

FASTENER GUIDE

for DuPont™ ArmorWall™ Systems



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DUPONT™

DuPont™ ArmorWall™ Systems

Fastener Guide

General Requirements

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Due to the unique properties of the **DuPont™ ArmorWall™ System** and its components, it can be installed within various wall assemblies on many substrates, and at many locations that other systems cannot. Such diversity oftentimes can become confusing, so we at DuPont have developed this Fastener Guide to aid the installer and designer in understanding the correct fastener for each application.

There are two types of mechanical attachments when installing **ArmorWall™ Systems**. The first type is used when attaching the panel to the structure, and the second attachment is the cladding to the face of the panel. It is important to note that this document does not cover all possible applications and circumstances. We encourage you to contact customer service prior to installation of the sheathing or cladding should you find your specific application is not listed.

Once you have decided on the type of **ArmorWall™ System** and the desired R-Value (panel thickness) to specify and install, you must then determine the fastener type that has been tested and approved for use with the **ArmorWall™ System**. All **ArmorWall™ System** installations and cladding attachments should use Concealor® type screws that are readily available from many common distributors such as Triangle Fastener, online warehouses, or even directly from **DuPont**.

All sheathing and cladding attachment screws are either Tri-Seal® coated by Concealor®, 300 series stainless steel, or other DuPont approved fasteners which provide long term resistance to corrosion and salt water spray.

It should be noted that **DuPont** does not readily stock all types of fasteners in large bulk quantities but can usually have them ready for most orders within 2-3 business days. Orders can be shipped direct to the customer to expedite the time required for the material delivery if needed.



Screw Use Tables



Structure Key	
Concrete	Green
Steel /Concrete	Orange
Wood / Steel Studs (18 gauge* and lighter)	Purple
Steel Studs (18 gauge* and heavier to 1/4" Steel)	Cyan
Wood	Yellow

*Installers may use either DP1 or DP3 screws for 18 gauge steel.

ArmorWall™ Sheathing Attachment to Substrate: Screw Use Table								
ArmorWall™ Product	Concealor DP-1 3"	Concealor DP-1 4"	Concealor DP-1 4.5"	Concealor DP-1 5"	Concealor DP-1 6"	Concealor DP-3 3"	Concealor DP-3 4"	Concealor DP-3 5"
ArmorWall Plus 2" 2 3/4" 3 3/4"								
ArmorWall SP Plus 2 3/4" 3 3/4" 4 1/4"								
ArmorWall BG 2" 2 3/4" 3 3/4"								

ArmorWall™ Cladding Attachment: Screw Use Table			
Cladding Material Connection Type	Concealor ULP	Concealor Pancake Head	Stainless Steel 304/ 316 or equivalent
RainScreen Clips (metal)			
RainScreen Clips (composite)			
Metal Stand-off Channels			
Wood Furring Strips			
Window/Door Returns			
ArmorBoard			

Attachment To Substrate:

Use a 3/16" bit when pre-drilling holes for concrete structure applications.

Cladding Attachment:

Do **NOT** use impact driver.
Use variable speed drill.
Adjust and lower the torque so that the cladding fasteners do NOT spin.

* Stainless Steel 304/ 316 or equivalent. The customer is responsible for assessing galvanic corrosion risk when using stainless steel fasteners. Consult DuPont if needed.

Sheathing Screws



Concealor® DP1

The DP1 screw is primarily used when affixing **ArmorWall™** to the structure, whether 18 gauge and lighter steel, wood, or concrete/CMU.



#2 Square Recess Drive



#14-13 x 3" DP1 Pancake Head Screw



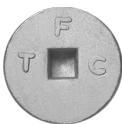
#14-13 x 4" DP1 Pancake Head Screw



#14-13 x 5" DP1 Pancake Head Screw



#14-13 x 6" DP1 Pancake Head Screw



#3 Square Recess Drive



1/4-14 x 3" DP3 Pancake Head Screw

Concealor® DP3

Similar to the DP1, the DP3 screw is used for affixing **ArmorWall™** to the structure, however, it is meant for 18 gauge steel studs and heavier, and up to 1/4" thick steel members.



1/4-14 x 4" DP3 Pancake Head Screw



1/4-14 x 5" DP3 Pancake Head Screw



1/4-14 x 6" DP3 Pancake Head Screw

Sheathing Screws

There are primarily two different sub-types of screws used to attach an **ArmorWall™** panel to the substrate. They are broken down into DP1 or DP3 screws, whereas the DP3 screw is slightly larger than the DP1 screw. The DP3 screw type also has a larger and more aggressive drill tip allowing it to penetrate into red iron steel and 16 gauge and heavier studs than the DP1. One advantage with the smaller DP1 screw is

that the screw can be utilized in all types of substrates such as wood, concrete, and 18 gauge and lighter steel studs. The ease of application can allow an installer to seamlessly transition from one substrate to another without having to change out the tool pouch.



Concealor® DP1

The DP1 screw is designed for installation into steel (up to 18 gauge and lighter), wood, and concrete substrates. When installing into steel substrates, the screw shall be long enough to show, at a minimum, (3) threads on the interior of the steel. When installing into wood or concrete, there should be at least 1" of full thread penetration into the substrate material which requires approximately 1-3/8" total fastener penetration. Installation into concrete requires pre-drilling the concrete with a 3/16" bit at least 1/4" beyond the embedment depth

Concealor® DP3

The DP3 screw is designed for 16 gauge and heavier load bearing steel construction and red iron attachment points. The screw contains an integrated cutting tip to make short work of installation into the steel up to 1/4" in thickness with the appropriate tooling. The DP3 screw is designed with #3 Square Drive Head to allow the installer to provide greater torque on the fastener when installing into harder substrates.

Similar to the DP1 fastener, upon final seating the DP3 should be proud to the panel and there must be at least (3) threads showing on the opposite face of the steel substrate. The fastener should not be driven into the face of the panel. DP3 fasteners are not designed for installations other than to steel.

Cladding Attachment Screws



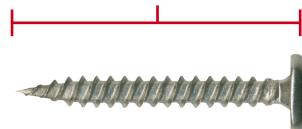
Pancake Head Screw*

The #10-9 and #10-13 Pancake Head fasteners have been successfully tested to attach exterior cladding to the face of the ArmorWall™ panel.

#10-13 x 1-1/2" Coated Pancake Head Screw



#10-13 Stainless Steel 304/ 316 or equivalent Pancake Head Screw



#10-13 x 2" Coated Pancake Head Screw



#2 Square Recess Drive

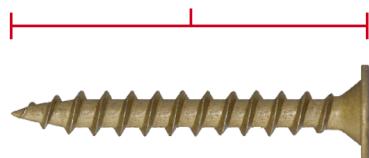
#10-13 Stainless Pancake Head Screw*

The customer is responsible for assessing galvanic corrosion risk when using stainless steel fasteners. Consult DuPont if needed.

Ultra Low Profile Screw*

The #10-9 Ultra Low Profile Head fasteners are best used when not attaching steel clips or anchors. This includes wood furring strips or similar compression material.

#10-9 x 1-5/8" Ultra Low Profile Head Screw



#10-9 x 2-1/8" Ultra Low Profile Head Screw



#2 Square Recess Drive

*Do **NOT** use impact driver. Use variable speed drill. Adjust and lower the torque so that the cladding fasteners do **NOT** spin.*

Cladding Attachment Screws

Similar to the sheathing attachment screws, there are two different types of cladding attachment screws. There is a Pancake Head screw and an Ultra Low Profile screw. While each screw has their own attributes, they both share similarities that should be observed.

From a fastening standpoint, **ArmorWall™** panels perform more like a wood-based

sheathing. Self-tapping screws used for pre-drilling into metal are not acceptable cladding fasteners to **ArmorWall™** panels. The ULP and Pancake screws are designed with more aggressive threads. If installing railings or feet attachments that are not pre-drilled to **ArmorWall™** panels, pre-drilling may be required prior to the installation of claddings.



Pancake Head Screw

The Pancake Head screw is designed for attachment of metal, steel, or aluminum clips directly to the **ArmorWall™** panel sheathing. The pancake head design allows the screw to fully seat the sub-framing attachment onto the face of the sheathing layer resulting in greater fastener withdrawal and wind resistance forces in high wind load environments. The tip is designed to pierce 22 gauge steel and lighter clip or rail if not pre-drilled prior to installation.



Ultra Low Profile Screw

The Ultra Low Profile Screw is designed to leave a head with minimal protrusion once installed. The bugle shape allows the screw to self-seat flush into the **ArmorWall™** panel sheathing while not interfering with the subsequent material layer.

Ultra Low Profiles (ULPs) are most commonly used to attach materials that are less rigid when compared to the Pancake Head because of their ability to maintain that flush condition. The sharp gimlet point on the ULP fastener can pierce steel clips 24 gauge thick and lighter subframing.

ArmorBoard Fire-Rated (FR) Structural Sheathing Returns

When attaching **ArmorBoard Returns** to the back-up framing system, standard stainless steel drywall screws can be used. Non-coated steel drywall attachment screws are not approved for use within the **ArmorWall™ System**.

While attaching with standard stainless drywall screws, structural attachment of cladding or other elements directly to the returns is not approved without special approval from

customer service prior to installation.

It is recommended to install all claddings and elements directly through the board into the structural element beyond when using non-insulated **ArmorBoard Returns**.

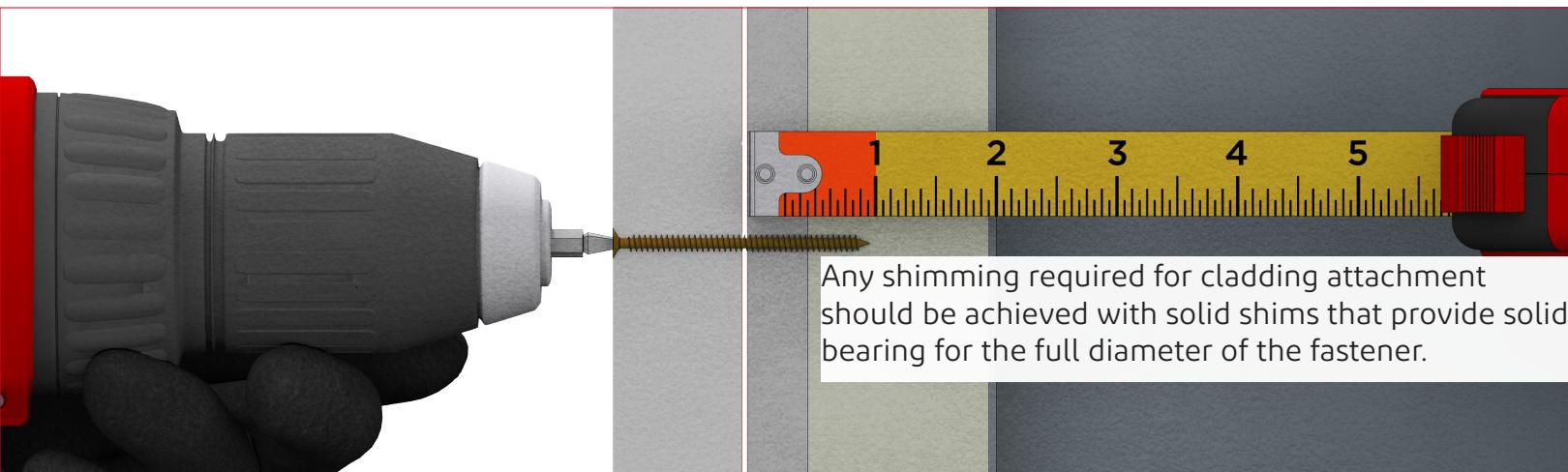


Cladding Attachment Screws



Follow the guidelines below when attaching cladding fasteners to Armorwall™

- Do **NOT** use Impact driver
- Use variable speed drill, and
- Adjust and lower the torque so that the screw does **NOT** spin



Cladding attachment screws shall extend through the structural layer of the **ArmorWall™** panel, and into the foam beyond with a minimum of 1" total embedment. If the cladding requires substantial shimming due to wall framing deficiencies, then ensure that the screw

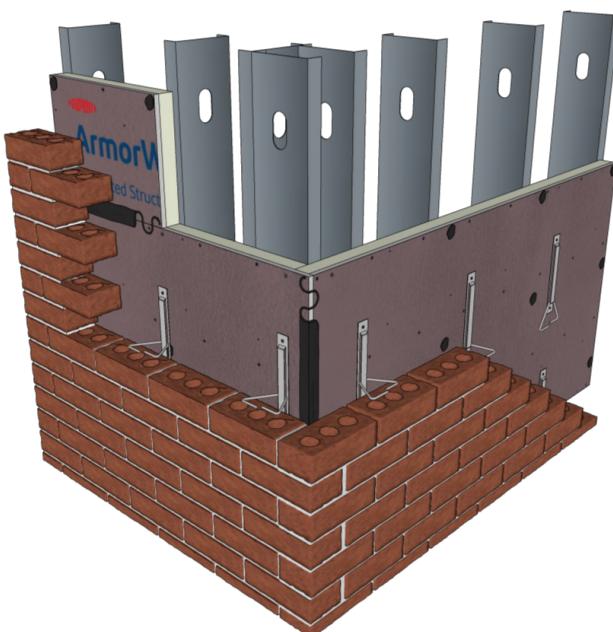
is long enough to attain the required minimal embedment into the **ArmorWall™** panel. Screws should not extend through the inner facer layer of the foam insulation.

Other Fasteners



Hohmann & Barnard DW-10 HS

Due to the unique structural ability of **ArmorWall™ Systems**, brick ties containing at least two fastening points, such as the Hohmann & Barnard DW-10 HS can be attached directly to the sheathing without the need to attach into a stud, for bracing of wind and seismic only.



Face Brick / Full Bed Masonry

DuPont is working with Hohmann & Barnard on adopting the special attachments for brick anchors within the **ArmorWall™ System**.

ArmorWall™ panels have demonstrated performance with meeting the deflection requirements to support face brick elements within the sheathing and alternate installation methods.



For more information visit us at
armorwall.dupont.com
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