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ARMORWALL FIRE-RATED STRUCTURAL INSULATED SHEATHING™ FASTENER GUIDE

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ArmorWall Fastener Guide

General Requirements



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

There are two types of mechanical attachments when installing ArmorWall Fire-Rated Structural Insulated Sheathing™. 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.

ArmorWall

Fire-Rated Structural Insulated Sheathing™



Once you have decided on the type of ArmorWall 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 ArmorWall. All ArmorWall 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 MaxLife Industries.

All sheathing and cladding attachment screws are Tri-Seal coated by Concealor, providing long term resistance to corrosion and salt water spray. Both the sheathing and cladding attachment screws are recessed #2 Square Drive Heads, except for the DP3 screw which is a #3 Square Drive Head for greater torque.

It should be noted that MaxLife 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
Wood / Steel / Concrete	Red
Steel Studs (18 gauge* and heavier to 1/4" Steel)	Blue
Wood / Steel Studs (18 gauge* and lighter)	Purple

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

ArmorWall Sheathing Attachment to Substrate Screw Use Table								
ArmorWall Product	Size	Concealor DP-13"	Concealor DP-14"	Concealor DP-15"	Concealor DP-16"	Concealor DP-3 3"	Concealor DP-3 4"	Concealor DP-3 5"
ArmorWall Fire-Rated Structural Insulated Sheathing™	2"	Purple	Green			Blue		
	2 3/4"		Purple	Green			Blue	
	3 3/4"			Purple	Green			Blue
ArmorWall Plus Fire-Rated Structural Insulated Sheathing™	2"	Purple	Green			Blue		
	2 3/4"		Purple	Green			Blue	
	3 3/4"			Purple	Green			Blue
ArmorWall BG Fire-Rated Structural Insulated Sheathing™ Below Grade	2"	Purple	Green			Blue		
	2 3/4"		Purple	Green			Blue	
	3 3/4"			Purple	Green			Blue
ArmorWall SP Fire-Rated Structural Insulated Sheathing™ Symmetrical Panel	2 3/4"		Purple				Blue	
	3 3/4"			Purple				Blue
	4"				Purple			Blue
ArmorWall PB Fire-Rated Structural Insulated Sheathing™ PermaBase®	2"		Red				Blue	
	2 3/4"			Red				Blue
	3 3/4"				Red			Blue

ArmorWall Cladding Attachment Screw Use Table			
Cladding Material Connection Type	Concealor ULP	Concealor Pancake Head	Stainless Drywall Screw
Rainscreen Clips (metal)		Red	
Rainscreen Clips (composite)	Blue		
Metal Stand Off Channels		Red	
Wood Furring Strips	Blue		
IQBrick Panels	Blue		
DW-10 Brick Anchors	Blue		
Window/Door Returns			Purple
ArmorWall Board			Purple

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

CLADDING ATTACHMENT:
* Do NOT use impact drives to install cladding attachments to ArmorWall panels. Use torque control variable speed screw driver. Most common setting control is (11) for torque.

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



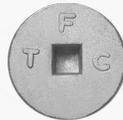
#14-13 x 4" DP1 Pancake Head Screw



#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



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



Concealor DP3

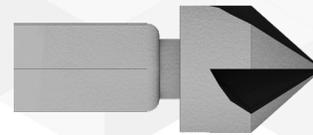
Similar to the DP1, the DP3 screw is used for affixing ArmorWall to the structure, however, it is meant for 18 gauge steel studs and heavier, and up to 1/4" thick steel members.

Sheathing Screws

There are primarily two different sub-types of screws used to attach ArmorWall Structural Insulated Sheathing 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.

It should be noted that the fasteners are designed to attach proud of the face of ArmorWall and not be recessed into the board. Countersinking of the sheathing fasteners must be done using a countersink bit prior to fastener installation and be completed only with MaxLife Industries approval in special circumstances.



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 penetration into the substrate material. Installation into concrete requires pre-drilling the concrete with a 3/16" bit at least 1/4" beyond the embedment depth of the screw.

Concealor DP3

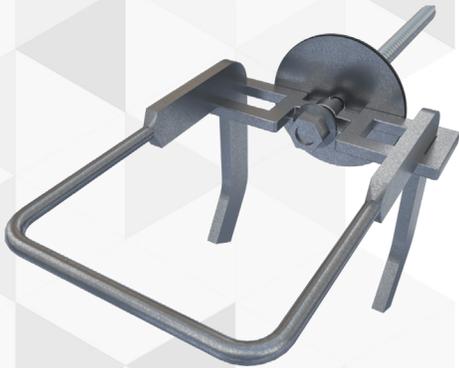
The Concealor DP3 screw is designed for 16 gauge and heavier load bearing steel construction and red iron attachment points. The screw contains an integrated cutting tip to make short work of installation into the steel up to 1/4" in thickness with the appropriate tooling, such as impact drills. The 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.



Hohmann & Barnard Adjusto-Tie

The Adjusto-Tie adjustable veneer anchor from Hohmann & Barnard combines both a tested and approved ArmorWall fastener and a reliable brick tie.

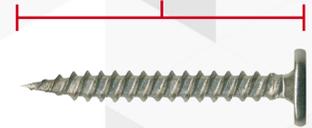
Ultra Low Profile Screw

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.

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



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



#10-13 x 2" Coated Pancake Head Screw



#2 Square Recess Drive

#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

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 performs more like a wood-based sheathing. Self-tapping screws used for pre-drilling into metal are not acceptable fasteners to ArmorWall. The ULP and Pancake screws are designed with more aggressive threads. If installing railings or feet attachments that are not pre-drilled to ArmorWall, 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 sheathing substrate. 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 if not yet 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 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. ULPs have been specifically tested for use with IQBrick and wood furring strips to the face of ArmorWall. The sharp gimlet point on the ULP fastener can pierce steel clips 24 gauge thick and lighter.

ArmorBoard and Returns

When attaching ArmorBoard and ArmorWBoard 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 board or returns is not approved without special approval from customer service prior to installation.

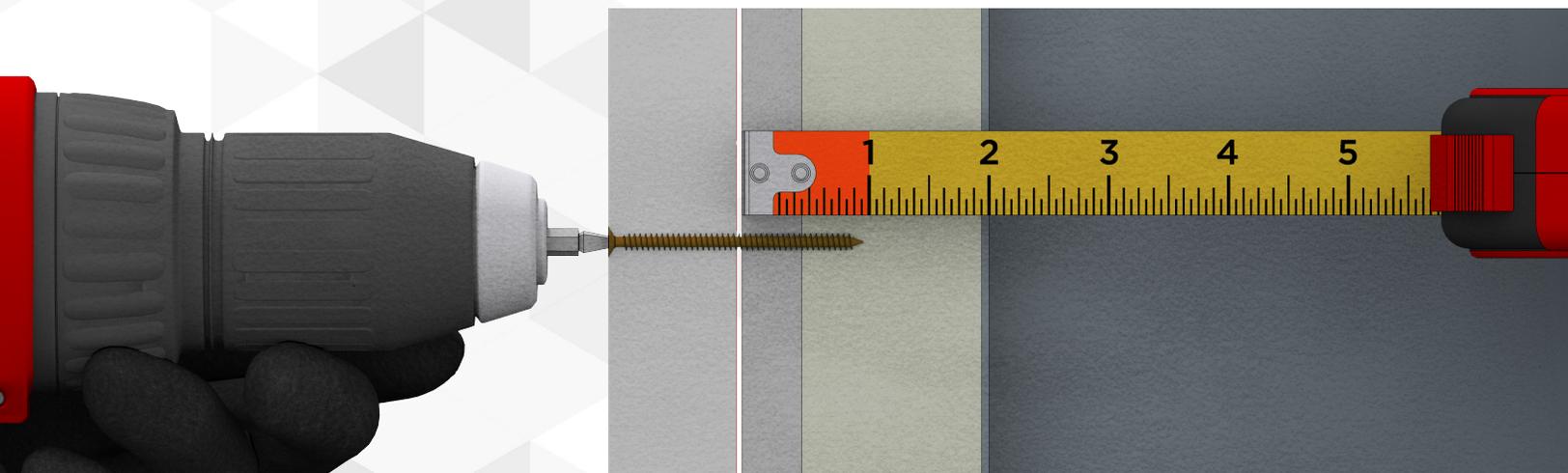
It is recommended to install all claddings and elements directly through the board into the structural element beyond when using the non-insulated versions of the ArmorWall system.



Cladding Attachment Screws



Always remember when fastening to ArmorWall, cladding attachment screws of any type shall never be installed with an impact tool. Cladding attachment screws should be installed with an adjustable speed screw driver with the torque control reduced to a typical setting of (11) on many cordless screw guns. If the screw is sufficiently snug to the material attachment at the panel surface and the driver setting contains enough torque to still spin the screw, then the torque should be reduced as needed so that the screw does not continue to spin.



Cladding attachment screws shall extend through the structural layer of ArmorWall, 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 ArmorWall. Screws should not extend through the inner facer layer of the foam insulation; this provides further redundancy and retains water resistance of the ArmorWall system.

Other Fasteners



Hohmann & Barnard DW-10 HD

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

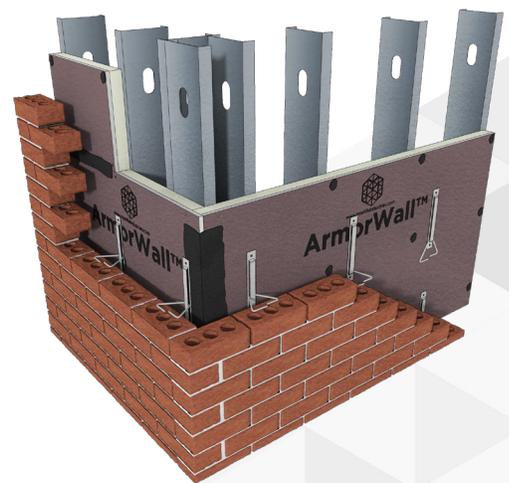


Hohmann & Barnard Adjusto-Tie

Adjusto-Ties (directly above) were developed for the specific purpose of insulated panel materials that have the WRB on the exterior face. These screws allow the user to further combine more steps into one motion by fastening ArmorWall and the brick tie at the same time to the substrate. With the integrated neoprene washer, sealant is not required at the fastener heads as demonstrated by passing ASTM E331 water and air testing.

Face Brick / Full Bed Masonry

MaxLife has partnered with Hohmann & Barnard on adopting the special attachments for brick anchors within the ArmorWall system. ArmorWall does not support the dead load of full face brick, shelf angles and relieving angles. These items shall be designed to bear on footings and structural elements beyond ArmorWall. However, ArmorWall has demonstrated performance with meeting the deflection requirements to support face brick elements within the sheathing and alternate installation methods.



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