

Information Sheet

Cedar Valley Mfg.

1-Course Vent Panel™ & Corners

Overview

Studies and observations from both laboratory and field research indicate that there is a potential for moisture to enter the wall assembly of any building. Extensive researches by the U.S. Department of Energy Building Envelope Systems and Material Research Program have validated such implications. It is important to understand why this potential exists, and why it has become more of an issue in recent years.

Observations

The quest for comfortable and energy efficient housing has changed the way homes are being built. The techniques and materials needed to accomplish these desires have affected the performance of the building envelope, the wall system. The potential for increased moisture levels and moisture retention in the wall systems of today's homes is higher than in the homes built a few decades ago. This additional moisture creates an environment conducive to the growth of mildew, mold, and rot spores. Understanding why these conditions exist will give direction toward design, material choices, and construction practice to eliminate any undesirable results.

Influencing Factors

Moisture enters a wall cavity from both the interior and exterior surfaces. Interior moisture can reach levels from three to four gallons of moisture vapor per day from normal living practices. Present energy efficient homes expel a portion of this moisture through the walls and into the wall system. Exterior surfaces allow moisture to enter in several ways. The first is wind driven rain, entering around windows, doors, or unprotected joints. The second is known as capillary suction. Capillary suction is a condition where negative pressure created from either exterior wind or interior central heating or air conditioning situations create negative pressure on exterior surfaces and suck moisture into the wall system. Another way moisture enters a wall cavity is by the changing of the dew point. Depending on changes to air temperature and relative humidity, moisture vapor will turn to liquid. In the winter, as warm moist interior air collides with colder air from the exterior within the wall cavity, the dew point change will deposit moisture in the wall cavity. Conversely, cool interior air deposits moisture in the wall cavity as it collides with warmer exterior air in the summer months.

Direction

Determining methods of design and construction to keep moisture out of the building envelope could be an expensive and almost impossible task. Determining a method to channel the moisture which enters a wall system back out is much easier and effective. The design concept known as a rain screen has been used for years to help eliminate wall cavity moisture problems of certain applications. The concept is simple. An air gap is created between the siding and the wall substrate. The finish detail at the bottom of the walls allows any moisture received from the exterior to safely vent out the bottom of the wall, and the finish detail at the top of the wall allows vapor from the interior to safely vent from the top of the wall. The drying effect of the wall components removes the moist environment which is conducive to the growth of the mildew, mold or rot spores. Other simple, inexpensive design methods and construction principles can be utilized along with the rain screen concept to maximize the effectiveness of the drying efforts.

Cedar Valley Shingle Systems' new patent pending **Vent Panel** is designed with the rain screen concept built into the siding. All of the benefits of the original Cedar Valley panel are enhanced now with effective moisture control protection.

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CEDAR VALLEY'S PATENT PENDING VENT PANEL OFFERS THE MOISTURE PROTECTION OF THE RAIN SCREEN CONCEPT WITH:

- NO ADDITIONAL MATERIALS TO BUY
- NO ADDITIONAL LABOR COST
- NO ADDITIONAL CONSTRUCTION DAYS
- QUALITY CONTROLLED FACTORY APPLIED COMPONENTS ELIMINATES THE POTENTIAL OF IMPROPER FIELD APPLICATION
- VENT STRIPS ATTACHED TO THE BACK OF THE PANEL POSITION THE RAIN SCREEN IN THE PROPER LOCATION OF THE WALL ASSEMBLY
- EIGHT INCH ON-CENTER VENT STRIPS ELIMINATE FLEXING AND ENSURE STABILITY OF THE PANEL
- 11/32 INCH THICK STRIPS ELIMINATE BRIDGING OF WATER DROPLETS DURING DRAINAGE PROCESS
- PANEL'S OVERLAP DESIGN ALLOWS FOR MORE DRAINAGE COMPARED TO OTHER SIDINGS