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■ Installation Notes

Product Description and Intended Application

NorthClad® AL Series panels are designed to be used as external wall cladding supported on shims to form a “rainscreen”. Although the panels will significantly discourage the entry of surface water, some water may enter the ventilated, drained cavity (through the joints between the panels), and must be repelled by the weather resistant barrier (WRB, specified elsewhere).

The function of the cladding is to serve as protection for the waterproofing and as a durable, visually appealing surface. When designing a rainscreen, it is imperative that the designer and contractor are clear about where the drainage plane and actual waterproofing are located. The drainage plane is not at the face of the cladding, but at the face of the sheathing.

All flashing for openings, sealants, and the air barrier must be continuous across the various penetrations for doors, windows, and vents, etc. Integrity of the WRB design can be exhibited by water testing of the walls when covered with a weather resistant barrier (WRB) prior to the application of the rainscreen panels and their support system. The system cannot rely on the face panel (NorthClad® AL Panel), for watertight integrity.

Drained, back ventilated rainscreen design has been proven successful throughout the world and may be appropriate for your project. Following are some requirements and information for your consideration.

Building Requirements

1. External Wall Cladding

When fixed in accordance with the manufacturer’s recommendations, and engineered attachments,

the panels will withstand typical wind loads and transfer these loads to the supporting structure. The panels are not designed to contribute any structural stability to the building. The free flow of air to the cavity behind the panels requires the air barrier to be fully responsible for moderating air movement across the drainage plane. The net effect is that the wall needs to be designed structurally complete and air-tight aside from the application of the NorthClad® AL Panel and its support system.

2. Fire Resistance

Reference IBC 1406 for NorthClad® AL aluminum panel data. Design consideration should be given to any combustible material behind the cladding, which may be exposed during a fire. Determining the combustibility of any materials adjoining the ventilated cavity (e.g. insulation, sheathing panels, and breather membranes etc.) is the responsibility of the project designer.

Cavity barriers may be required under relevant building regulations and technical standards. Additional ventilation may be required above and below these cavity barriers.

The NorthClad® AL rainscreen panel system does not contribute to the fire resistance of any external wall or load bearing structure.

Cladding System Design

NorthClad® recommends that the designer design the building waterproofing utilizing the full technical support of the weather resistant barrier (WRB) manufacturer. Please see Appendix A for recommended WRB products.

Note that special care needs to be taken at all the discontinuities in the membrane (penetrations, flashing, etc). Once the WRB is

complete and intact (including the transitions to windows, doors, foundation, and various penetrations), the installation of the rainscreen cladding can begin.

Delivery, Site Handling and Storage

Upon arrival of your order, inventory and inspect each panel and all accessories; note any damage to panels, packaging, or accessories. If there is any sign of the crating or material being damaged, note the bill of lading at the time of delivery. Failure to do so can make it difficult to file a freight claim. Send a list of damaged materials to NorthClad® and contact your NorthClad® representative for further instructions. It is crucial that damaged panels, accessories, or packaging be reported to NorthClad® as soon as they are discovered.

Panels should be transported on pallets provided by the manufacturer and should be lifted off of any stack individually, taking care that they do not scrape adjacent panels.

Stacked panels should be stored vertically on a clean, flat surface or on pallets with supports spaced at a maximum of 12 inches on center. Panel edges must be aligned for full support. Stack height may be limited by the overall lifting weight. All horizontal surfaces including pallets should be covered with a clean membrane or board to protect the bottom panel in the stack. Unwrapped stacks should be covered with a plastic sheet to protect against moisture and dirt. Baling bands should be removed after delivery.

Panels must be stored in a cool, dry, and well-ventilated covered area.

■ Installation Notes

Preparation of Panels for Use

Panels should be ordered in the standard sizes required and are ready for installation. The protective peel coat must be removed immediately following installation. Panels that will require field modification may be cut with a radial arm saw (or jig saw) with diamond blade as appropriate. NorthClad® panel termination pieces must then be applied with the provided adhesive tape using pressure rollers. Note that field panel modifications should occur only in temperatures above 50° Fahrenheit in order for the adhesive to properly cure.

With prepared panels available for installation, and intact waterproofing on the wall, the installer is ready to install the rainscreen system.

Installing the Panels

1. Inspect and inventory furring and shims, fastener and panel deliveries upon arrival. Check the parts against your shop drawings.
2. A level and plumb plane is required for the installation of the panels. If the substrate is not plumb and square, the installer may use hard plastic shims between the panels and the wall surfaces.
3. The installer must properly layout furring based on panel sizes and coordinate with hard reference points such as windows, doors, and corners, etc. The installer will need to field measure and verify actual project conditions and make any necessary changes prior to fabrication. Allow for thermal movement of 1/8 inch per 5 foot of panel length, typically. A minimum gap of 3/8 inch must be maintained from the

edges of all panels to allow for thermal movement. With a framed substructure, there are two design options: Horizontal furring with shims or shims and direct attachment to the studs. Furring anchors must engage in the framing if using the horizontal furring with shims (Fig. 1).

4. Start by installing the bottom vent strip. Note that the panels should not be used as roofing or in any position where they are in direct contact with ground moisture. Also, vent space is required under window sill flashing and under coping.

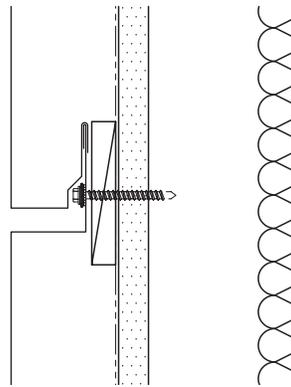


Fig. 1 · Panel Fasteners must fully engage wall framing

5. Ventilation spaces should allow for uninhibited vertical airflow. Every linear foot of horizontal opening (including vent screens, flashing, parapet caps, etc) should have at least 2.36 square inches per foot of ventilation between every uninterrupted vertical cladding section.
6. Establish a level starting position and use removable shims or blocking when setting panels to ensure proper joint spacing. Joints shall be equal or in accordance with shop draw-

ings. When installing, ensure that the correct orientation is used for each panel.

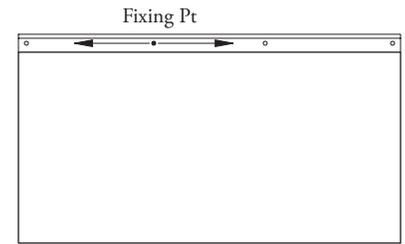


Fig. 2 · Each panel should have a single fixing point. The remainder of the holes should be slightly larger than the fasteners.

7. Place the panel on the wall and secure its position. Ensure that the panel fasteners are properly centered in panel holes. Each panel should have one fixing point (a smaller hole than the others) that controls the point of expansion and contraction (Fig. 2). All fixing points should be located in the same position for adjacent panels. Corner fixings should be located not more than 6 inches from either edge of the panel. Do not over tighten the screws or stripping or shearing the fastener head might occur. NorthClad® provides engineering services on a separate contract basis. It is normally the project structural engineer's responsibility to confirm size and frequency of attachments. The panels are not designed to support any vertical loads. If any heavy objects are to be supported by the panels, or if they are to be subject to extra mechanical stress, additional measures may need to be taken, please consult NorthClad® directly for assistance.

■ Installation Notes

Care and Maintenance

The panels may be washed down or cleaned with soft cleaning agents such as a mild detergent and water. Abrasive, highly acidic or alkaline products should not be used.

In the unlikely event that a repair is necessary to the panels, please consult NorthClad® directly for the proper methods.

NorthClad® Online

Find installation details, product specifications, warranty information, and more on our web site: www.NorthClad.com.

■ Appendix A

Weather Resistant Barriers

Rear Ventilated Facade Systems and WRB Overview

Conventional, single line barrier systems function by attempting to completely seal the building and create a single, universal layer of protection against every force. This barrier is prone to be unsuccessful as the integrity and effectiveness of this system rely heavily on the installation. Even in systems utilizing a secondary gutter backup system, the long term integrity lies with the resilience of the internal seals and the quality of workmanship at the time of installation.

Unlike conventional wall design, rear ventilated façade systems function by deflecting most precipitation, while the limited amount of moisture that enters the ventilated cavity may dry easily. It is important to note that NorthClad® rainscreen panels and their respective substrates do not provide a waterproof barrier and thus must be used in tandem with a weather impenetrable membrane. Although water will enter the ventilated cavity with the free flow of air through the system, it will quickly be dried by the constant ventilation. These system are designed so that the open back cavity will mitigate the problems created by trapped water such as corrosion and mold, but only if an effective element barrier is also employed. (e.g. Henry® Air-Bloc® 33)

Henry® Air-Bloc® 33, an air and watertight barrier which allows for the passage of water vapor, is one product that may be used as an element barrier to accompany a NorthClad® rainscreen system. Air-Bloc® 33 may be applied with a trowel or by spray, and must be used with a transitional membrane such as Blueskin® in order to adequately prevent moisture from penetrating the system. Any technical questions regarding the Air-Bloc® 33 should be directed to Henry®.

Tyvek® Commercial Wrap

DuPont®
1007 Market St.
Wilmington, DE 19898

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Air-Bloc® 33 Membrane

Henry® Company
909 N. Sepulveda Blvd., Ste 650
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(310) 955-9200

VaproShield® Membranes

VaproShield®, LLC
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