



**CITADEL**  
ARCHITECTURAL PRODUCTS

**FEATURING:**

- RR (Rout & Return) Attachment System
- RS (RainScreen) Attachment System

# Envelope2000<sup>®</sup>

Metal Composite Material (MCM)



# THE ULTIMATE IN BEAUTY AND PERFORMANCE.

■ As shop-fabricated systems, the RR (*Rout and Return*) and RS (*RainScreen*) attachment methods not only offer the ultimate in performance with the *Envelope 2000*® MCM, but they also provide the ultimate in aesthetics with crisp lines and clean joints.



## Features & Benefits of Envelope 2000® and the RR and RS attachment systems



■ **Superior Flatness:**  
Due to an innovative phenolic resin core, *Envelope 2000*® provides a clean, flat and unified appearance.



■ **Wide Color Palette:**  
A large selection of standard and premium colors are available for *Envelope 2000*®. Plus, virtually any color can be matched to custom specifications.



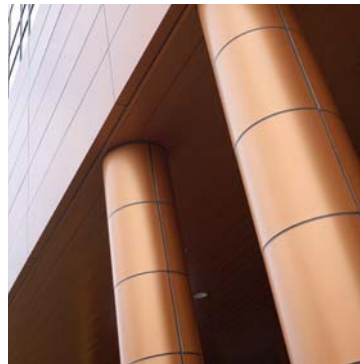
■ **Curvable Systems:**  
Both the *RR* and *RS* systems can be used to create long, flowing curves to highlight architectural details.



■ **Durability:**  
With the best impact resistance in the industry, *Envelope 2000*® provides a high-end aesthetic that will last for years to come.



■ **Tested Systems:**  
The *RR* and *RS* system have been designed and tested by the panel manufacturer to adhere to building codes.



■ **Column Covers:**  
*Envelope 2000*® provides an excellent option for column covers to add visual punch to any elevation.

## Colors & Finishes (Other metals such as copper, zinc, and stainless steel also available.)

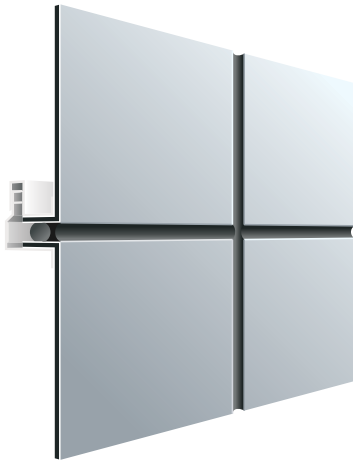
■ **Kynar 500® Solid Tones:**  
Over 20 standard/premium colors to choose from in an industry benchmark finish with a 30-year warranty.

■ **Kynar 500® Metallics:**  
6 standard metallic and mica colors for an additional visual interest.

■ **Anodized Finishes:**  
5 true integral anodized aluminum finishes that carry a 20-year standard warranty.

■ **Custom Colors:**  
Available to match customer specifications, no minimum order required.





RR: CAULK JOINT



RS: 'DRY' JOINT

## Route & Return (RR) System

### DESCRIPTION

The *Envelope 2000*® Route and Return (RR) System is designed to offer a high-end look while providing all the benefits of a true barrier cladding system.

### ATTRIBUTES

- **System Type:**  
Shop-Fabricated, Non-Structural, Barrier Wall (*all joints completely sealed*), Progressive Sequence Installation
- **System Depth:**  
1-1/2" from face of substrate to face of panel
- **Testing:**  
ASTM E108 Mod: *Modified Fire Testing*  
ASTM E283: *Static Air Infiltration*  
ASTM E330: *Structural Design Load*  
ASTM E331: *Static Water Infiltration*  
UBC 26-9 (NFPA 285): *Intermediate Scale Multi-Story*  
ICC: *International Code Council*  
City Of Los Angeles
- **Lead Time:** 10 Working Days + Fabrication\*

## RainScreen (RS) System

### DESCRIPTION

Offering a different approach to the barrier system, the *Envelope 2000*® RainScreen (RS) System manages any incidental moisture that may occur within the system through a system of weep holes and channels.

### ATTRIBUTES

- **System Type:**  
Shop-Fabricated, Non-Structural, Rainscreen/Cavity Wall, Progressive Sequence Installation
- **System Depth:**  
1-7/8" from face of substrate to face of panel
- **Testing:**  
ASTM E283: *Static Air Infiltration*  
ASTM E330: *Structural Design Load*  
ASTM E331: *Static Water Infiltration*  
UBC 26-9 (NFPA 285): *Intermediate Scale Multi-Story*  
ICC: *International Code Council*  
City Of Los Angeles
- **Lead Time:** 10 Working Days + Fabrication\*

### SUBSTRATE REQUIREMENTS

- **Acceptable Types:**  
Nailable Substrate (recommended)
  - *plywood, OSB, furring strips over masonry*
  - *system fastens directly to substrate*
 Non-Nailable Substrate
  - *exterior gypsum, DensGlas™*
  - *system must fasten through substrate to studs*
- **Moisture Barrier:**  
If moisture barrier is present (recommended for RR system, required for RS system), metal strapping must be placed over barrier and secured to stud/substrate with adhesive in the field of the panel applied to strapping.
- **Flatness:**  
no more than 1/4" deviation in 20ft

# Route & Return (RR) System

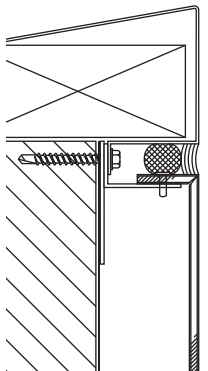
# RainScreen (RS) System

## TYPICAL SECTION

## TYPICAL SECTION

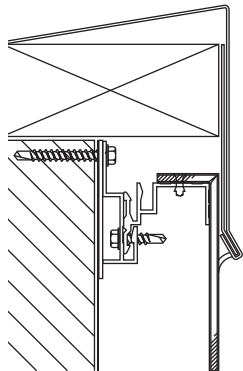
### PARAPET DETAIL

### PARAPET DETAIL



■ **Extrusion Used:**

- RR-104 Extrusion

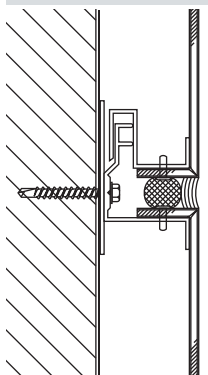


■ **Extrusions Used:**

- 8212 Extrusion
- 8216 Extrusion

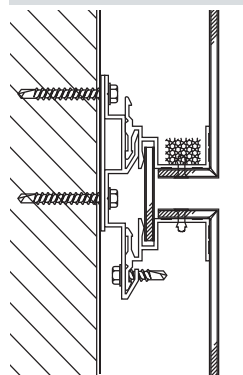
### HORIZONTAL DETAIL

### HORIZONTAL DETAIL



■ **Extrusions Used:**

- RR-121 Extrusion
- RR-122 Extrusion



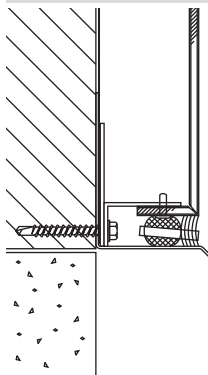
■ **Extrusions Used:**

- 8216 Extrusion  
*(with weep holes and baffle)*
- 8214 Extrusion

*Joint is variable width up to 12".  
Panel accent strips are free floating.*

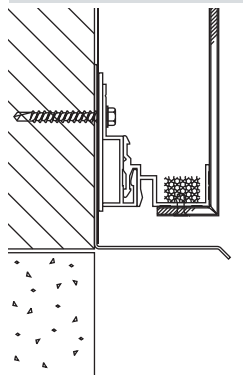
### BASE DETAIL

### BASE DETAIL



■ **Extrusion Used:**

- RR-104 Extrusion

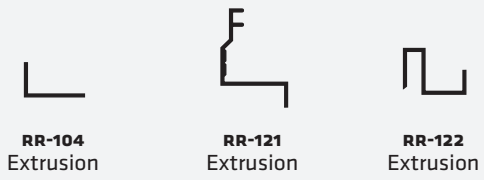


■ **Extrusions Used:**

- 8216 Extrusion  
*(with weep holes and baffle)*
- 8214 Extrusion

## SYSTEM EXTRUSIONS

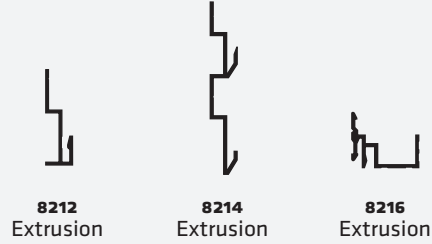
## SYSTEM EXTRUSIONS



**RR-104**  
Extrusion

**RR-121**  
Extrusion

**RR-122**  
Extrusion



**8212**  
Extrusion

**8214**  
Extrusion

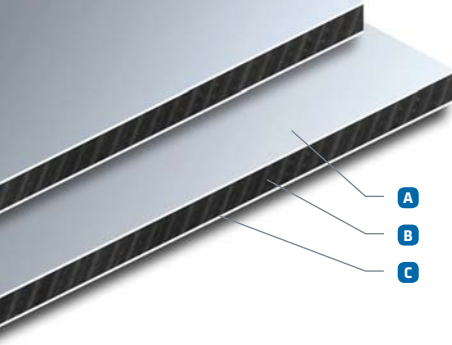
**8216**  
Extrusion

*Other extrusions may be required depending upon application.*

*Other extrusions may be required depending upon application.*

# Envelope2000<sup>®</sup>

## Metal Composite Material (MCM)



### PRODUCT DESCRIPTION:

Envelope 2000<sup>®</sup> metal composite material (MCM) is comprised of two sheets of aluminum bonded to a core of thermoset phenolic resin. Panels are supplied with a removable plastic film to protect the finish during transport and installation.

### SIZES AVAILABLE:

48" x 96" (1219mm x 2438mm)  
 48" x 120" (1219mm x 3048mm)  
 48" x 144" (1219mm x 3658mm)  
 60" x 96" (1524mm x 2438mm)  
 60" x 120" (1524mm x 3048mm)  
 60" x 144" (1524mm x 3658mm)

Cut-to-size panels are also available in any increment up to 60" x 144".

### STANDARD WARRANTY:

Panel Performance: 5 years  
 Kynar 500<sup>®</sup> Finishes: 30 years  
 Anodized Finishes: 20 years

### RECYCLED CONTENT:

Under the context of MR Credit 4 for the LEED<sup>®</sup> Green Building Rating System, Envelope 2000<sup>®</sup> contains the following recycled content (*based on weight*):

Post-Consumer: 4.8%  
 Pre-Consumer: 20.6%  
 (*post-industrial*)

### PHYSICAL PROPERTIES:

PROPERTY	STANDARD (IN)	METRIC (MM)
<b>PANEL COMPOSITION</b>		
<b>A</b> Smooth Prefinished Aluminum Face <sup>1</sup>	.024" (min)	.609mm
<b>B</b> Thermoset Phenolic Resin Core <sup>2</sup>	.105"	2.67mm
<b>C</b> Primed Smooth Aluminum Backer	.010"	.254mm
<b>WEIGHT / THICKNESS</b>		
Panel Weight	1.33 lbs/ft <sup>2</sup>	6.47 kg/m <sup>2</sup>
Nominal Thickness	5/32"	4mm
Core Density	89.0 lbs/ft <sup>2</sup>	36.3 kg/m <sup>2</sup>

<sup>1</sup>.024" is the standard aluminum thickness. Some finishes are standard in .032" or .040".

<sup>2</sup>4mm is the most commonly utilized core thickness. 3mm, 6mm, 8mm thicknesses are also available.

### TECHNICAL PROPERTIES:

PROPERTY	TEST	VALUE	UNIT
<b>THERMAL PERFORMANCE</b>			
R-Value	---	0.05	°F ft <sup>2</sup> /BTU
Coefficient Of Thermal Expansion	ASTM D1237	1.11 <sup>E-5</sup>	in/in/°F
<b>FIRE PERFORMANCE</b>			
Steiner Tunnel (Flame Spread)	ASTM E84	Class A	---
Ignition Temperature	ASTM D1929	806°	°F
<b>STRENGTH PERFORMANCE</b>			
Minimum Bond Strength	ASTM D1781	34.5	lb-in/lb
Stiffness (EI)	ASTM E72	1.27 <sup>E+3</sup>	lb-in <sup>2</sup> /ft width
Tensile Yield	ASTM E72	7.34 <sup>E+3</sup>	lb/ft width
Ultimate Tensile	ASTM E72	1.04 <sup>E+4</sup>	lb/ft width
Allowable Bending Moment	ASTM E72	1.82 <sup>E+1</sup>	lb-ft/ft width

**Citadel Architectural Products, Inc.**  
 3131-A North Franklin Road  
 Indianapolis, Indiana 46226  
 phone (317) 894-9400 • (800) 446-8828  
 fax (317) 894-6333 • (800) 247-2635  
[www.citadelap.com](http://www.citadelap.com) • [info@citadelap.com](mailto:info@citadelap.com)



Distributed By:  
**Element Architectural Products**  
[www.elementpanels.com](http://www.elementpanels.com)  
 (503) 487-0822 - NW  
 (469) 518-5860 - South