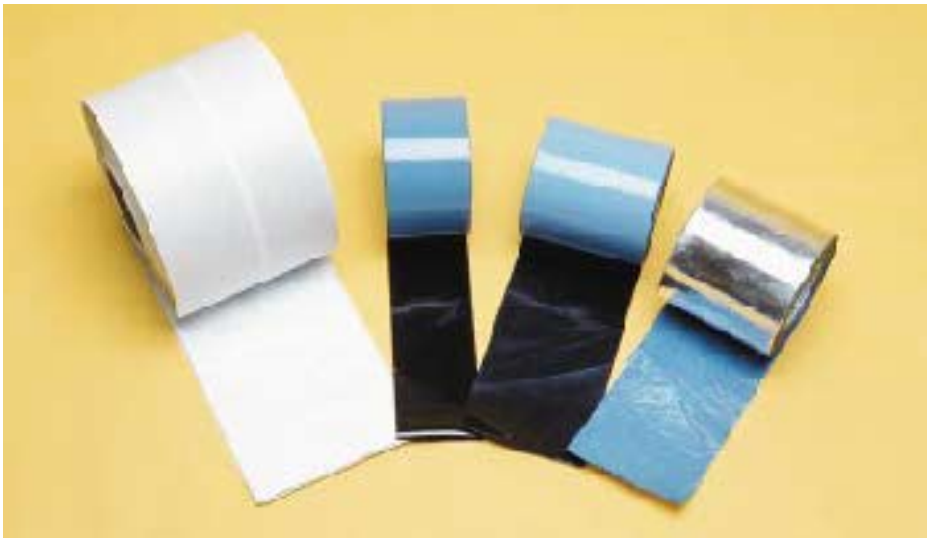
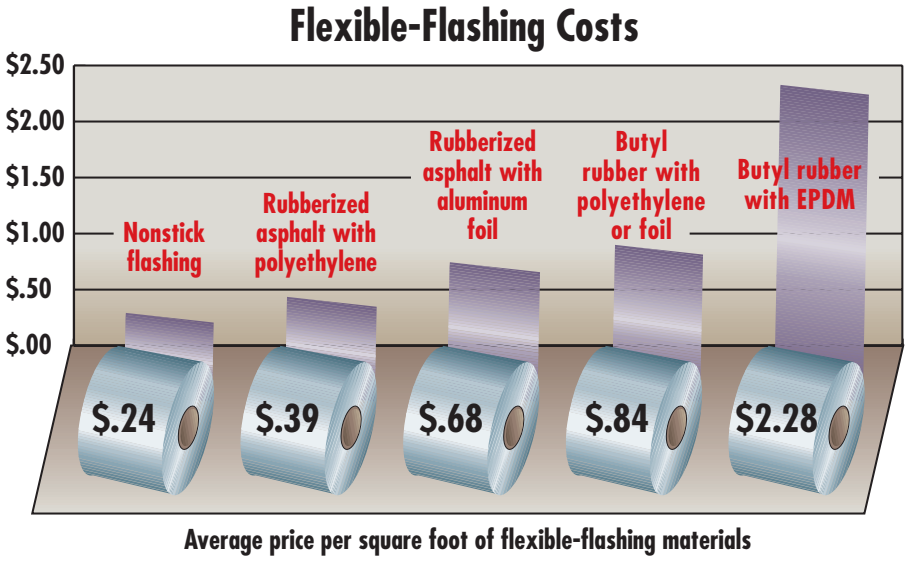


Figure 4. Self-adhering butyl flashings, like rubberized-asphalt flashings, can have a top layer of either polyethylene or aluminum foil. Butyl flashing, although more expensive than rubberized-asphalt flashings, can be installed over a wider temperature range.



Using Flexible Flashing

- Self-adhering flashings are particularly useful under windowsills and door thresholds, over deck ledger boards, and at horizontal projections and parapet walls that will be finished with stucco.
- To flash window and door perimeters, asphalt felt splines, nonstick products like Moistop, or self-adhering flashing can be used. Flashings should always be lapped to shed water.
- On wall sheathing, limit the use of self-adhering flashing to small areas in order to avoid creating a wrong-side vapor barrier.

flashing called cover tape or flashing tape (Figure 5). EPDM, a rubbery membrane used for roofing, is very resistant to weather exposure. Because EPDM flashings are relatively expensive — costing about six times as much as the average rubberized-asphalt flashing — they are rarely used anywhere except on roofs, where the ability to resist ultraviolet light is essential. Where a peel-and-stick flashing will be covered by siding or otherwise protected, weather resistance is not an issue and using an EPDM flashing would be overkill.

Moreover, EPDM flashings are so thick (usually about 70 mils) that they would be awkward to use under siding. Rubberized-asphalt flashings are typically much thinner — between 20 and 40 mils thick — and are therefore easier to fold and tuck.

Variations on a Theme

Although most peel-and-stick flashings have a top layer of polyethylene, some are topped with aluminum foil. A few manufacturers sell flexible flashings that are not self-adhering and require the use of fasteners (Figure 6).

Foil-faced flashings. Flashings that are topped with a thin layer (2 mils) of aluminum foil can be left exposed to the weather. These flashings, which include an adhesive layer of either butyl or rubberized asphalt, are promoted for a variety of uses, including repair of roof-top ducts, metal chimneys, gutters, and trucks.

Because the long-term durability of these flashings is open to question, their use is usually limited to temporary roof repairs. One manufacturer, Tyco Adhesives, recommends its aluminum-foil flashing, Polyken 626-20 Window Flashing Tape, for use at window perimeters. If siding installation is delayed, even for many months, the aluminum foil layer will still protect the flashing from deterioration.

Nonstick flashings. At least two manufacturers make nonstick flexible flashings designed to be attached with staples or nails. Although nonstick flashings may appear unsophisticated compared to peel-and-stick products, they have their advocates. Some building-science experts feel that using a nonstick flashing (or even plain asphalt-felt splines) is preferable to using peel-and-stick flashings, which may be more likely to trap moisture in wall assemblies.

MFM's Future Flash is a nonstick flashing made from rubberized asphalt sandwiched between two films, a bottom layer of polyethylene and a top layer of metalized polyester. According to the manufacturer, Future Flash behaves better in very hot temperatures than most rubberized-asphalt flashings, because the metalized polyester layer helps reflect sunlight.

Fortifiber's nonstick flashing, called Moistop, is a relatively thin, 12-mil flashing made from kraft paper laminated with two layers of polyethylene and one layer of fiberglass reinforcement. Moistop is inexpensive — about one-third the cost of the typical rubberized-asphalt product. Moistop shouldn't be used on windowsills, since the manufacturer warns that it is not intended for horizontal use. One disadvantage is that unlike Future Flash or other rubberized-asphalt flashings, Moistop can't seal around fastener holes. Moistop is also available in a version called E-Z Seal, which includes a narrow band of

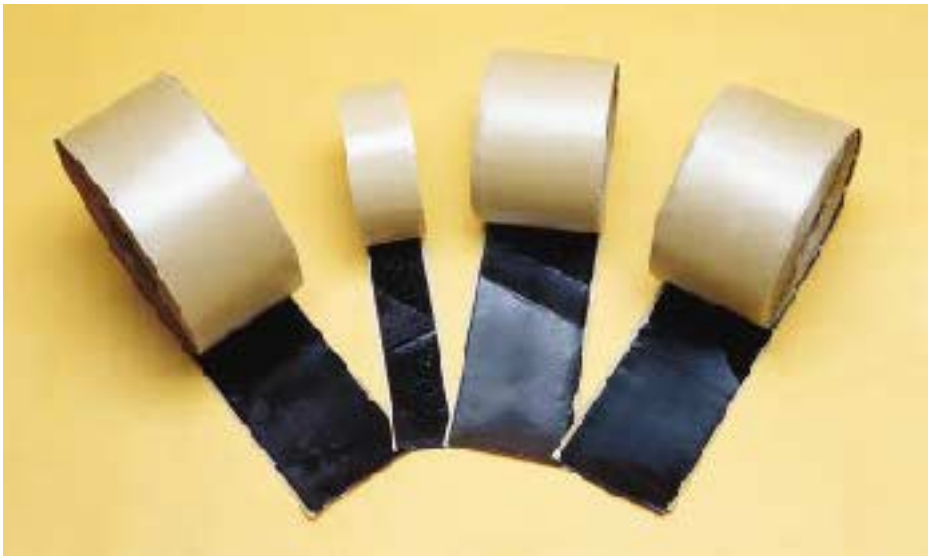


Figure 5. Butyl flashings with a top layer of EPDM are called cover tape or flashing tape and are commonly used to flash single-ply roofs. The EPDM layer protects the butyl from degradation by ultraviolet rays.

peel-and-stick adhesive along one side of the flashing.

Choosing the Right Flashing

Not surprisingly, manufacturers are eager to promote their flexible flashing products for a wide variety of applications. But not all manufacturers recommend the same applications, so it's important to read the installation instructions. Some manufacturers recommend using their products below grade or on roofs, while others specifically exclude those applications. In general, manufacturers of heavier 35-mil and 40-mil flashings are more likely to recommend roof or below-grade use than manufacturers of 20-mil products.

Thickness. Flexible flashings vary in thickness from 12 mils (Fortifiber's nonstick Moistop) to 79 mils (Illbruck Vapor Barrier Stucco Tape). Most self-adhering window and door flashings range in thickness from 20 mils to 40 mils. A thicker flashing may be more durable and better able to withstand abuse, but thinner flashing is easier to fold and conform to unusual shapes.

Hot locations. In very hot locations, butyl products are probably a better choice than rubberized asphalt, which can ooze at high temperatures. Oozing can occur when rubberized-asphalt flashing is installed under metal exposed to sunlight — for example, under metal roofing or on the nailing fins of south- or west-facing aluminum-clad windows. Grace Construction Products specifically prohibits the use of its Vycor Plus flashing in "hot desert areas in the Southwestern U.S." Similarly, Carlisle Coatings warns that its product, Window and Door Flashing, is "not recommended in areas where flashing will be subject to continuous exposure to sunlight or to temperatures in excess of 180°F."

Cold-weather installation. Trying to install a peel-and-stick flashing on a cold wall can be frustrating. Both rubberized asphalt and butyl become less sticky as the temperature drops, and below 40°F some products just won't stick. One manufacturer, Ridglass Manufacturing, ships different formulations of their Kwikwrap rubberized-asphalt flashing at different times of the year, with varying formulations to produce different levels of low-temperature stickiness. Unfortunately, there is no way to tell from the Kwikwrap label which product your local distributor has in stock.

The minimum application temperatures provided by flashing manufacturers vary from 10°F to 50°F (see "Flexible Flashing Specifications," next page). These recommendations should be taken as a guide, not a guarantee. An installer can push the minimum application temperature somewhat by storing the flashing in a warm location before use.

In consistently low temperatures, the best flexible flashing may be a nonstick flashing like Fortifiber Moistop or MFM Future Flash. Since these products are attached with fasteners, stickiness is not an issue. If you need a cold-weather self-adhering flashing, it's probably best to choose either a butyl product or Bakor Blueskin Weather Barrier, a rubberized-asphalt flashing that performs well at low temperatures. In a pinch, any flashing can be held up with roofing nails.

Compatibility problems. If you're using a flexible flashing anywhere near an asphalt product, it's best to choose a rubberized-asphalt flashing, because butyl flashings are incompatible with asphalt products. "There are oils that want to come out of the asphalt," says Jeff Winzeler. "The butyl will suck them up and lose its adhesive properties."

Tyco Adhesives' instructions for installing one of its butyl flashing products, Polyken 627-35, warns, "Avoid contact with residuary asphaltic products such as coatings and other roofing products." A Tyco representative confirmed that its butyl flashings shouldn't be in contact with asphalt roofing cement. Since Tyco promotes the product for use on roofs, where asphalt roofing cement is often found, installers must be vigilant to avoid compatibility problems.

The jury is still out on whether butyl tapes should be allowed contact with asphalt felt. "If you are talking about 15-pound felt, there is not a lot of asphalt, because felts are relatively dry," says Winzeler. "You'll probably have fewer issues with compatibility than with roofing cement. But until you test, you can't be sure." When Theresa Weston, a chemical engineer at DuPont, was asked whether DuPont's butyl tape, FlexWrap, is compatible with asphalt felt, she was noncommittal. "We're still testing it," she said.

Rubberized asphalt is incompatible

Figure 6. Not all flexible flashings are self-adhering. Future Flash from MFM Building Products (left) and Moistop from Fortifiber (center) are nonstick flashings that are installed with fasteners. Fortifiber's Moistop E-Z Seal (right) is similar to regular Moistop, but includes a 3-inch-wide adhesive band along one side of the flashing.

with some types of flexible vinyl, especially vinyl flashings that come in a roll. It doesn't appear to have any compatibility problems with hard vinyl, like the vinyl used for window fins.

Watch out for staining. Rubberized asphalt, like other asphalt products, can stain some materials, especially vinyl. According to Bob Sims, customer service manager at Bakor, such staining, called plasticizer migration, occurs when oils in the asphalt dissolve plasticizers in the vinyl. Since rubberized-asphalt flashings shouldn't be left exposed, staining is generally not a problem. The siding or other material used to cover the flashing usually hides any stains.

Installing Flexible Flashing

On most job sites, peel-and-stick flashings are installed without a lot of fuss. Typically, the flashing is cut to length, the release paper is removed, and the flashing is pressed in place by hand (Figure 7, page 54). But the easy way may not be the right way. Some manufacturers recommend that substrates should be primed before installing their peel-and-stick flashing, and that pressure should be applied with a roller, not the palm of the hand.

Is a primer necessary? Self-sticking flashings often adhere better to a primed surface than an unprimed surface. Manufacturers that recommend priming generally focus on concrete

Flexible Flashing Specifications

	Price per Square Foot	Thickness	Available Widths (inches)	Min. Application Temperature	Priming of Substrate Required?	Roller Required for Installation?	Maximum Exposure Time
Rubberized Asphalt/Polyethylene							
Bakor Blueskin Weather Barrier	$0.80	25 mils	4, 6, 9	10º F	Recommended	Yes	42 days
Carlisle CCW-705 Window and Door Flashing	$0.44	40 mils	4, 6, 9, 12	25º F	Only for concrete, masonry, and some exterior gypsum	No	30 days
Dur-O-Wal Polytite PolyBarrier	n/a	40 mils	12, 18, 24, 36	25º F	Priming may be necessary	Yes	
Fortifiber FortiFlash	$0.29	25 and 40 mils	4, 6, 9, 12, 36	40º F	No	No	Cover as soon as possible
Grace Vycor Plus	$0.61	25 mils	4, 6, 9, 12	25º F	Only for concrete and masonry	No	30 days
Grace Vycor Weather Barrier Strips	n/a	40 mils	6, 9, 12	40º F	Only for concrete and masonry	No	30 days
Master Wall Weather Stop Flashing Tape	n/a	n/a	n/a	45º F	Yes	Yes	42 days
MFM Sub Seal	$0.40	45 mils	4, 6, 9, 12, 18, 36	50º F	Only for concrete, masonry, and OSB	Yes	45 days
MFM Window Wrap (polyester top)	$0.30	25 mils	3, 4, 6, 9, 12, 18	50º F	Only for "some wood composition panels as well as dirty, dusty or weathered surfaces"	Recommended	90 days
NEI Advanced Composite Homeseal	$0.32	30 mils	4, 6	40º F	Only for concrete and masonry	Yes	30 days
Polyguard WindowSeal	$0.24	20 mils	4, 6, 9, 12, 18, 36	45º F	Only for OSB	No	30 days
Protecto Wrap BT20XL Building Tape	$0.24	20 mils	4, 6, 9, 12	45º F	Only for concrete, masonry, Dens Glas Gold, and some OSBs	Yes	120 days
Ridglass Kwikwrap	$0.39	40 mils	4, 6, 9, 12, 36	40º F	No	Recommended	30 days
Sandell Presto-Seal	$0.42	40 mils	6, 12, 18, 24, 36	25º F	Yes	Yes	n/a
Tamko Moisture Wrap	$0.45	40 mils	4, 6, 9, 12	30º F	Recommended but not required for concrete and masonry	Recommended	n/a
Tremco Sealants Window/Door Wrap	n/a	20 and 40 mils	4, 6, 36	No limitation	Only for OSB	Yes	n/a
W.R. Meadows Sealtight Air Shield	$0.21	40 mils	4, 6, 9, 12, 16	25º F	Yes	No	n/a
Rubberized Asphalt/Aluminum Foil							
Illbruck Weather Barrier Tape	$0.73	41 mils	2, 3, 4, 6	41º F	Only for porous or wet surfaces	Yes	No limitation
MFM Peel & Seal	$0.73	50 mils	3, 4, 6, 9, 12, 18, 36	55° F	Only for OSB	Yes	No limitation
Polyguard Peel 'N' Stick	$0.70	45 mils	4, 6, 9, 12, 18, 36	45º F	No	Yes	No limitation
Ridglass Kwiksilver	$0.56	60 mils	2, 4, 6, 9	40º F	Only for concrete and some gypsum sheathings	No	No limitation

and masonry as the most problematic surfaces, partly because those surfaces can be dusty or damp. Other manufacturers specify that OSB and gypsum sheathing need to be primed, and a few recommend priming metal and plywood. Most manufacturers agree that in cold weather, a self-sticking flashing will adhere better to a primed than an unprimed surface. There is a Catch-22, though: When it's too cold for peel-and-stick, it may also be too cold to apply primer.

In any case, few residential builders are likely to take the time to prime plywood or OSB sheathing before using peel-and-stick, which is one reason some manufacturers omit the recommendation. If you do decide to prime, remember to use the primer recommended by the flashing manufacturer, since the wrong primer may cause compatibility problems.

Hand pressure or roller? Many, but not all, manufacturers recommend that their flexible flashing should be installed with a steel or hard-rubber J-roller — the same type of roller used for gluing plastic laminate countertops. Many manufacturers' reps admit that this recommendation is widely ignored, but doing so carries some risk: When it comes to priming and using a roller, the bottom line is that builders who deviate from a manufacturer's recommendations can't expect any

Flexible Flashing Specifications

	Price per Square Foot	Thickness	Available Widths (inches)	Min. Application Temperature	Priming of Substrate Required?	Roller Required for Installation?	Maximum Exposure Time
Butyl Rubber/Polyethylene							
DuPont Tyvek FlexWrap	$2.70	40 to 80 mils	8, 10	40º F	No	No	120 days
Illbruck Vapor Barrier Stucco Tape	$2.00	79 mils	2, 4, 6	41º F	Only for concrete, plaster, steel, dimensional lumber, and rough glass	Yes	90 days
MFM Butyl Window Wrap	$0.38	20 mils	4, 6, 9	25º F	No	Yes	n/a
Tyco Polyken 627-20 Window Flashing Tape	$0.28	20 mils	4, 6, 9	25º F	No	Yes	30 days
Tyco Polyken 627-35 Flashing Tape	$0.92	35 mils	3, 6, 9, 12	25º F	No	Yes	30 days
Tremco Sealants Tremlite Polyfoil	n/a	35 mils	4	40º F	No	Yes	No limitation
Butyl Rubber/Aluminum Foil							
Tyco Polyken 626-20 Window Flashing Tape	$0.38	20 mils	4, 6, 9	25º F	No	Yes	No limitation
Tyco Polyken 626-35 Foilastic Flashing Tape	$1.08	35 mils	2, 3, 4, 6, 9, 12	25º F	No	Yes	No limitation
EPDM Flashings							
ADCO ET-553 flashing tape	$2.14	n/a	6, 12	n/a	n/a	n/a	No limitation
Ashland Plioseal cover strip	$1.90	65 mils	5, 6, 7, 9, 12, 18	–20º F	Yes	Yes	No limitation
Ashland Plioseal flashing tape	$1.90	70 mils	5, 6, 7, 9, 12, 18	–20º F	Yes	Yes	No limitation
Avenco American Super Bond cover tape	$2.04	n/a	6, 9, 12	n/a	n/a	n/a	
Avenco American Super Bond flashing tape	$2.20	n/a	6, 12	n/a	n/a	n/a	No limitation
Geocel 9906 Flashing Tape	$3.50	70 mil	6	No limitation	May be required	No	No limitation
International Diamond Systems flashing tape	n/a	70 mils	6, 12	n/a	n/a	n/a	No limitation
Tremco Sealants uncured EPDM flashing	n/a	70 mils	6, 9, 12	No limitation	n/a	Yes	No limitation
Tremco Sealants cured EPDM cover strip	n/a	65 mils	6, 9, 12	No limitation	n/a	No	No limitation
Nonstick Flashings							
Fortifiber Moistop	$0.11	12 mils	6, 9, 12, 18	No limitation	No	No	Cover as soon as possible
MFM Future Flash	$0.29	25 mils	4, 6, 9, 12, 18, 36	No limitation	No	No	60 days
Other							
Fortifiber Moistop E-Z Seal	$0.32	35 mils	4, 6, 9, 12	40º F	No	No	Cover as soon as possible

Figure 7. Builders use a variety of methods for flashing windows. This installer has chosen a belt-and-suspenders approach, installing strips of FortiFlash, a rubberized-asphalt flashing, on top of strips of E-Z Seal, a kraft-paper flashing laminated with polyethylene and fiberglass reinforcement.

Figure 8. Peel-and-stick flashing adheres poorly to dirty substrates or when applied in cold weather.

support from the manufacturer if something goes wrong.

Use With Care

Despite the versatility of flexible flashings, they have their limitations and must be used with common sense. Some builders have reported adhesion problems with peel-and-stick. Others note that too much peel-and-stick can create a wrong-side vapor barrier.

How tacky? Peel-and-stick doesn't always stick. "I've been to sites where I've seen the peel-and-stick already half falling off the housewrap," says Patricia McDaniel, owner of Boardwalk Builders in Rehoboth Beach, Del. Poor bonding can be due to a variety of factors, including low temperatures and dirty substrates (Figure 8). Manufacturers agree that the adhesive bond of peel-and-stick flashings varies over time. Initially, for the first month or so, the bond should actually get stronger. But no one really knows when, if ever, the bond strength may begin to fail.

Building scientist Joe Lstiburek urges caution. "A problem with these membranes is that they can peel away," says Lstiburek. "Don't rely on the adhesive property for waterproofing."

In an informal *JLC* test, 21 different peel-and-stick flashings were bonded to wood for 14 hours. About half of them failed to make a waterproof seal. Although further curing might have resulted in a waterproof bond, the test shows the need for caution when depending on an adhesive alone to seal out water.

Wrong-side vapor barrier. Peel-and-stick membranes should be used sparingly on wall sheathing, since they can create a wrong-side vapor barrier. "If you put a big hunk of peel-and-stick on the sheathing, interior moisture can condense behind it, causing rot," says Lstiburek. "It doesn't happen very often, but it happens occasionally. You've got to be careful not to get slap-happy with the stuff."

Several builders in British Columbia report finding sheathing rot behind peel-and-stick membranes, especially at window heads. But most investigators say that an important contributing factor in these cases was the use of damp framing lumber, and there don't appear to be any reports of such problems in other parts of North America. In fact, manufacturers of peel-and-stick membranes confidently recommend their use at window heads. "Clearly, vapor is an issue," says Rick Scruggs, technical service specialist at Grace Construction Products, a manufacturer of rubberized-asphalt flashing. "We wouldn't like to see you cover the whole wall, unless there are provisions for the vapor to get out. But if just a narrow strip of membrane is used around a window, the vapor can escape from other areas."

Many peel-and-stick manufacturers recommend the use of their products under siding at areas subject to splashback. However, because of the wrong-side vapor barrier problem, such an application is controversial. "The use of self-adhering membrane at splashback areas concerns me greatly," says Bob Switzer, chair of the Canadian Home Builders Association of British Columbia. "You are far better off finding ways to prevent the splash, like replacing the soil with lava rock."

Yet many builders confidently use peel-and-stick to protect sheathing from splashback. "We use it at the splashback area all the time," says McDaniel. "I think you are much more likely to get water into a structure with bad flashing details than vapor problems, at least in our climate."

Over or under the housewrap? One debate that won't be settled soon is whether peel-and-stick should be applied directly to the sheathing or is best applied to the housewrap or felt. There are strong advocates for both positions.

Some manufacturers recommend that their peel-and-stick membrane should be applied directly to the sheathing. "In general, the membrane should be adhered directly to the wall sheathing, and not to a layer of felt or housewrap. What's the value of the membrane if it can't be fully adhered to the substrate to prevent water from getting behind it?" says Scruggs. McDaniel agrees. "Installing housewrap and then slapping windows in and then attaching peel-and-stick to the housewrap doesn't do anything," she says.

By contrast, builders who are worried about a wrong-side vapor barrier prefer to see a layer of building paper or housewrap between the sheathing and the peel-and-stick. "Rarely do I apply a piece of peel-and-stick directly to sheathing," says Randy Faustmann, president of Rainforest Envelope Protection Services, a consulting firm in Langley, B.C. "Usually, it is installed over the building paper. I think that having the layer of paper between the peel-and-stick and the sheathing allows a little bit more drying than it would without it."

No matter how you assemble your sandwich of flexible flashing, nailing fins, and building paper, everyone agrees on one point: Lap all the layers to shed water. "You have to lap your layers, because at some point the glue's going to give," says McDaniel. "Physics is going to win over chemistry."

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Flexible Flashing Manufacturers

Rubberized Asphalt/Polyethylene

Bakor
800/387-9598
www.bakor.com

Carlisle Coating & Waterproofing
800/338-8701
www.carlisle-ccw.com

Dur-O-Wal
877/851-8400
www.dur-o-wal.com

Fortifiber
800/773-4777
www.fortifiber.com

Grace Construction Products
800/444-6459
www.graceconstruction.com

Master Wall
800/755-0825
www.masterwall.com

MFM Building Products
800/882-7663
www.mfmbp.com

NEI Advanced Composite Technology
800/998-4634
www.nei-act.com

Polyguard Products
800/541-4994
www.polyguardproducts.com

Protecto Wrap
800/759-9727
www.protectowrap.com

Ridglass Manufacturing Co.
888/743-4527
www.ridglass.com

Sandell Manufacturing Co.
800/283-3888
www.sandellmfg.com

Tamko Roofing
800/641-4691
www.tamko.com

Tremco Sealants
800/321-7906
www.tremcosealants.com

W.R. Meadows
800/825-5976
www.wrmeadows.com

Rubberized Asphalt/Aluminum Foil

Illbruck Sealant Systems
800/438-0684
www.willseal.com

MFM Building Products
800/882-7663
www.mfmbp.com

Polyguard Products
800/541-4994
www.polyguardproducts.com

Ridglass Manufacturing Co.
888/743-4527
www.ridglass.com

Butyl Rubber

DuPont
800/448-9835
www.dupont.com/tyvek/construction

Illbruck Sealant Systems
800/438-0684
www.willseal.com

MFM Building Products
800/882-7663
www.mfmbp.com

Tremco Sealants
800/321-7906
www.tremcosealants.com

Tyco Adhesives
800/258-1760
www.tycoadhesives.com

Butyl/EPDM Flashings

ADCO Products
800/248-4010
www.adcoglobal.com

Ashland Chemical Co.
888/424-8356
www.ashchem.com

Avenco
800/835-0774
www.avenco.com

Geocel
800/348-7615
www.geocelusa.com

International Diamond Systems
800/248-1558
www.internationaldiamond.com

Tremco Sealants
800/321-7906
www.tremcosealants.com

Nonstick Flexible Flashings

Fortifiber
800/773-4777
www.fortifiber.com

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800/882-7663
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