

ELEMENT
ARCHITECTURAL PRODUCTS


CITADEL
ARCHITECTURAL PRODUCTS

FEATURING:

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

Envelope2000[®]
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.



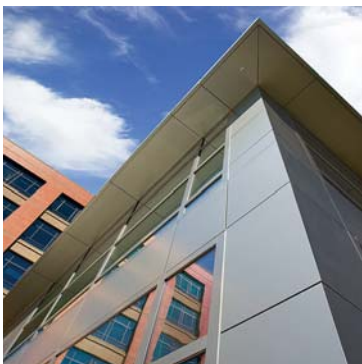
■ **Wide Color Palette:**
A large selection of standard and premium colors are available for *Envelope 2000*®. Plus, virtually any color can be matched to custom specifications.



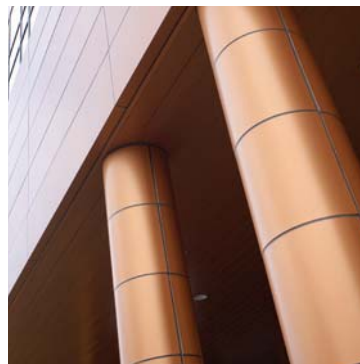
■ **Curvable Systems:**
Both the *RR* and *RS* systems can be used to create long, flowing curves to highlight architectural details.



■ **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.)

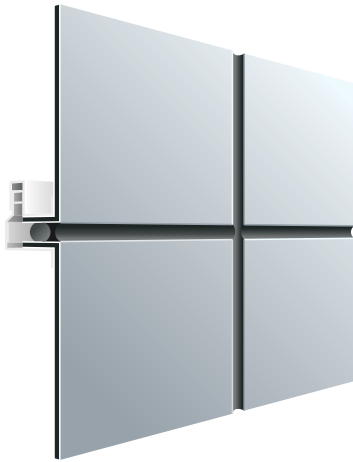
■ **Kynar 500® Solid Tones:**
Over 20 standard/premium colors to choose from in an industry benchmark finish with a 30-year warranty.

■ **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

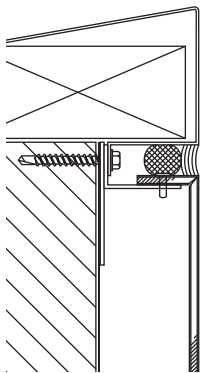
- **Acceptable Types:**
Nailable Substrate (recommended)
 - *plywood, OSB, furring strips over masonry*
 - *system fastens directly to substrate*
 Non-Nailable Substrate
 - *exterior gypsum, DensGlas™*
 - *system must fasten through substrate to studs*
- **Moisture Barrier:**
If moisture barrier is present (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

PARAPET DETAIL

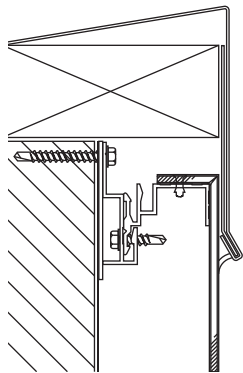


■ **Extrusion Used:**

- RR-104 Extrusion

TYPICAL SECTION

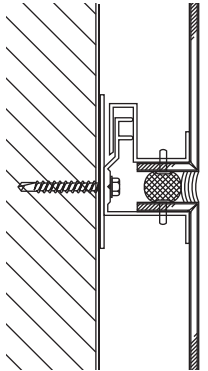
PARAPET DETAIL



■ **Extrusions Used:**

- 8212 Extrusion
- 8216 Extrusion

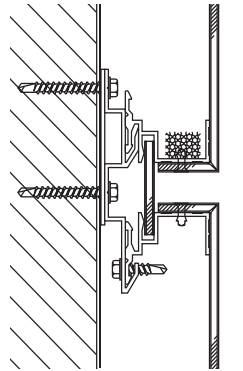
HORIZONTAL DETAIL



■ **Extrusions Used:**

- RR-121 Extrusion
- RR-122 Extrusion

HORIZONTAL DETAIL

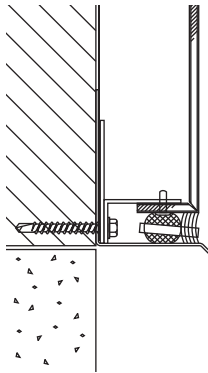


■ **Extrusions Used:**

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

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

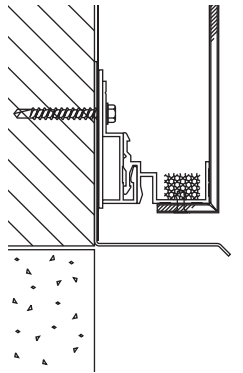
BASE DETAIL



■ **Extrusion Used:**

- RR-104 Extrusion


BASE DETAIL



■ **Extrusions Used:**

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

SYSTEM EXTRUSIONS



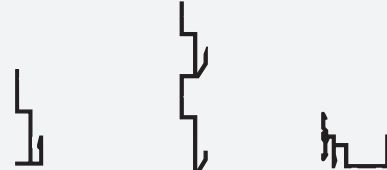
RR-104
Extrusion

RR-121
Extrusion

RR-122
Extrusion

Other extrusions may be required depending upon application.

SYSTEM EXTRUSIONS



8212
Extrusion

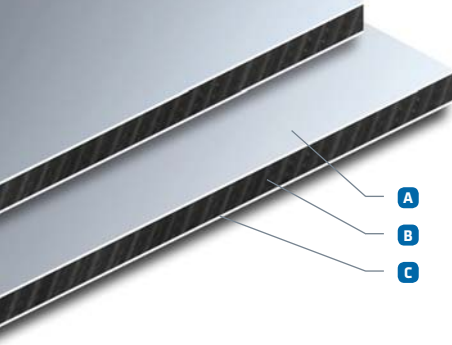
8214
Extrusion

8216
Extrusion

Other extrusions may be required depending upon application.

Envelope2000[®]

Metal Composite Material (MCM)



PRODUCT DESCRIPTION:

Envelope 2000[®] 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 [®] Finishes:	30 years
Anodized Finishes:	20 years

RECYCLED CONTENT:

Under the context of MR Credit 4 for the LEED[®] Green Building Rating System, Envelope 2000[®] 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)
PANEL COMPOSITION		
A Smooth Prefinished Aluminum Face ¹	.024" (min)	.609mm
B Thermoset Phenolic Resin Core ²	.105"	2.67mm
C Primed Smooth Aluminum Backer	.010"	.254mm
WEIGHT / THICKNESS		
Panel Weight	1.33 lbs/ft ²	6.47 kg/m ²
Nominal Thickness	5/32"	4mm
Core Density	89.0 lbs/ft ²	36.3 kg/m ²

¹.024" is the standard aluminum thickness. Some finishes are standard in .032" or .040".

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

TECHNICAL PROPERTIES:

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

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