



“Save Your Siding”

Cor-A-Vent's Siding Vent System: Your Rainscreen Ventilation Solution

“In areas that experience frequent wind-driven rain and areas susceptible to high winds, it is recommended that a rain screen design be considered when specifying wood or fiber cement siding.”

– from FEMA's 2009 Hurricane Ike Recovery Advisory



First things First –

Q & A

Q: What is a “rainscreen”?

A: A rainscreen is a wall drainage and ventilation system that creates a space between the exterior cladding and your home’s moisture barrier.

Q: Why do I need a rainscreen?

A: To prevent moisture from becoming trapped between your siding and wall sheathing. Over time, trapped water can cause your moisture barrier to fail and ruin your siding.

Q: Is a rainscreen required by building code?

A: In some areas of the United States, like Oregon, and in Canada, a rainscreen is required, while it will likely be required soon in other coastal areas. You can refer to the International Residential Code (IRC) section R703.1 for more information about this requirement.

Q: How do I incorporate a rainscreen into my walls?

A: With **Cor-A-Vent’s Siding Vent System** – the first commercial rainscreen product on the market. The first part of the system is the heavy-duty **Sturdi-Strip** furring strips, which hold the siding away from the wall, creating the necessary capillary break ($\frac{3}{8}$ ” or 10mm) that will allow moisture to drain out instead of becoming trapped. Our **Siding Vent** products – either the $\frac{7}{16}$ ” thick **SV-3**, or the $\frac{3}{4}$ ” thick **SV-5** – at the top and bottom of the walls will let that moisture drain out and allow fresh air to pass through, keeping the system dry, all while keeping insects out. (see detail on pages 3,4 & 8)

Q: How do I know if I need the SV-3 or the SV-5?

A: That will be determined by your choice of furring strips. If you go with Sturdi-Strips or another nominal $\frac{1}{2}$ ” thick furring, you would use the SV-3. If you go with pressure-treated $\frac{3}{4}$ ” thick wood furring strips, or a double layer of Sturdi-Strips to achieve $\frac{3}{4}$ ” thickness, you would need the SV-5.

Q: Why should I use the Siding Vent System instead of another rainscreen product?

A: The Siding Vent System was designed to last (see testing data on page 9) and will not crush or compress like competing “drainage mat” rainscreen products. This is why James Hardie *does not* recommend using a drainage mat, but *will* recommend Cor-A-Vent’s Siding Vent System for use with their siding products (<http://www.jameshardie.com/d2w/best-practices/appendix-glossary-esr-hz5-us-en.pdf>).

Q: Does this system work with vertical siding or cedar shakes?

A: Yes to both – using the new **Sturdi-Battens**, a $\frac{7}{16}$ ” thick drainable batten strip. In vertical siding applications, Sturdi-Battens install every 16” o.c. to 24” o.c. based on the spacing recommended by the siding manufacturer (see detail drawings on pages 6 & 7). Spacing for cedar shakes and shingles will depend on those products’ specific exposure (see page 7). Install the $\frac{7}{16}$ ” thick SV-3 at the top and bottom of the wall to provide moisture drainage, airflow, and an insect barrier.

Q: Do I still need a starter strip with the Siding Vent System?

A: Yes, since the siding has been furred out from the wall to the same thickness as the Siding Vents being used at the top and bottom, a starter strip like Cor-A-Vent’s Sturdi-Starter (see back cover) for the first course of siding will still be required.



SV-3™ Siding Vent

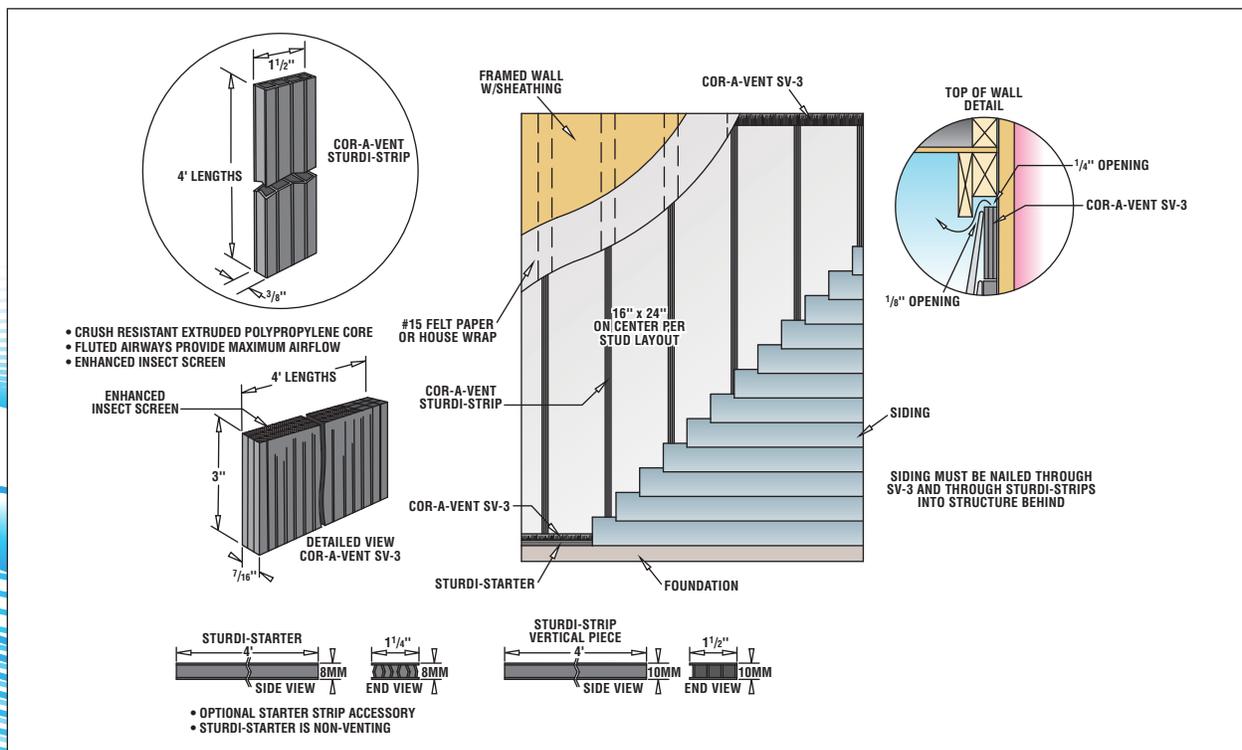


- 7/16" thick by 3" high
- Easy-to-handle 4-foot long sections
- Pairs great with Sturdi-Strips, or other 3/8" to 1/2" thick furring
- 24 pieces per carton (96 lineal feet)
- Color: Black
- Heat-resistant: made from profile extruded polypropylene plastic
- Impact-resistant: screw, staple or power-nail in place
- Crush-resistant: Will not compress like "drainage mat" products
- James Hardie® recommended, unlike "drainage mat" products

(see: <http://www.jameshardiecommercial.com/pdf/HardiePanel-Rainscreen-Quick-Reference-Guide.pdf>)

Q: How much SV-3 do I need?

A: SV-3 runs linearly along the top and bottom of the wall, as well as above and below windows or doors. Take the total length of all walls and multiply by 2 (for top and bottom), then account for above and below wall penetrations to determine how many linear feet of SV-3 you will need.



SV-5™ Siding Vent

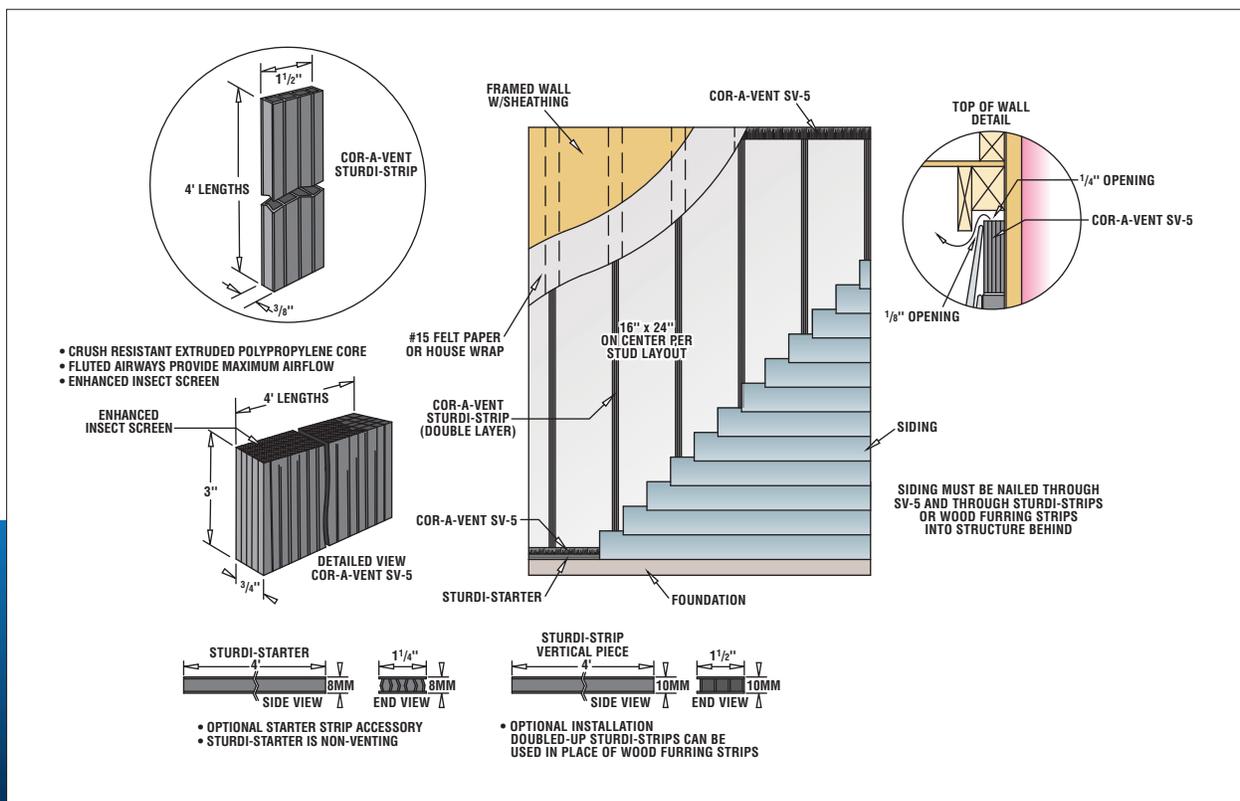


- 3/4" thick by 3" high
- Easy-to-handle 4-foot long sections
- Pairs great with doubled-up Sturdi-Strips, or other 3/4" thick furring
- 15 pieces per carton (60 lineal feet)
- Color: Black
- Heat-resistant: made from profile extruded polypropylene plastic
- Impact-resistant: screw, staple or power-nail in place
- Crush-resistant: Will not compress like "drainage mat" products
- James Hardie® recommended, unlike "drainage mat" products

(see: <http://www.jameshardiecommercial.com/pdf/HardiePanel-Rainscreen-Quick-Reference-Guide.pdf>)

Q: How much SV-5 do I need?

A: SV-5 runs linearly along the top and bottom of the wall, as well as above and below windows or doors. Take the total length of all walls and multiply by 2 (for top and bottom), then account for above and below wall penetrations to determine how many lineal feet of SV-5 you will need.



Sturdi-Strip™

furring strip



- 3/8" thick by 1 1/2" wide
- Easy-to-handle 4-foot long sections
- Pairs great with the SV-3 siding vent, or doubled up to match SV-5 siding vent
- 112 pieces per carton (448 lineal feet)
- Color: Black
- Heat-resistant: made from profile extruded polypropylene plastic
- Impact-resistant: screw, staple or power-nail in place
- Crush-resistant: Will not compress like "drainage mat" products
- James Hardie® recommended, unlike "drainage mat" products

(see: <http://www.jameshardiecommercial.com/pdf/HardiePanel-Rainscreen-Quick-Reference-Guide.pdf>)

Q: How many Sturdi-Strips do I need?

A: On stud spacing with 16-inch centers, you would need 1 linear foot of Sturdi-Strip for every square foot of wall → for 500 square feet of wall, you would need 500 lineal feet of Sturdi-Strips. For 2-foot on center spacing, you would need 80% of that number – or take your square foot total and multiply by 0.8 → for 500 square feet of wall, you would need 400 lineal feet of Sturdi-Strips.



Sturdi-Batten™

Drainable batten strip **NEW!**



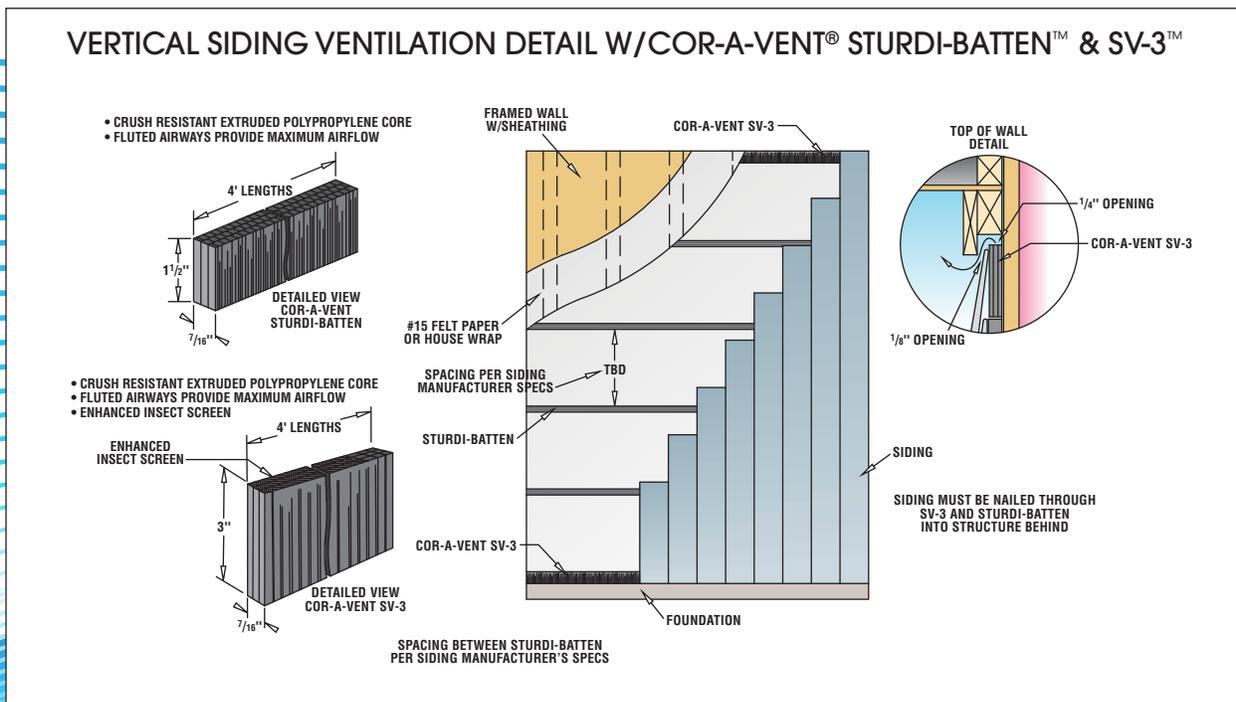
Sturdi-Batten is a vented batten strip for use with vertical siding, cedar shakes & shingles, or siding panels.

The Sturdi-Batten advantages:

- **DURABLE:** Three plies of heat-resistant PP plastic create a 7/16" thick batten strip that won't crack or compress like "drainage mat" style products when power-nailed, screwed or stapled in place.
- **VERSATILE:** Use with a number of applications, including vertical siding, panel siding and cedar shakes. (see arch. drawings on Page 6 & 7)
- **RELIABLE:** Vertically-oriented airways allow both moisture drainage and drying airflow between your siding and housewrap, adding life to your home's exterior.
- **ECONOMICAL:** Save money using Sturdi-Battens instead of drainage mats, which must be applied to the entire wall. Sturdi-Battens can be installed only as often as required by your siding manufacturer's recommendations, meaning lower material cost.

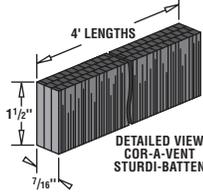
SPECIFICATIONS:

- 7/16" thick by 1 1/2" wide
- Easy-to-handle 4-foot long sections
- Pairs perfectly with the SV-3 siding vent
- 48 pieces per carton (192 lined feet)
- Color: Black
- Heat-resistant: made from profile extruded polypropylene plastic
- Impact-resistant: screw, staple or power-nail in place
- Crush-resistant: Will not compress like "drainage mat" products



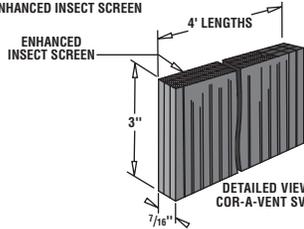
SHINGLE OR SHAKE SIDING VENTILATION DETAIL W/COR-A-VENT® STURDI-BATTEN™ & SV-3™

- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
- FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW

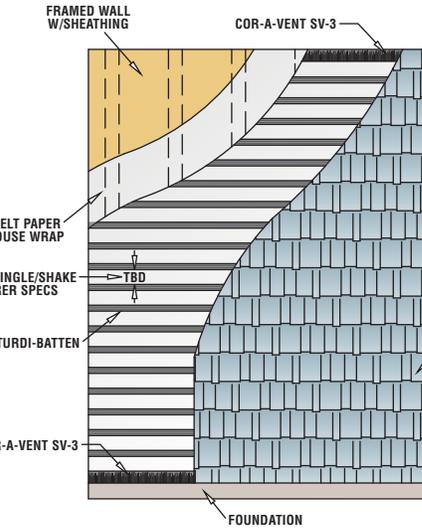


DETAILED VIEW
COR-A-VENT
STURDI-BATTEN

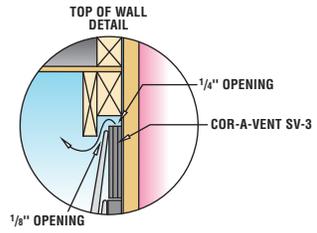
- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
- FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW
- ENHANCED INSECT SCREEN



DETAILED VIEW
COR-A-VENT SV-3



SPACING BETWEEN STURDI-BATTEN
PER SHINGLE/SHAKE MANUFACTURER'S SPECS

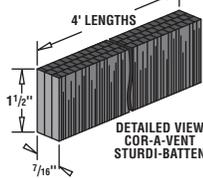


SHINGLES
OR
SHAKES

SHINGLE/SHAKE MUST BE NAILED THROUGH
SV-3 AND THROUGH THE STURDI-BATTEN
INTO STRUCTURE BEHIND

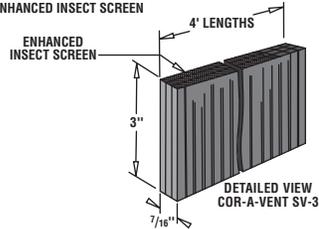
PANEL SIDING VENTILATION DETAIL W/COR-A-VENT® STURDI-BATTEN™ & SV-3™

- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
- FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW

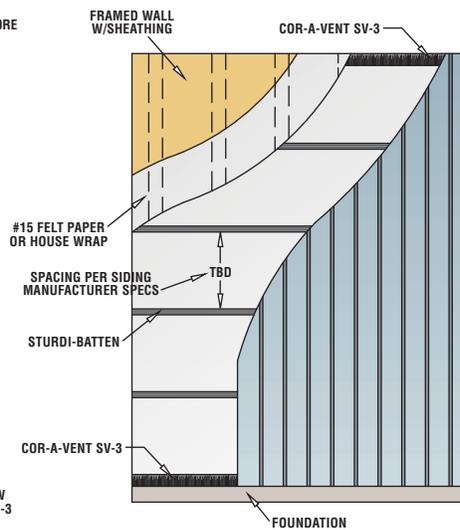


DETAILED VIEW
COR-A-VENT
STURDI-BATTEN

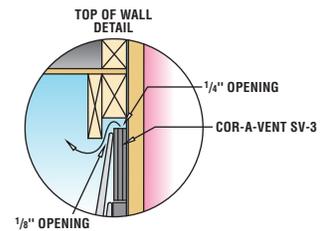
- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
- FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW
- ENHANCED INSECT SCREEN



DETAILED VIEW
COR-A-VENT SV-3



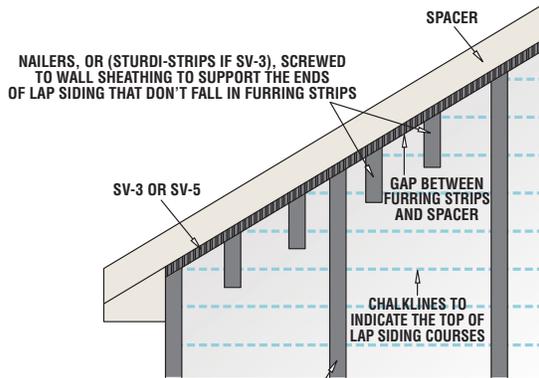
SPACING BETWEEN STURDI-BATTEN
PER SIDING MANUFACTURER'S SPECS



PANEL
SIDING

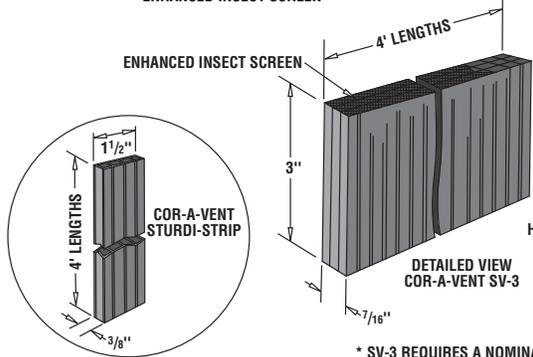
SIDING MUST BE NAILED THROUGH
SV-3 AND STURDI-BATTEN
INTO STRUCTURE BEHIND

SV-3™ OR SV-5™ GABLE END

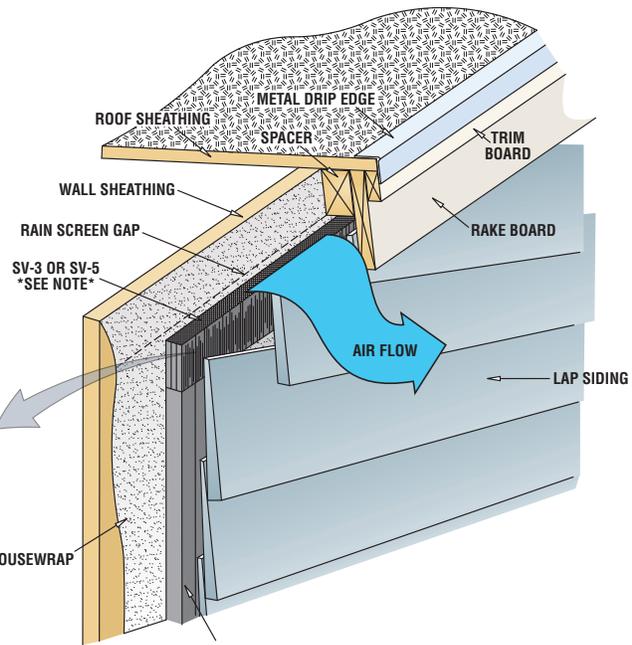


3/4" FURRING STRIPS, OR (STURDI-STRIPS IF SV-3), FASTENED TO STUDS AND CUT AT ROOF PITCH @ 16" OR 24" ON CENTER *SEE NOTE*

- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
- FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW
- ENHANCED INSECT SCREEN

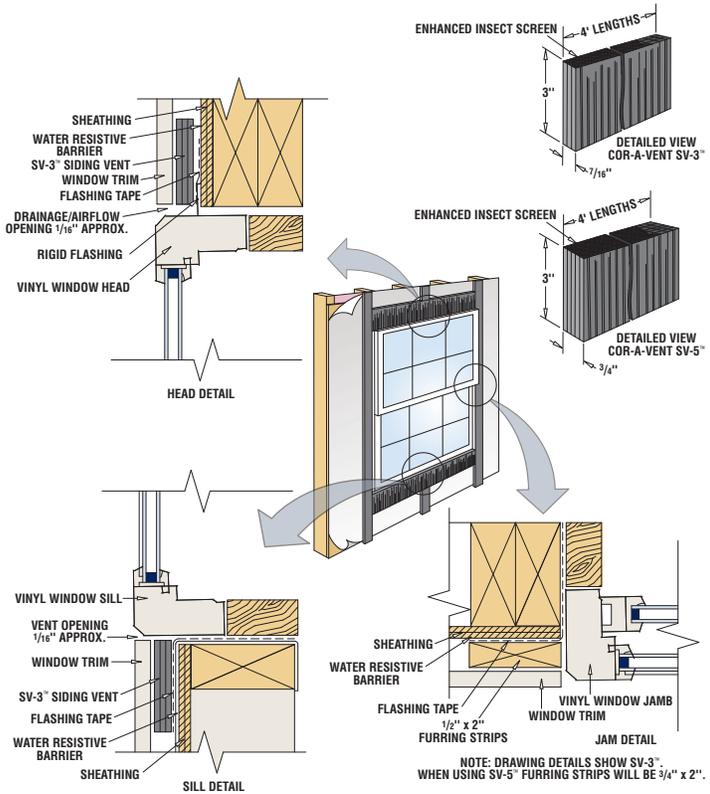


* SV-3 REQUIRES A NOMINAL 1/2" FURRING STRIP & SV-5 REQUIRES A NOMINAL 3/4" FURRING STRIP*



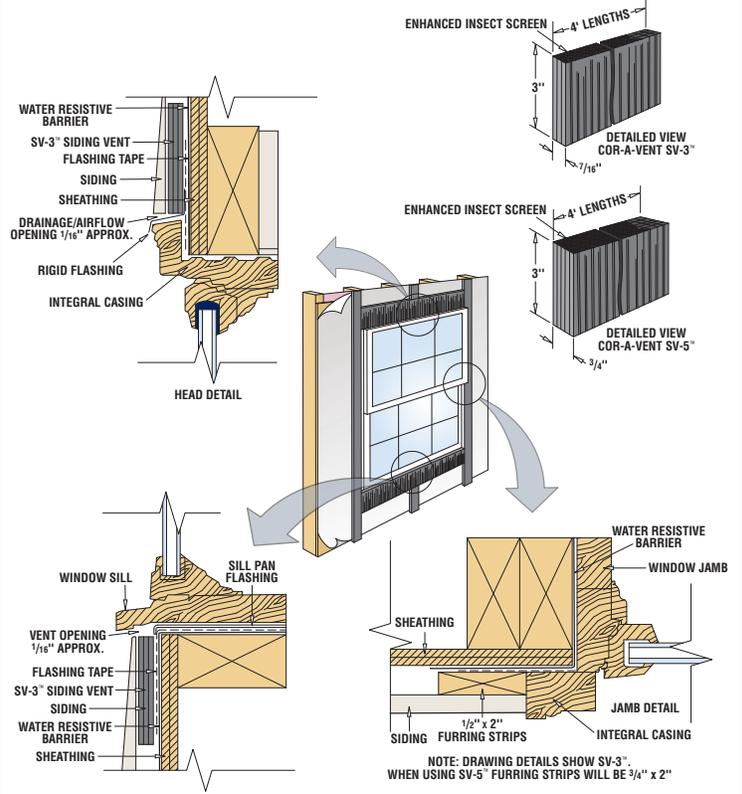
3/4" FURRING STRIPS OR STURDI-STRIPS IF SV-3 *SEE NOTE*

SV-3™ OR SV-5™ WITH VINYL WINDOWS



- SV-3™ & SV-5™ FEATURES
- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
 - FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW
 - ENHANCED INSECT SCREEN

SV-3™ OR SV-5™ WITH WOOD WINDOWS



- SV-3™ & SV-5™ FEATURES
- CRUSH RESISTANT EXTRUDED POLYPROPYLENE CORE
 - FLUTED AIRWAYS PROVIDE MAXIMUM AIRFLOW
 - ENHANCED INSECT SCREEN

The Siding Vent System: Tested For Performance

The following tests recognized by the International Code Council (ICC) were performed on Cor-A-Vent® Siding Vent products SV-3, SV-5 and Sturdi-Strips by independent testing agency PRI Construction Material Technologies.

Purpose: Determine the compliance of Cor-A-Vent's SV-3 and SV-5 Siding Vents and Sturdi-Strip with the requirements found in Florida Building Code (2010), Section 2606.4: Specifications (Plastic).

Test Methods: Testing was conducted in accordance with **ASTM D 635-03** and **ASTM D 635-06: Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position**, ASTM D 1929-96 (2000)^{e1} and ASTM D 1929-96 (2001)^{e1}; **Standard Test Method for Determining Ignition Temperature of Plastics** and ASTM E 136-12: **Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C**.

Compressive strength was determined in accordance with **ASTM 1621-10: Standard Test Method for Compressive Properties of Rigid Cellular Plastics**.

Resistance to Accelerated Weathering was determined by comparative tensile strength testing in accordance with **ASTM D 638: Standard Test Method for Tensile Properties of Plastics** before and after 2,000 hours of accelerated weathering in accordance with **ASTM G 154: Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials**. Exposure consisted of 12 hour cycles – 8 hours UV at 158°F followed by 4 hours condensation at 104°F.

Statement of Attestation:

The physical property performance of this material was determined in accordance with the standard methods listed herein. The laboratory test results presented in this report are representative of the material supplied.

Purpose: Determine the drainage efficiency of Cor-A-Vent's SV-3 and SV-5 Siding Vents and Sturdi-Strip in accordance with ASTM E 2273: **Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies**.

Test Methods: Testing was conducted in accordance with **ASTM E 2273-03(2011): Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies** as modified to be applied to the product, as installed in accordance with the manufacturer's published installation details.

Two wall assembly specimens, 4'x8', were constructed to typify the standard installation of Cor-A-Vent's SV-3 and SV-5 Siding Vents and Sturdi-Strip as follows:

| | |
|--|---|
| Wall Construction Framing members: Nominal 2x4 conventional wood framing | Sturdi-Strips plastic furring strips |
| Sheathing: 7/16" OSB | Fasteners: Tacked with 1-1/2" galv roofing nail |
| Water Resistive Barrier: ICC-ES AC 38 approved | Wall Covering: James Hardie HardiPlank siding |
| Product Description: Cor-A-Vent Siding Vent System: SV-3 Siding Vent with Enhanced Insect Screen | Fasteners: 2-5/8" galv ring shank nails |

Statement of Attestation:

The properties of this material were determined in accordance with the requirements set forth in the ICC-ES AC356 Acceptance Criteria for Moisture Drainage Systems Used with Exterior Cement Plasters or Adhered Masonry Veneer Walls. The laboratory test results presented in this report are representative of the material supplied.

Pressure-Equalized Rain Screen: Moisture Control for High-Wind Regions

INTRODUCTION

In January 2009, the Federal Emergency Management Agency (FEMA) released an advisory in the wake of Hurricane Ike, entitled "Siding Installation in High-Wind Regions". In this advisory, FEMA recommended "that a rain screen design be considered when specifying wood or fiber cement siding." Specifically, FEMA recommended a "pressure-equalized rain screen wall system", also known as a *PER*, which we will define and discuss.

Pressure-Equalized Screen Wall System

In a paper published by the Institute for Research in Construction (IRC), the National Research Council explains pressure equalization as, "When the outside air pressure is transferred to an air space behind exterior cladding, the cladding is exposed to a near-zero pressure *differential*." Which is to say, by equalizing the pressure on both sides of the cladding – outside and inside – there is less chance of moisture penetrating through that cladding. The *PER* system is broken down into three necessary components:

- A rainscreen (i.e. vented cladding).
- A compartmented air chamber.
- An air barrier system.

RAINSCREEN

A rainscreen is a simple enough concept: the creation of a space between the exterior cladding (siding) and the air/moisture barrier (housewrap or felt) for the purpose of allowing moisture drainage as well as ventilation. For a properly-functioning rainscreen system, a sufficient amount of space must be created behind the siding to achieve a capillary break, to allow moisture to drain and air to flow. In coastal British Columbia, an area of North America that sees the some of the highest amounts of yearly rainfall, a minimum of 10mm ($3/8$ "") is required by code. At $7/16$ " thick, the **SV-3 Siding Vent** exceeds this requirement. In higher wind areas, the greater the dynamic (kinetic) pressure on siding, and in turn the greater the chance for more moisture penetration, requiring

a more sufficient space to properly ventilate and equalize this pressure. The $3/4$ " thick **SV-5 Siding Vent** would be more appropriate for this condition.

COMPARTMENTED AIR CHAMBER

The second component of a *PER* requires smaller compartments along the wall to diffuse the amount of pressure across the entire façade of a building or residence. This requires the use of solid or non-cross-breathing furring strips, such as pressure-treated lumber or Cor-A-Vent® **Sturdi-Strips**. So-called "drainage mat" style rainscreen products, as well as "breathable" or "flow-through" furring strips, would not be recommended when trying to achieve a *PER* system.

AIR BARRIER

According to the NRC, "A good air barrier system is a key component of a durable, functioning wall system." The better-sealed the underlayment behind your siding, the less ventilation may be required to achieve proper pressure equalization.

RESOURCES

For more information about the above concepts, please refer to these publications and documents:

- FEMA "Siding Installations in High-Wind Regions"
http://www.fema.gov/media-library-data/20130726-1644-20490-2776/757_apd_8_sidinginstallation.pdf
- NRC "Pressure Equalization in Rainscreen Wall Systems"
https://www.nrc-cnrc.gc.ca/ctu-sc/files/doc/ctu-sc/ctu-n17_eng.pdf
- AIA "The Rain Screen Principle"
http://www.aia.org/aiaucmp/groups/ek_members/documents/pdf/aiab098384.pdf



Trapped Moisture – “It’s an epidemic.”

As a manufacturer of home ventilation products, we talk a lot about moisture and the damage it can do. It’s why Cor-A-Vent® is in business. But it’s one thing to talk about moisture damage, and another thing to see it, up close and personal. When moisture is trapped within a building envelope – with no way to escape and no chance to dry out – it can cause surprising harm, even to expensive and substantial building products like house wraps and lap siding.

Like with anything else, if you want something to last, you have to take the time and care to build it right. That’s how Chris Donatelli does it. The president of Donatelli Builders, a nationally recognized Chicago-area custom home builder and remodeler, recently shared with us a job which proves that point. Donatelli was called out to a home in Inverness, Ill., a high-end



suburb of Chicago, where the homeowners were seeing some major problems with their lap siding – splitting and cupping wood, peeling paint, and signs of something worse going on behind the scenes.

When they removed the siding, that’s exactly what they found. Failing, water-stained house wrap, rot, mold – all due to moisture trapped between the house wrap and the siding, with nowhere to go and no way to dry. Donatelli said the home’s stained cedar siding, which was less than 20 years old, was failing in a way that is becoming all too familiar to him.

“In the last five years, the biggest disasters I’ve seen on jobs have all been moisture related,” Donatelli said. “I think it’s an epidemic; homes are not being built to breathe properly, and all of this damage that it’s causing will be in the millions of dollars to fix. We’re at a point in the building industry where we’re doing all of these things to make a house tighter, which is good, but it becomes unforgiving. If mistakes are made, that mistake is going to cause a problem much faster.”

The mistake on this job was with the drainage plane between the house and the siding – or more specifically, the lack thereof. The solution Donatelli turns to is Cor-A-Vent’s Siding Vent System, which is also commonly referred to as a “rainscreen system”. The idea is simple: create a space

between the house wrap/underlayment and the siding to give moisture a way to drain and to allow air to ventilate through and keep everything dry.

By using a combination of Cor-A-Vent Sturdi-Strips – heavy-duty furring strips up the wall spaced over the studs – and SV-3 Siding Vents located top and bottom along the wall, this provides the drainage plane necessary to keep water from becoming trapped, and eventually becoming a huge problem.

“Creating air circulation is the best thing you can do to create longevity and health in a home,” Donatelli said, “but it’s also the most often overlooked part of the process. That’s why we use Cor-A-Vent’s Siding Vent System. It’s the best way to fix this problem.”

Donatelli Builders also utilizes the new Sturdi-Starter for an easy-to-install starter strip for the first course of siding, another component of the System. And rather than using subcontractors for the install, Donatelli’s crew personally handles all their work, which shows in the final results.

“We do this in-house,” Donatelli said. “Subs would never take the time to do this the right way.”

Doing it the right way is exactly the point of a utilizing the Siding Vent System in the first place. When it’s done right, from the design phase and on, builders, architects and home owners can avoid costly repairs down the road.



“There’s no reason cedar siding shouldn’t last if it’s not taking on excessive moisture,” Donatelli said. “Wood should last.”

Check out Donatelli Builders at <http://donatellibuilders.com/>

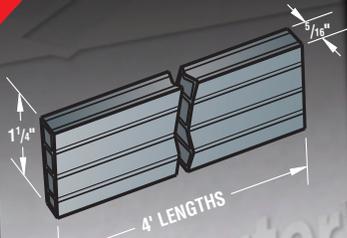
Be sure to check out the new Sturdi-Starter plastic starter strip...

INTRODUCING

Sturdi-Starter™ by Cor-A-Vent®, Inc.

A Perfect Start for Your New Siding

- A prefabricated starter strip for use behind the first course of fiber cement siding, as well as above windows and doors.
- Saves money, time and labor – no more cutting starter strips from good planks of siding
- Durable and impact resistant – Power nailable or install with staples or screws (use siding manufacturer's recommended fastener)
- Easy-to-handle 4-foot strips install fast and clean
- Made with heat resistant 5/16" (8 mm) thick polypropylene plastic – lifetime warranty



Sturdi-Starter

CORAVENT™

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