



# **Building Envelope**

Moisture Drainage & Ventilation Products from Keene Building Products

- **MEW Products**
- **Oriwall Rainscreen**
- **CAV-AIR-ATOR**
- **KeeneStone Cut**
- 😚 KeedeLath
- 😚 Driwall Mortar Deflection
- **M** Driwall Weep Screed
- 😚 Driwall Membrane (Flashing)
- **11 Driwall CDR Vent**
- Driwall Prefabricated Composite Drain
- **Oriwall Protection Board**
- **%** Resources & Education

Moisture & ventilation are essential to proper construction. Keene Building Products has pioneered the use of entangled net products in walls, roofs & foundations to handle incidental moisture & create drying potential.

These products work in walls, masonry buildings, foundation & plaza applications. They work to increase moisture drainage, ventilation & isolation in every

facet of **commercial &** residential construction.





# Driwall<sup>™</sup> products provide you the solutions you need for a better moisture drainage & ventilation system.

The Driwall™ product line includes:

- · Full-wall rainscreen applications
- · Mortar collection devices for masonry cavity walls
- Weep screeds
- · A fiberglass lath
- Drainage & ventilation products for several different types of roofing applications
- Weep vents

## Commercial & Single Family Residential

In recent years commercial & single family residential construction techniques have changed. Today, tightening the structures to prevent thermal leakage is a common practice.

This can be attributed to the demand for energy efficiency. This change in the construction process has led to lower drying capacity, which has contributed to moisture problems.





Commercial & Single Family Residential page 2





A rollable furring strip that creates a cutting edge rainscreen and venting system behind wood and fiber-cement siding.

Easy-Fur's unique design allows for the fastest installation of any furring strip on the market, because it is can be rolled on to the wall and easily cut to length.

Its high strength configuration creates a great base to install siding on. Easy-Fur is a 4-inch wide, 10 mm thick and 25 foot long product made out of recycled nylon. It will not split, warp or rot like traditional wood furring strips. Creating ventilation behind your siding is the best way to increase the life of the siding as well as decrease the effects of moisture products in your wall.

#### Applications

- Wood siding
- Metal siding
- ✓ Fiber-cement board siding
- Other roofing and wall applications

#### Benefits

- Easy to install
- Can be cut with scissors
- Meets most local codes
- ✓ Will not split, warp or rot
- Provides no source for the production of MOLD, MILDEW or BACTERIA









# A high performance drainage and ventilation mat designed to provide a 10 mm cavity with a long term UV resistance.

Driwall<sup>™</sup> Rainscreen UV has strength bars to increase compression resistance and with the addition of a UV stable fabric it makes Driwall<sup>™</sup> Rainscreen UV ideal for open joint claddings.

The UV stable fabric is black in color to contrast the emptiness and the entangled net is designed to deter insect and rodents from resting.

Open joint cladding limitation minimum open gap 3/8-inch, minimum cladding thickness of 3/8-inch.

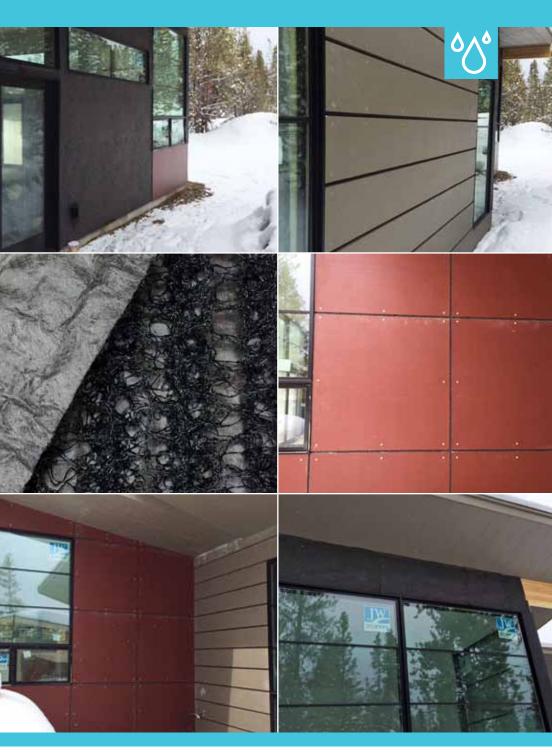
#### Applications

#### **Benefits**

- ✓ Fiber cement board siding
- Wood siding
- Open joint cladding
- Metal panels

- Long term UV resistance
- Drainage of excess moisture and ventilation in one product
- Light weight and easy to handle
- Simple installation with mechanical staple hammer
- Polymer core is resistant to most known corrosive chemicals, including solvents





Driwall Rainscreen UV page 6



## 🎌 Driwall™ Rainscreen

# Driwall<sup>™</sup> Rainscreen is a drainage mat for exterior wall systems. The product eliminates incidental moisture problems in most exterior veneer applications.

The full-wall entangled net product rolls over the water-resistive barrier to separate it from the exterior veneer. The airspace that it creates increases airflow through the wall cavity, allowing the wall to breathe & stay dry.

Depending on the size of the cavity desired, it may be specified from a 0.25" thickness to 0.75" thickness.

#### Applications

- Stucco
- ✓ Thin stone or brick
- Manufactured stone
- ✓ Stone & brick masonry
- Lap siding
- Siding applications

#### Benefits

- Prevents callbacks from moisture problems
- Increases ventilation
- Helps prevent mold
- Most effective way to drain & vent
- One product that can do it all







#### What applications is DriwalI<sup>™</sup> Rainscreen used in?

Driwall<sup>™</sup> Rainscreen is used behind stucco, manufactured stone, thin natural stone or brick and siding to provide an assured airspace for drainage and ventilation.

# Why should Driwall<sup>™</sup> Rainscreen be used instead of a dimpled or pleated house wrap product?

The house wrap products do not provide an adequate gap between the cladding and the sheathing to break the capillary action of water droplets so that positive drainage can occur. Furthermore, these products do not provide enough open space for air to flow through the walls.

Driwall<sup>™</sup> Rainscreen provides a minimum of ¼ inch of airspace to allow moisture to drain down and out of the wall. The ¼ inch of open space allows air to flow through the wall to provide the ventilation that is necessary to dry out the sheathing and the exterior veneer.

#### What is the process for installing Driwall<sup>™</sup> Rainscreen?

Driwall<sup>™</sup> Rainscreen is installed over the water-resistive barrier after all flashing details have been completed. The product is cut





to fit around all windows, doors, and other penetrations just as a weather resistant barrier would be installed. Driwall<sup>™</sup> Rainscreen can be attached using cap nails, screws, or staples. The siding or the lath, scratch coat, and exterior veneer are then installed per the manufacturer's installation guidelines.

# How does the fabric on one side of the Driwall<sup>™</sup> Rainscreen work?

The fabric is a breathable, nonwoven fabric that faces away from the sheathing. It prevents plaster or debris from entering the designed airspace. The three-inch selvage edge of fabric is folded over the adjacent sections of Driwall<sup>™</sup> Rainscreen and can also be folded over the top and bottom openings to serve as a bug screen.

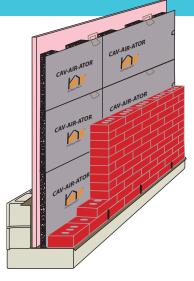
#### Do you have an Installation video for Driwall<sup>™</sup> Rainscreen?

Yes. Visit our Driwall<sup>™</sup> Rainscreen product pages online to view or use your phone to scan here.





# Moisture Ventilation & Drainage Building Envelope Products



# ి CAV-AIR-ATOR™

#### CAV-AIR-ATOR<sup>™</sup> is a full wall drainage and ventilation mat for full brick or stone masonry walls.

It prevents mortar from entering the cavity, clinging to wall ties, or blocking weep holes. The innovative design allows the 4'x16" panels to be extremely light and flexible so they can easily rest between the brick ties.

Thicknesses include: 0.40" (10 mm), 0.75" (19 mm), 1.0" (25.4 mm), & 1.75" (44 mm).

### Applications

- Brick
- Stone
- Schools, public works and institutional construction
- Residential applications for long-life construction
- For applications in which the useful life of the building is in excess of 50 years

### Benefits

- Creates a 96.5% void space in a masonry veneer cavity
- Unobstructed ventilation from top of wall to bottom weeps
- Lightweight pieces
- Filter cloth laminated to the front prevents all mortar from entering the cavity
- Springy design adjusts to varying cavity width





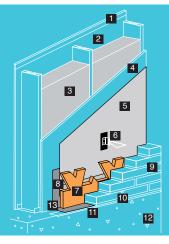
# **11 KeeneStone™ Cut**

# KeeneStone<sup>™</sup> Cut products are designed to catch & hold mortar droppings while allowing moisture to pass through & drain out of the wall.

The product suspends mortar droppings above the weep holes to prevent the drainage channels from becoming blocked or clogged. It is made from nylon & is designed to be 10.0-inches (25.4 cm) high with 7.0-inch (17.8 cm) KeeneStone<sup>TM</sup> cuts. It is 95% open to provide optimal drainage & ventilation to dry out the wall system. KeeneStone<sup>TM</sup> Cut is available in 0.4-inch, 1-inch & 2-inch thickness.

#### Benefits

- Guaranteed to stop moisture from clogging weep holes when properly installed
- Simple installation with no mechanical fasteners required
- ✓ Will not grow mold; prevents fungus and mildew
- Perfect width to suspend mortar droppings above weep holes, but below flashing connection to the interior wall



- 1 Interior Wallboard
- 2 Vapor Barrier (if reg'd)
- 3 Insulation
- 4 Exterior Sheathing on LGMF
- 5 Water Resistant Barrier or Air Barrier
- 6 Masonry Veneer Anchor 13 Through Wall Flashing on Self-Adhering Membrane Strip

#### 7 KeeneStone™ Cut

- 8 Termination Tape (if req'd)
- 9 Masonry Veneer
- 10 Driwall<sup>™</sup> Weep Vents11 Metal Drip Edge
- Counter Flashing
- 12 Concrete Foundation





# KeedeLath<sup>™</sup> is a self-furring synthetic lath that is easier to install & a lighter alternative to self-furred metal lath.

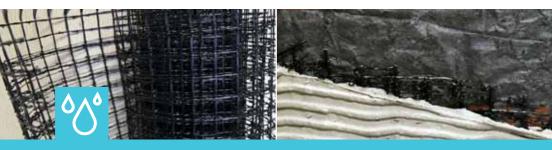
The unique patented design replaces old metal lath in a variety of wall applications.

This lath is constructed of entangled nylon mono-filaments incorporated into a fiberglass grid. The technology creates an easy to handle, durable & non–corroding reinforcement material.

#### Applications

Benefits

- ✓ Stucco
- Manufactured stone veneers
- ✓ Thin stone veneers
- Replaces traditional metal lath
- ✓ Lightweight & easy to handle
- ✓ Self-furring
- Nylon core is resistant to most known corrosive chemicals, including solvents
- Non-corroding
- Flexible & lays flat
- ✓ High-strength
- Creates mechanical bond
- ✓ Installs quicker than metal lath





# 😚 Driwall™ Mortar Deflection

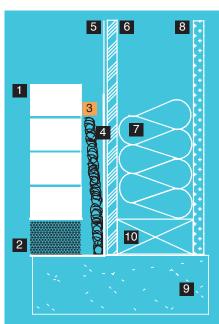
# Driwall<sup>™</sup> Mortar Deflection is a cavity wall protection device for masonry.

In commercial & residential construction it is used at the base of the wall, where flashing is installed to keep the airspace clear of mortar & debris. Driwall<sup>™</sup> Mortar Deflection will allow the weep holes to stay open & drain properly. It does not absorb water, & helps to prevent mold. Driwall<sup>™</sup> Mortar Deflection is 0.375 to 1.60" thick (9 to 41 mm), & sold in rolls that are 25 to 50 feet in length.

#### Benefits

- Prevents callbacks from moisture problems
- Cavity drainage & protection of flashing in one product
- Guaranteed to stop moisture from clogging weep holes when properly installed
- Will not grow mold; prevents fungus & mildew

- 1 Brick
- 2 Driwall™ Weep Vent
- 3 Driwall<sup>™</sup> Mortar Deflection
- 4 Flashing
- 5 Weather-resistive barrier (WRB)
- 6 Outer sheathing
- 7 Insulation
- 8 Gypsum wall board
- 9 Concrete foundation
- 10 Base plate







## 🞌 Driwall™ Weep Screed

# Driwall<sup>™</sup> Weep Screed is a flashing & weep designed to be used with a water-resistive barrier, or building paper & Driwall<sup>™</sup> Rainscreen.

It provides a clean termination for stucco, manufactured stone & thin natural stone at the bottom of the wall. The unique "V" shape allows migration of moisture down the screed & away from the wall. As required by all major building codes & the International Building Code, Weep Screed is necessary at the bottom of all framed walls.

## Membrane (Flashing)

# Driwall<sup>™</sup> Membrane is a self-adhering flashing & waterproofing membrane that provides an air & vapor barrier for full wall or flashing applications in masonry, wood, or gypsum construction.

These highly adhesive membrane products insure air & vapor protection. It is impermeable to air, moisture vapor, & water & has excellent adhesion to concrete, galvanized metal, steel, plywood & gypsum.

Driwall<sup>™</sup> Membrane is highly resistant to punctures and tears & comes in two thicknesses: 40 mil & 60 mil.





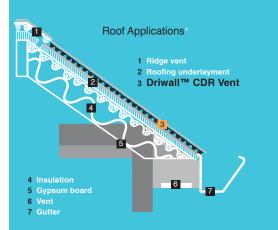
# 🞌 Driwall™ CDR Vent (Complete Drained Roof)

# Driwall<sup>™</sup> CDR Vent is a 0.30"-thick drainage & ventilation mat designed to eliminate moisture & moisture vapor in roofing & siding applications.

It is produced from an extruded polymer matrix of tangled monofilaments. The mat forms a resilient structure that spaces siding & roofing away from the inner sheathing. It is useful in roofing applications: metal, cedar shingles & shakes. \*Not recommended under asphalt or fiberglass shingles

#### Benefits

- Drainage of excess moisture & ventilation in one product
- Lightweight & easy to handle
- Simple installation with mechanical staple hammer
- Polymer core resistant to most known corrosive chemicals, including solvents
- ✓ Wide rolls for fewer seams
- Core ABSORBS & RELEASES NO MOISTURE







## Oriwall<sup>™</sup> Prefabricated Composite Drain (PCD)

Driwall<sup>™</sup> Prefabricated Composite Drain products are drainage mats designed to eliminate hydrostatic pressure from behind foundation walls, retaining walls, planters, plaza decks, & balconies.

The mat holds soil or concrete away from the wall or deck & keeps the drainage plane clear.

When using Driwall<sup>™</sup> Prefabricated Composite Drain, aggregate for drainage can be eliminated from the construction site.

#### Applications

- Plazas, foundation walls & planters
- Balconies
- Bored rock tunnels with moisture flow
- Will protect soft membranes
- Green roofs

#### **Benefits**

- Fire resistant Class A fire rated product
- Minimal deflection, & no creep or long-term degradation
- Provides a thin profile for tight construction assemblies
- Lightweight & easy to handle



keenebuilding.com

Driwall Prefabricated Composite Drain page 17



# 😚 Driwall™ Protection Board

# Driwall<sup>™</sup> Protection Board is a 0.125"-thick waterproofing protection & drainage mat.

It is used AFTER applying the waterproofing membrane to exterior foundation walls to prevent damage when backfilling. The product provides great drainage around foundations while eliminating the need for expensive clean-free, draining backfill.

After protecting our basements' waterproofing, it is essential to drain the soil around your foundation. Protection Board does this by eliminating hydrostatic pressure. Its open structure provides room for ample drainage, & a non-woven fabric separates soil from the water, allowing the water to move away for the foundation through the drainage pipe.

#### Benefits

- Tough & durable core that prevents damage to the waterproofing membrane
- High flow rate in excess of 10 gallons per minute
- Provides a thin profile for tight construction assemblies
- Flexible for easy installation

#### Applications

 Residential foundation walls





# Keene Building Products Building Envelope Products

°()°	Product Name	Thickness	Length	Area
I	Driwall Rainscreen 020-1	0.25 in./6.0 mm	65 ft.	260 sq. ft.
I	Driwall Rainscreen UV	0.40 in./10.2 mm	45 ft.	180 sq. ft.
[	Driwall Rainscreen 10 mm	0.40 in./10.9 mm	45 ft.	180 sq. ft.
[	Driwall Rainscreen 075-1	0.75 in./19.0 mm	50 ft.	200 sq. ft.
(	CAV-AIR-ATOR 0.40	0.40 in./10.0 mm	4 ft.	
(	CAV-AIR-ATOR 0.75	0.75 in./19.0 mm	4 ft.	
(	CAV-AIR-ATOR 1.0	1.0 in./25.4 mm	4 ft.	
(	CAV-AIR-ATOR 1.75	1.75 in./44.0 mm	4 ft.	
ł	KeeneStone Cut 1/2"	0.4 in./11.0 mm	4 ft.	
ł	KeeneStone Cut 1"	1.0 in./25.0 mm	4 ft.	
ł	KeeneStone Cut 2"	2.0 in./50.0 mm	4 ft.	
ł	KeedeLath		25 ft.	100 sq. ft.
I	Driwall Mortar Deflection 0.5-040	0.375 in./9.0 mm	50 ft.	
I	Driwall Mortar Deflection 1.0-075	0.75 in./19.0 mm	50 ft.	
[	Driwall Mortar Deflection 2.0-160	1.60 in./41.0 mm	25 ft.	
I	Driwall Weep Screed	0.08 in./2.0 mm	5 ft.	
I	Driwall Membrane 40 mil (Flashing)	0.039 in./1.0 mm	75 ft.	300 sq. ft.
I	Driwall Membrane 60 mil (Flashing)	0.059 in./1.5 mm	67 ft.	268 sq. ft.
I	Driwall CDR Vent	0.30 in./7.6 mm	60 ft.	240 sq. ft.
I	Driwall PCD 10-013	0.125 in./3.175 mm	100 ft.	400 sq. ft.
I	Driwall PCD 10-025	0.25 in./6.0 mm	100 ft.	400 sq. ft.
I	Driwall PCD 10-040	0.40 in./10.0 mm	100 ft.	400 sq. ft.
I	Driwall PCD 20-045	0.40 in./10.0 mm	100 ft.	400 sq. ft.
I	Driwall PCD 10-025-2 MEM	0.33 in./8.0 mm	75 ft.	300 sq. ft.
I	Driwall Protection Board	0.125 in./3.175 mm	50 ft.	200 sq. ft.
I	Driwall Weep Vents	0.375 in./9.0 mm	(size: 2.5	in. x 3.5 in.)
I	Easy-Fur	0.40 in./10.2 mm	25 ft.	





#### LEED®, or Leadership in Energy & Environmental Design, is a green

building certification program that provides a national rating system for developing sustainable building designs and construction.

### LEED v4 BD+C (Building Design + Construction)



#### MR Credit 3: 1-2 points (Material & Resources) Building Product Disclosure & Optimization - Sourcing of Raw Materials

Locally sourced materials and recycled content are now combined in 2 options:

1. Raw Material Source and Extraction Reporting (1 point)

2. Leadership Extraction Practices (1 point)

Product	Thickness	Recycled Content	Pre-Consumer Content	Post-Consumer Content
Driwall™	0.25 in. / 6.0 mm	up to 40%	40%	-
	0.40 in. / 10.9 mm	up to 40%	40%	-
	0.75 in. / 19.0 mm	up to 40%	40%	-

Manufactured in Euclid, Ohio.

#### Comparison Chart

Material & Resources - Prerequisites & Credits in LEED 2009 & LEED v4

LEED 2009 New Construction & Major Renovations			LEED v4 BD+C: Building Design + Construction		
MRp1	Storage & collection of recyclables	Required	Prereq	Storage & collection of recyclables	Required
MRc1.1	Building reuse - maintain existing walls, floors and roof	Up to 3 points	Prereq	Construction & demolition waste management planning	Required
MRc1.2	Building reuse - maintain interior nonstructural elements	1 point	Credit	Building life-cycle impact reduction	Up to 2 points
MRc2	Construction waste management	Up to 2 points	Credit	Building product disclosure & optimization - environmental product declarations*	Up to 2 points
MRc3	Materials reuse	Up to 2 points	Credit	Building product disclosure & optimization - sourcing of raw materials	Up to 2 points
MRc4	Recycled content	Up to 2 points	Credit	Building product disclosure & optimization - material ingredients	Up to 2 points
MRc5	Regional materials	Up to 2 points	Credit	Building life-cycle impact reduction recyclables	Up to 2 points
MRc6	Rapidly renewable materials	1 point	*If products meeting criteria for this credit are also locally sourced (extracted, manufactured, and purchased within 100 miles of the project site) they are valued at 200% of actual cost for purposes of credit calculation.		
MRc7	Certified wood	1 point			

Source: USGBC, LEED credit library: http://www.usgbc.org/credits/new-construction/v4/material-%26-resources



## Healthy Roofs = Drainage & Ventilation (1 Credit Hour)

Healthy roofs stand the test of time because of two important attributes; drainage and ventilation. Moisture related issues in roof, and wall assemblies have contributed to a historic amount of damage and failures. This presentation focuses on the need, and benefits of a continuous drainage, and ventilation underlayment in several different types of roofing applications. It will also emphasize how each component of the roof work in conjunction with one another to alleviate any potential problems regarding moisture.

## Healthy Walls = Rainscreen & Ventilation (1 Credit Hour)

The construction industry has seen a substantial increase in moisturerelated issues in exterior walls. This presentation will discuss how a rainscreen wall system prevents moisture build-up within walls by providing a means for drainage and ventilation. The presentation provides an overview of rainscreen principles and explains how to incorporate a rainscreen system in a variety of applications including stucco, manufactured stone, siding, and masonry cavity walls.







## Masonry Cavity Walls, the Original Rainscreen System (1 Credit Hour)

This presentation discusses moisture management in a masonry cavity wall. It will emphasize the importance of maintaining an open airspace within the cavity for proper drainage and ventilation in the wall system. It will provide the means and methods of designing and constructing a clean, unobstructed cavity, which will provide energy efficiency and a better living environment.

### 🞌 Solidifying your Foundation – Below Grade Drainage & its Importance (1 Credit Hour)

Building structures endure largely because of soundly constructed foundations, and the key to a healthy foundation is proper drainage. Historically, moisture has eroded foundations and caused structural failures. This presentation focuses on historical, current and future drainage systems, and their importance in building a sound structure.



Call or Email TODAY to set up a lunch presentation 877-514-5336 info@keenebuilding.com

Keene Building Products is a registered provider with The American Institute of Architects Continuing Education Systems. Credit earned upon completion of this program will be reported to CES Records for AIA members. Credit includes Health, Safety, and Welfare (HSW) (1 Credit Hour).

Certificates of Completion for non-AIA members are available upon request. This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. Questions related to specific material, methods and services will be addressed at the conclusion of this presentation.



## **Residential Home**

Roxbury, CT

In the town of Roxbury, CT, a new residential home was taking shape. The contractor wanted to provide a home that was energy efficient, while aesthetically pleasing. The new home was going to have vertical pine siding, and a cedar shingled roof. Though, some issues were raised about how to properly drain, and ventilate the siding, as well as the roof.

The contractor was concerned about potential drainage problems that were related to incidental moisture penetration in the pine siding, which would lead to cupping, or warping. Also, properly ventilating the siding was something that the contractor was concerned with. A solution presented itself and a decision was made to incorporate Keene Building Product's **Driwall Rainscreen 020-1**. This quarterinch drainage mat would solve any potential problems that were related to moisture. It provided a space so that any moisture that gets behind the siding can properly drain to the exterior. Each roll of Driwall Rainscreen contains 260 square feet. Also, each roll is equipped with a three and a half inch fabric overhang, which would fold behind the Rainscreen at the bottom of the wall, and provide a bug/leaf screen.





In conjunction with that, the airspace provided by the Driwall Rainscreen, will allow the siding to ventilate. This is a key aspect for the longevity of the siding.

The next issue that needed to be resolved was how to properly drain and ventilate the cedar roof. Again, the contractor was concerned with this potential problem. The solution to this issue is another Keene product called, **Driwall CDR Vent**. It provides an airspace to properly drain, but more importantly ventilate the cedar shingles. By using the Driwall CDR Vent, some problems can be avoided, like cupping, and warping of the shingles due to moisture and no ventilation. This lightweight, and easy to handle product provides a little over a quarter-inch of airspace to eliminate moisture, and moisture vapor underneath the cedar shingles. The Driwall CDR Vent is absolutely crucial to sustain the life and look of the cedar.

By including the Driwall Rainscreen and Driwall CDR Vent into this new home, the contractor ensured that both the siding and roof could properly drain, and ventilate. The home not only looked amazing, but any concerns over moisture issues were alleviated by the use of the two products.

#### For more project profiles visit: www.keenebuilding.com/project-profiles



Resources & Education page 24



# Hotel Akron, OH

This brand new contemporary four-story hotel is the first of its kind to open in the up and coming downtown Akron, Ohio area where many museums, restaurants and retail establishments reside. Guests can enjoy great amenities including an indoor pool and high-quality fitness center, all while feeling comfortable and relaxed during their stay.

In order to make this hotel ideal for guests, appearance is a factor. Guests want to stay in new and modern hotels and that requires exterior buildings to look their best. The exterior veneer for this hotel was finished with manufactured stone.

To prevent any exterior moisture issues, sustain the longevity of this hotel and to create a profitable asset, the wall design incorporated Keene Building Products' Driwall Rainscreen drainage mat. Driwall Rainscreen 020-1 provides an airspace between the sheathing and exterior veneer to allow for drainage and ventilation of the wall system.





Driwall<sup>™</sup> Rainscreen provides an airspace for any incidental moisture penetration that gets behind the stone, which occurs due to wind driven rain. Driwall<sup>™</sup> Rainscreen allows for moisture to drain to the exterior.

Driwall<sup>™</sup> Rainscreen also provides ventilation. When the stone gets wet, it will have the capacity to properly dry. Draining and drying are two extremely important aspects for the proper life span of manufactured stone. Driwall<sup>™</sup> Rainscreen provides that in one product.

By including Driwall<sup>™</sup> Rainscreen 020-1 into this brand new hotel, the mason ensured that the manufactured stone can properly drain and ventilate. Now it is ready for guest to enjoy and stay comfortably.

For more project profiles visit: www.keenebuilding.com/project-profiles



Resources & Education page 26

Home page. SCAN.



© 2017 Keene Building Products™, all rights reserved. Printed in U.S.A. All logos/images are trademarks of Keene Building Products. Mayfield Hts., OH USA.

Version March 2017



877 | 514 | 5336 P 440 | 605 | 1020 F 440 | 605 | 1120

