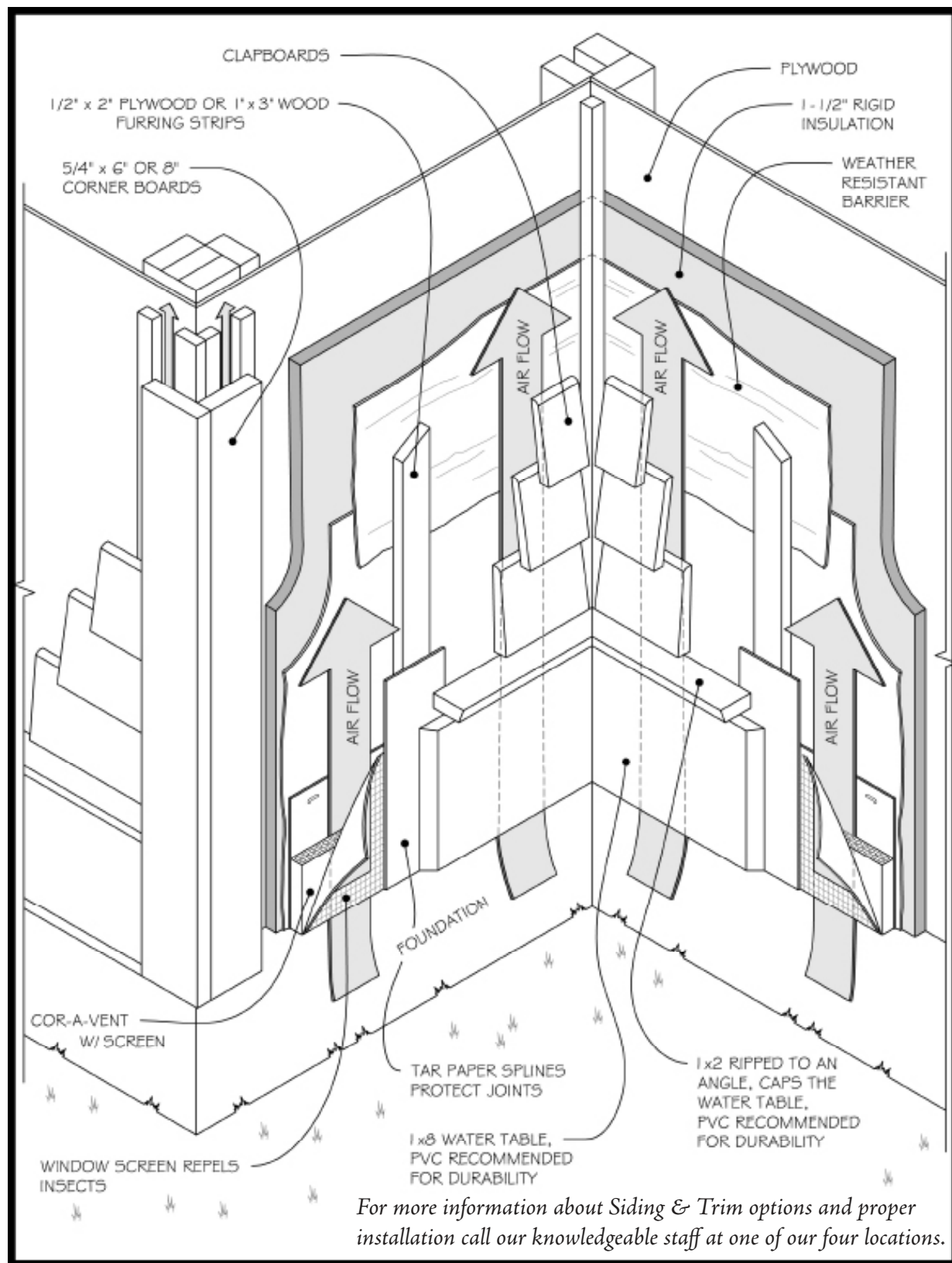


RAIN SCREEN APPLICATION EXAMPLE



VERMONT

Manchester Center 888 447 5645 • Middlebury 800 564 2721
 Morrisville 802 888 4501 • Stowe 802 253 8516
 Barre 802 476 4156 • Montpelier 802 223 2335
 St. Johnsbury 802 748 2341 • Waitsfield 802 496 2424

MASSACHUSETTS

Williamstown 800 670 7433
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BUILDING SCIENCE SERIES
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SIDING & TRIM OPTIONS: Make sure your siding and trim last!

Have you ever looked around and wondered why the siding on old barns lasts so long and seems to hold paint until the pigment has totally faded, while at the same time the paint on your house is falling off and the trim is rotting only a few years after replacement - must be the paint or inferior wood; most likely, it is neither of those issues. The primary reason natural siding and trim materials last so long on old, un-insulated buildings is that they are well vented on all sides.

When wood is well ventilated it generally stays dry with a moisture content of less than 19 percent. Under these ideal conditions, siding and trim will not support wood decay fungi (which requires moisture of 20-25 percent). Unfortunately, standard and accepted residential building practices over the past 40 years have generally disregarded this important fact that wood likes to stay dry.

The unfortunate fact is all siding and trim installations can leak, and moisture can get trapped in the very tight space between the siding or trim and the building paper and plywood behind it. This trapped moisture can come from inside or outside the building, from leaks, or even from moist air from normal household activities. When liquid moisture gets trapped in wood, the moisture content goes up and decay fungi grow.

"Nonsense," you say, "my parent's house was built in the 70s and there hasn't been much rot and the paint looks pretty good." This could be, and the likely reason is another culprit in this rotten wood, paint peeling mystery. Older homes are generally less "tight" than homes built today. The down side to this is older homes tend to be more drafty, the upside is they also move more air through the walls which allows drying. Homes in recent years, built with plastic sheeting behind the sheetrock and building paper of some sort behind the siding, really don't allow much air to move inside a wall or behind siding. While you have improved the insulating value of the wall you have greatly reduced its potential to dry out once wet; wet wood leads to rot and decay.

And what about the peeling paint? Paint is nearly vapor impermeable, in other words, water in either liquid or vapor form will not easily pass through it; this is what you want after all. The problem comes when moisture is trapped behind siding, as explained above, with no place to go and no way to dry out. Once that moisture reaches the back side of the paint it has no place to go. Eventually accumulated moisture will literally pop the paint off of the house, sometimes in sheets. Repeated paint jobs produce no better results. Preparation and proper product are also critical in the painting process, but if it is coming off in sheets, it is likely moisture. So what do you do about this?

RAIN SCREEN APPLICATION:

A rain screen is simply a technique of creating a space between your siding and your building's weather resistant barrier. The purpose of the space is to drain accumulated water and to allow airflow to improve the drying process.

All of the natural wood and wood-composite products listed in this brochure will perform much better when vented with a rain screen application.

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rk MILES SIDING & TRIM OPTIONS

	PRODUCT	AVAIL. WIDTH	AVAIL. LENGTH	DURABILITY	COST	WHEN & HOW TO USE
EXTERIOR TRIM OPTIONS	XLD Hardie Trim Same composite material as siding	5/4" x 4, 6, 8 & 12" 4/4" x 4, 6, 8 & 12"	12'		\$	Least expensive trim that is made for exterior use. Paint the end cuts and VENT the back of the board.
	Eastern White Pine - Premium or Select S4S, T&G, SL, rougher head finish	1" x 4-12" 5/4" x 4-12"	6-16' R/L		\$-\$\$\$	Great for all interior applications. Will rot in 5 years in standard exterior applications. If VENTED to the back and sealed on all 6 sides, it should last 15-20 years with maintenance.
	Finger Jointed Pine Claymark Centurion Radiata Pine - Primed	1" x 4-12" 5/4 x 4-12	16'		\$\$\$	Good choice for interior trim applications. Finger jointed radiata pine will not bleed and carries a 50 year warranty on the substrate. Primed with 2 coats of acrylic primer.
	Finger Jointed Primed EWP S4S only	1" x 4-12" 5/4" x 4-12"	16' only		\$\$	Great for all interior applications. Will rot in 5 years in standard exterior applications. If VENTED to the back and sealed on all 6 sides, it should last 15-20 years with maintenance. Finger joints may become more visible over time.
	Western Red Cedar- Knotty Sound Tight Knot	1" x 8" & 12"	6' - 16' R/L		\$\$	Less expensive than the clear cedar. This is part of the grade. Random lengths so don't get length specific. Potential bleed. Works best when VENTED. No cedar bleed guarantee.
	Lifespan Trim Boards Clear (LOSP) Treated Radiata Pine	1" x 4-12" 5/4" x 4-12"	12' & 16' only		\$\$	Good alternative for exterior trim, still works best when VENTED. Do not use for interior - uses a solvent-based preservative. Need to finish all 6 sides.
	Western Red Cedar Clear Vertical Grain	1" x 4-12" 5/4" x 4-12"	6' - 20' R/L		\$\$\$	Expensive but the best real wood product for exterior trim. Subject to cedar bleed which is caused by tannins leaching out of the wood. Works best when VENTED. No cedar bleed guarantee.
	Boral TruExterior Trim Poly-Ash	3/4" x 4-12" 5/4" x 4-12"	16' only 16' only		\$\$\$	PVC with a recycled twist. 70% fly ash patent limits, but does not eliminate, expansion and contraction.
	Kleer PVC	1" x 4-12" 5/4" x 4-12"	18' only 20' only		\$\$\$ \$\$\$	It is plastic and paints well. Watch for dark colors. Careful with long runs, will expand in heat and shrink in cold! This can cause problems.
EXTERIOR SIDING OPTIONS	Vinyl Siding D4 White Vinyl - 1 sq = 12 pcs	8"	12'		\$	Use galvanized roofing nails or aluminum siding nails 1½"; hung in place. Do not overdrive fastener.
	Hardie Siding Smooth Latex primed	5/16" x 5¼" 5/16" x 6¼" 5/16" x 7¼"	12'		\$	Comes primed but you will need to make sure all ends are sealed with 100% acrylic latex primer. This product will also work best if VENTED. Despite what the literature says, paint will not stick in areas that get splashed or direct bulk water.
	Knotty Spruce Clapboards Unprimed Reversible	1/2" x 6"	16' (10 pk) typically		\$	Best if vented. Our least expensive clapboard siding. One side smooth, one side rough. Great long lengths.
	Knotty Spruce Clapboards Oil Primed - spruce knots don't bleed Graded to rough side	1/2" x 6"	16' typically		\$	You will need to finish all 6 sides and to get best results on holding finishes you must VENT the back of the clapboard. This is a good, more "rustic" looking product and will last more than 15-20 years if vented. Tends to split which is expected for the grade and cost. Rough side out for best paint adhesion. Will cup.
	16" White Cedar Extras	Varies	16'		\$\$	You must VENT the back of shingles. Use SS nails only. Higher installation cost.
	Clear Cedar Clapboards A+ Better Unprimed	1/2" x 6"	6'- 20'		\$\$	You will need to finish all 6 sides and to get best results on holding finishes, you must VENT the back of the clapboard. Use SS nails. No cedar bleed guarantee. Rough side out for best paint adhesion.
	Finger Joint CVG Cedar Clapboards Oiled Primed	1/2" x 6"	All 16'		\$\$	Comes pre-primed. Don't panic about the finger joint but to get best results on holding finishes you must VENT the back of the clapboard. Use SS nails. Rough side out. No cedar bleed guarantee. If finger joint shows, just sand and paint!
	LOSP Bevel Clapboard Treated and Primed Radiata Pine	1/2" x 6"	3'- 20'		\$\$\$	You will need to finish all 6 sides and to get best results on holding finishes, you must VENT the back of the clapboard. Use SS nails. Rough side out.
	CVG Clear Hemlock Clapboards Oiled Primed	1/2" x 6"	6'- 20'		\$\$\$	Comes pre-primed. To get best results on holding finishes, you must VENT the back of the clapboard. Use SS nails. Very nice smooth finish but recommend rough side out for better paint adhesion.
	CVG Cedar Clapboards Clear Vertical Grain	1/2" x 6"	6'- 20'		\$\$\$	You will need to finish all 6 sides and to get best results on holding finishes, you must VENT the back of the clapboard. Use SS nails. No cedar bleed guarantee. Rough side out for best paint adhesion.
CVG Cedar Clapboards Clear Vertical Grain- Oil primed	1/2" x 6"	6'- 20'		\$\$\$	You must VENT the back of the clapboard. Use SS nails. No cedar bleed guarantee. Rough side out for best paint adhesion.	

CONSIDER THIS:

- Any of these choices will require maintenance on average of every 5 years; re-painting or re-staining.
- All of these products will perform much better if they are vented using a rain screen application (see detail on back page). For more information go to: www.greenhomebuilding.com/pdf/RainScreen.pdf
- If you are replacing rotted siding or trim, or if you are struggling to keep paint on the side of your house, you will continue to get rotted siding, trim and peeling paint if you don't create a proper air channel or rainscreen. The problem is not the product, but the application.
- The process of creating a rain screen in new construction is complicated. The process of creating a rain screen in a renovation is even more complicated. We can help you with this – just ask.

... AND THIS:

- Overhangs are a siding and trim's best friend; the bigger, the better.
- Gutter systems are a close second.
- Hard surfaces like steps, patios and decks cause water to splash back on the skirt boards, siding and doors. Start the clock, these will be the first areas to look tired, loose finishes and eventually start to fall apart.
- Make sure water from the roof is directed away from the sidewall. We sell inexpensive diverters that do the job.
- Use only Stainless Steel Fasteners with Cedar and we recommend Cortex Screws for PVC applications.

DURABILITY KEY: = least durable = moderately durable = most durable

COST KEY: \$ = least expensive \$\$ = moderately expensive \$\$\$ = most expensive

See associate for availability. For vertical siding options and applications, please call our Building Materials Department.

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