



Technical Bulletin: 03/28/2023

Mounting Fiber Cement Panels in a Rainscreen System

Summary

Rain screen cladding systems aim to protect a building's wall construction from damages that can occur through moisture penetration. The air cavity design behind a cladding material allows air to flow through the space, which dries the insulation as well as the back of the cladding panel.

The fiber cement product line offered by American Fiber Cement Corporation is installed as a rain screen system. As the system mitigates mold and other moisture related issues in a wall, the fiber cement panels also benefit from the use of a rain screen to keep them dry and thus, preserve their look and composition.

The panels are attached to the wall substrate with horizontal and vertical profiles, which hold the panel's 3.2 lbs./ft² of dead load as well as the wind load forces on the panel. The vertical channels provide a desired chimney effect, which produces air flow along the wall cavity.

What's the issue?

When installed properly, a fiber cement panel in a rain screen application requires virtually no maintenance. The high-density panels can survive the life of the building.

To keep moisture off the back of the panels, they must be installed with a vertical profile; a horizontal profile cannot be attached directly to the back of the panel. The reason is the water that enters the system through the open joints lingers on the horizontal profile before the droplets can get dried up (see Figure 1).

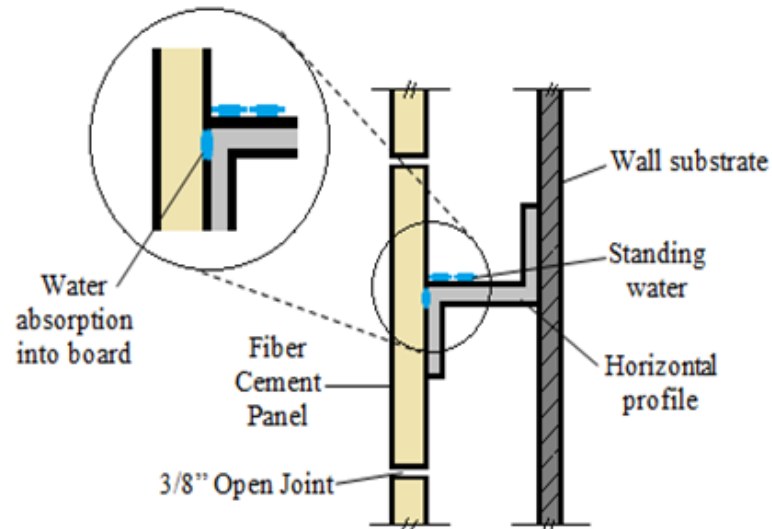


Figure 1: Improper Installation

If the panel is attached in this configuration, the water has nowhere to fall but into the panel. With continuous exposure to this lingering moisture, the fiber cement boards absorb in the water which in turn can create problems in the appearance of the panels. This is particularly prevalent during construction, when the system is completely exposed to nature's elements, specifically before the parapet walls are finished and properly flashed.

Even horizontal profiles with weep holes are problematic. The water lies between the holes in the crevice of the horizontal profile and the rear of the panel. The Knight Wall System with horizontal profiles attached to verticals is not a suitable fiber cement panel attachment system because it does not solve the standing water effect.

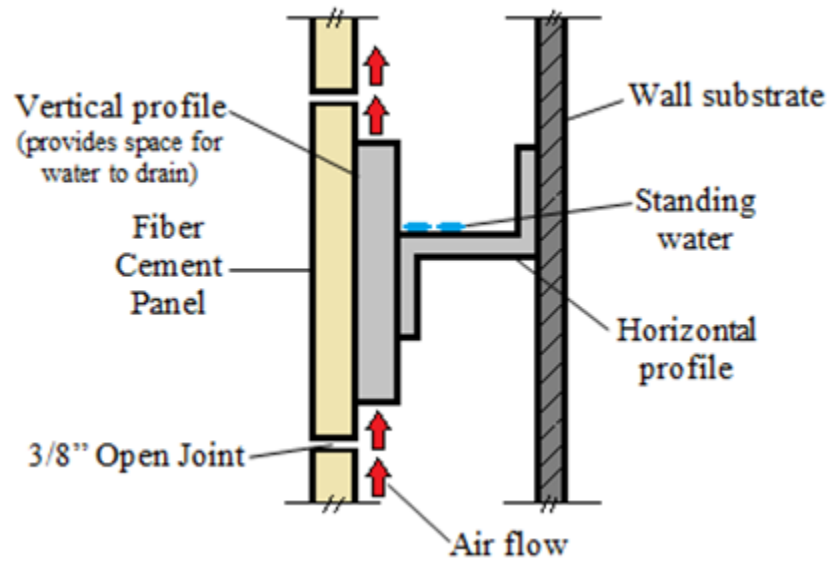


Figure 2: Proper Installation (Two Layer System)

What to do?

The solution is simple – always attach the back of the cladding to a vertical profile (Figure 2). This Z or hat profile may be small, but it is crucial to allow for adequate air flow to prevent moisture retention on the panels. Attachment configurations may be solely vertical profiles or horizontal profiles with verticals (refer to Figure 3). See AFC’s vast set of [standard detail sets](#) for proper detailing.

This rain screen attachment system is designed to last. With proper care and up-front considerations during installation, the fiber cement panels can be enjoyed for numerous years on the building.

For any questions, concerns, or additional information, please contact American Fiber Cement Corporation:

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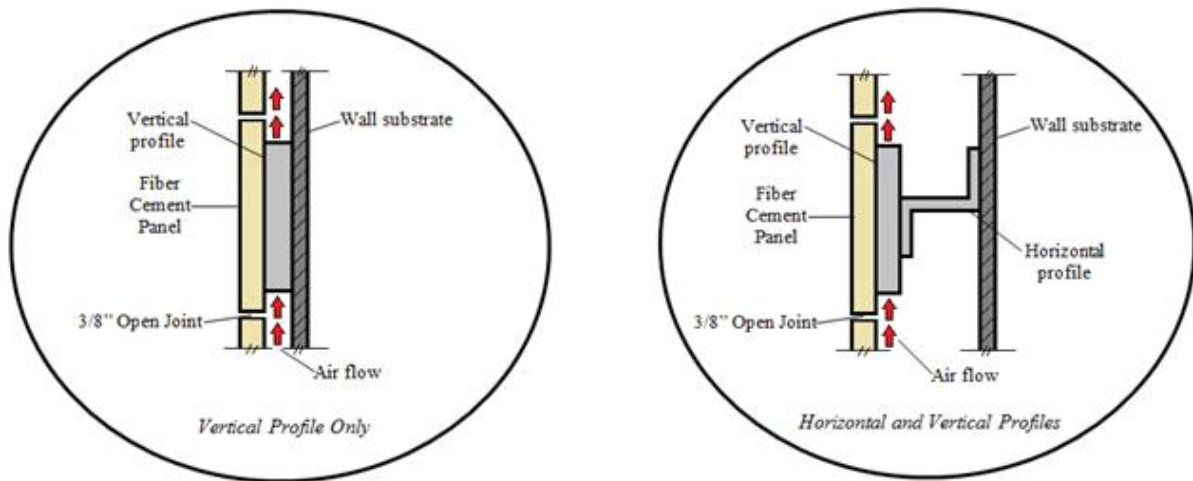


Figure 3: Acceptable Attachment Configurations