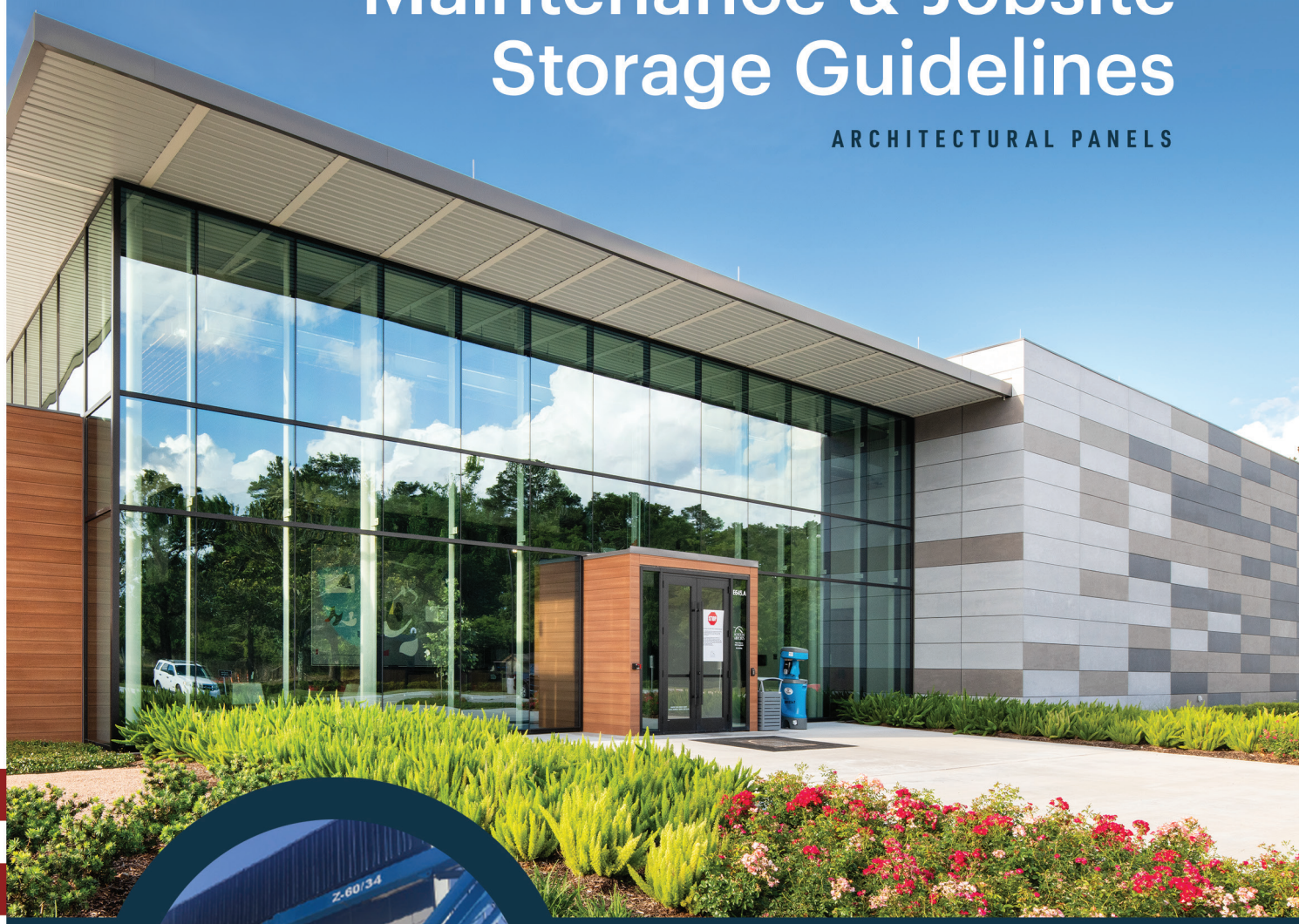
AMERICAN FIBER CEMENT

Fabrication, Maintenance & Jobsite Storage Guidelines

ARCHITECTURAL PANELS



2-3 CARE & MAINTENANCE
4-5 CUTTING INSTRUCTIONS
6-7 EDGE FINISHING
8 STORAGE AND HANDLING OF FLAT SHEETS

These guidelines show how to manage AFC Surface (formerly Cembrit Cover), AFC Rustic (formerly Cembrit Deco), AFC Minerit (formerly Minerit HD), AFC Stone (formerly Cembrit Patina), AFC Core (formerly Cembrit Solid), and AFC Matte (formerly Cembirt Transparent) on-site. This includes proper storage, handling, fabrication, edge sealing, and edge painting. Installation guidelines for these product lines can be found at **americanfibercement.com**.

Note: The online copy of the Installation Guidelines obtained at americanfibercement.com supersedes any printed copy.

Care & Maintenance

After Installation

Annual Inspection

Normally, façade boards do not require any maintenance. Weathering, however, may influence the appearance of the façade. Therefore, an annual inspection of the ventilation gaps, joints, and fixings is a good idea. Detection and repair of possible damage ensures a prolonged lifespan for the façade.

Cleaning

AFC façade boards can be cleaned with cold or lukewarm water with the addition, if necessary, of a mild household cleaning agent not containing solvents. Rinse with plenty of clean water until the façade boards are perfectly clean. Before cleaning full scale, it is recommended to test the chosen cleaning method on a smaller area, to ensure it works and does not damage the surface of the boards.

High-Pressure Cleaning

Warning! High-pressure cleaning is a severe treatment for a fiber cement façade. Exaggerated or incorrect use of a high-pressure cleaner may damage the surface.

Moss and Algae

Moss and algae growth can be removed with common agents available on the market. Care should be taken to ensure that the cleaning agent does not cause damage to the surface of the AFC façade boards.

Confirm the compatibility of your cleaning agent with your cleaning agent supplier, and ensure it is applied according to the supplier's instructions. It is advised that before conducting a large-scale application, a test is carried out on a small, inconspicuous area to ensure that the cleaning agent has no effect on the color of AFC façade boards.

Efflorescence

Efflorescence is a naturally occurring, white, powdery deposit that can appear on cement-based building materials (including bricks, cement walls, grout, and fiber cement). It is the result of a process in which moisture draws salt crystals to the surface, evaporates, and leaves a chalky substance behind. Efflorescence occurs when all three of the following conditions exist:

- Water-soluble salts are present in the building material.
- There is enough moisture in the wall to turn the salts into a soluble solution.
- There is a path for the soluble salts to get to the surface.

Efflorescence may also be a sign of water ingress behind the façade. Make certain that all openings are properly covered and there is no water intrusion due to over-driven nails.

While some efflorescence may weather away naturally on its own, it is best to take steps to treat it. Efflorescence can be removed with household white vinegar and water. For most cases of efflorescence, Steps 1 – 3 work well. But for substantial deposits of efflorescence, go to Step 4.

For best results, follow these cleaning instructions:

- Protect areas that are not to be cleaned. Rinse all plants and vegetation around the façade with water before and after application of the vinegar.
- Generously coat the entire surface area with vinegar. Allow the solution to sit on the surface for 10 minutes.
- Rinse the treated area thoroughly with water from the top down and allow the area to air dry.
- For extra tough efflorescence: Use a 10% acetic acid solution and apply to the affected area with a cotton cloth. A light scrubbing with the cotton cloth may be required. After about 20 seconds, rinse with water.

On-Site

Cleaning of boards after cutting and drilling

It is important to immediately remove dust caused by cutting and drilling from the front and rear of the boards with a soft brush/duster or a vacuum cleaner, as it otherwise might damage the boards. Ensure that the boards are properly cleaned before installation, and if necessary use clean water or water with a mild detergent and a soft sponge or brush to remove dirt and dust from the surface. Thereafter, wipe the boards with a damp cloth. It may also be necessary to wash the surface after installation if the building site conditions have been unfavorable. This is done with lots of clean water or water with a mild detergent and a soft sponge or brush and finally wiping the boards with a damp cloth.

Removal of calcium-based residues

Calcium carbonate residue may occasionally be seen on the board surface. This can be difficult to remove with water or even with detergents because it does not dissolve in water. For cleaning purposes, 10% acetic acid (CH3COOH) solution is used to dissolve the calcium compounds.

Note! Carefully observe safety precautions (MSDS) when working with acetic acid. R-phrase R36/R38 is valid: "Irritating to eyes, respiratory system and skin". Use proper clothing, nitrile rubber gloves, eye protection goggles, and approved respirator (filter A, E, or A/E).

Carry out the mixing outdoors

Apply the diluted 10% acetic acid solution evenly with a spray can to the surface of the stained board. Leave it to react for a few minutes. Do not allow the solution to dry, but rinse with lots of clean water. Repeat the process if necessary and rinse with water afterward.

Note! Do not execute the cleaning process with acetic acid in direct sunlight or on hot surfaces. This might create permanent stains. Neighboring areas such as windows and glass must also be cleaned.

Cleaning of neighboring areas

Windows and glass in particular, but also other adjacent areas, must be kept clean during the façade board installation and, if necessary, protected with plastic film. Alkaline leaching from cement bonded materials (dust from cutting or drilling holes in structural concrete, etc.) is prone to damaging glass and other materials. Therefore, frequent cleaning during and after the construction period is needed.

Surface damages and scratches

Damages and scratches should be avoided by lifting the boards off the pallet and handling them carefully during installation. Scratches might leave white streaks on the surface which will turn dark when exposed to rain, because the board absorbs water through the scratch. Repair paint is not available. The only way to prevent dark stripes or spots is to carefully apply clear AFC Edge Sealer onto the scratch with a thin brush (does not apply to AFC Stone, Groove, and Blast boards). In any case the dark area will diminish after 6 to 12 months, because of the carbonation reactions in the cement matrix of the board.

Behavior in wet conditions

Since the boards are made of Portland cement, their color may turn darker when exposed to rain if the board absorbs moisture through holes, scratches or insufficiently sealed edges. This is natural behavior for any cement-based product, and it does not affect the integrity or long-term durability of the board. The original color is restored as soon as the boards dry out. The darkening will show after heavy rainfall for the first months after installation. It will gradually reduce within 6 to 12 months, because the cement-based matrix reacts with carbon dioxide from the atmosphere—carbonation— and thereby reduces water penetration.

Cutting instructions for using a circular saw for a straight cut

Summary

When making 'straight' cuts on AFC boards, a circular diamond blade saw should be used in order to achieve excellent results. AFC offers 7 ¼" Diamond Saw blades for purchase.

Equipment

- Wide diameter, Circular Diamond Saw Blade
- Solid and stable cutting surface (dust free) with several pieces of 1½" framing lumber used to elevate AFC boards above the table height. Clamping the framing lumber supports and the board to the work surface will help reduce vibration of the piece being cut. Be careful not to damage the board surface with the clamp.
- Sandpaper: 60–100 grit

Set-Up

- Use several pieces of framing lumber to provide support of the board on both sides of the cut line sufficient to keep the board from binding as the cut is made (for cuts in the center section of the panel).
- Place the board, face side DOWN on top of the framing lumber with pieces of the framing lumber on either side of the cut line, no more than 2" on either side of cut. For cuts at either end of the panel, do not extend panel more than 2" beyond the supporting lumber. Make sure the panel is gently placed onto the surface with no sliding. Once placed, carefully clamp the panel.
- Make provisions for capturing dust that will be generated by the saw kerf.

AFC Offered Saw Blade

Recommended Turn Rate: 3200-3300 rpm

Cutting

- When cutting with the diamond blade, turn down the turn rate of the saw and lower the feed rate to reduce heat (heat can cause non-linear cuts and can burn the fiber cement).
- Set saw blade to be perpendicular to the cut surface.
- Be certain that the framing lumber completely supports the drop piece to prevent break-off at the end of the cut.
- After the cut is complete, use sanding block along the edge to remove any burrs that may have lifted during cutting. Angle the sanding block away from the front face of the panel.
- Once complete, wipe off any dust seen on the backside of the panel with a microfiber cloth. Then flip the panel face-side up and remove any dust that may be on the surface of the panel.
- For AFC Surface, AFC Core, and AFC Matte, Edge Sealer must be applied to the field cut edge. See page 6. For AFC Rustic, the field cut edge must be painted. See page 7.

Drilling

- Fixed Point Hole Size = 21⁄64" (rivets) or 13⁄64" (screws)
- Gliding Point Hole Size = 12mm (rivets) or 5⁄16" (screws)
- AFC offers long-lasting carbide drill bits.
- See AFC Installation Guidelines for correct fixed/ gliding point hole placement, edge distance restrictions, and maximum on center spacing.
  - Place fiber cement panel face up on top of the framing lumber.
  - Measure and mark hole locations.
  - Drill holes with the correct sized drill bit.
  - Remove excess dust with a microfiber cloth or blow the dust off.

Once done cutting, drilling, and sealing (if necessary), store the panels laying flat in a waterproof environment until being installed on the wall.

Cutting instructions for when a straight cut using a circular saw is not possible

Summary

When making 'non-straight' cuts on boards (for example, cutting a scribed line to match an irregular floor or window ledge) readily available tools can be used to achieve excellent results by using some special techniques.

Equipment

- Construction grade jig (sabre) saw such as Bosch JS 365 with speed control settings and variable speed trigger
- Carbide grit jigsaw blade (30 grit) similar to Vermont American item #30004
- Painter's masking tape similar to 3M Blue
- Solid and stable cutting surface (dust free) with several pieces of 1½" framing lumber used to elevate boards above the table height. Clamping the framing lumber supports and the board to the work surface will help reduce vibration of the piece being cut. Be careful not to damage the surface with the clamp.
- Sandpaper: 60–100 grit

Set-Up

- Use several pieces of framing lumber to provide support of the board on both sides of the cut line sufficient to keep the board from binding as the cut is made (for cuts in the center section of the panel).
- Place the board, face side UP on top of the framing lumber with pieces of the framing lumber on either side of the cut line, no more than 2" on either side of cut. For cuts at either end of the panel, do not extend panel more than 2" beyond the supporting lumber.
- Make provision for capturing dust that will be generated by the 3⁄16" saw kerf.
- Apply strips of painter's masking tape along both sides of the cut line (one strip for end cuts) sufficiently wide to protect the board's face from the jig saw's table/foot. Do not cover the cut line, as the tape will interfere with the cutting action of the blade.

Cutting

- Set the jig saw speed control to slow/medium #3 on the Bosch JS 365 (higher speeds will tend to cause tearing of the top surface).
- Set saw blade to be perpendicular to the cut surface.
- Cut with even, forward pressure at a rate of approximately 3 feet per minute.
- Be certain that the framing lumber completely supports the drop piece to prevent break-off at the end of the cut.

AFC Fabrication

AFC does not recommend fabricating the entire project on-site. AFC offers state-of-the-art fabrication using numerical control saws for cutting and numerical control routers for drilling. The precision and finish cannot be matched fabricating on-site. With the use of shop drawings, the panels can then be delivered to the jobsite sorted by elevation with panel ID tags on the back, marking their exact location on the wall.

AFC Fabrication Equipment

Edge Finishing

Finishing of edges with Universal Edge Sealer

Product Type

Solvent-based clear Edge Sealer for AFC Core, AFC Matte, and AFC Surface.

Usage

Universal Edge Sealer must always be used to protect all jobsite cut EDGES of AFC Core, AFC Matte, and AFC Surface fiber cement boards.

Factory-cut edges are always sealed. Only Universal Edge Sealer should be used to protect the edges of facade boards.

Surface Preparation

After cutting, edges must be treated immediately with Universal Edge Sealer. Board must be dry. Edges should be beveled with fine grade sandpaper and must be thoroughly cleaned from dust and dirt before applying the Edge Sealer.

Application Conditions

Board temperature and ambient temperature should be 40° to 85° F (+5° to +30°C) and relative humidity < 85%. Process temperature must be minimum 40°F (+5°C).

Application

- Shake the Edge Sealer can well before filling the applicator with Edge Sealer. Shake the filled applicator also before use if applicator unused for a while.
- Remove the protective cap.
- Position the applicator horizontally.
- Place the sponge parallel to the board edge and run twice along the edge with a moderate pressure.

  Note! Carefully prevent the Edge Sealer from flowing onto the front side of the board. Excess Edge Sealer on front side of the board must be wiped off immediately with a clean cloth.
- Check that the liquid has been applied over the entire edge surface.
- Close the applicator with the cap when interrupting the job.
- Replace the sponge when necessary. The boards can be handled 2 minutes after application of the Edge Sealer.

Cleaning

No cleaning of equipment necessary. Unintended spillage can be cleaned with white spirit.

Storage

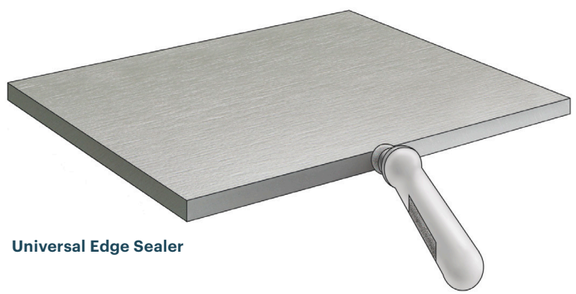
Always keep the containers tightly closed and avoid direct exposure to sunlight. Store in a dry, cool and well-ventilated place. Keep away from sources of ignition. No smoking. Shelf life is 6 months in unopened original packaging at cool temperatures. Can be stored at temperatures from -5° to 85°F (-20° to +30°C).

Disposal

Disposal of the Edge Sealer must be in compliance with local and national regulations. Please refer to Material Safety Data Sheet.

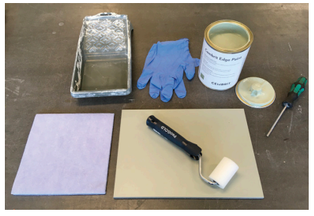
Safety Measures

Please refer to Material Safety Data Sheet.

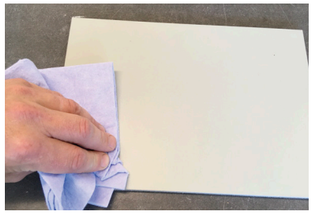


Universal Edge Sealer

Edge Paint — AFC Rustic

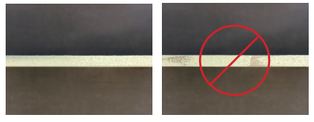


Before you start edge painting AFC Rustic, be sure you have all necessary things to perform the task and make sure to cover the area before painting.

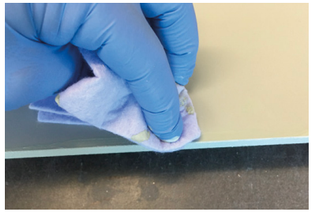


Before you start, the edge and the board surfaces must be wiped off to remove any dirt or dust.

Apply an appropriate amount of paint on the roller so that the sponge is saturated. Apply the paint without pressing too hard and ensure to do it slowly.



Make sure that the entire edge is covered with Edge Paint.



Excess Edge Paint must be removed with a clean cloth immediately after the edge is painted. If this is not done, it will be difficult to remove and leave visible marks. Never stack AFC Rustic boards that have just been edge painted. The Edge Paint typically drys in 5 to 10 minutes.

Do not edge paint in direct sunlight or rain. Board and air temperature should be between 40° and 85°F (+5° and +30°C), optimal 70°F (+20°C). Relative humidity below 80%.

Storage and Handling of Flat Sheets

Flat Sheets

The following flat sheets are covered by these handling and working instructions:

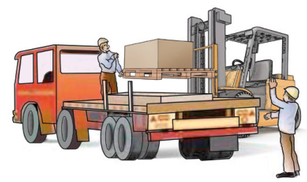
AFC Surface, AFC Rustic, AFC Core, AFC Stone, Groove, and Blast, Minerit HD, AFC Matte

For product data of the various panels, please refer to the product information leaflets.

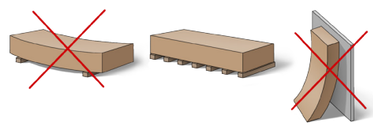
Storage and Handling

Remove panels using a forklift.

Note! The crating and plastic wrapping that the panels are shipped in are not sufficient protection from weather. **Additional protection is required.**

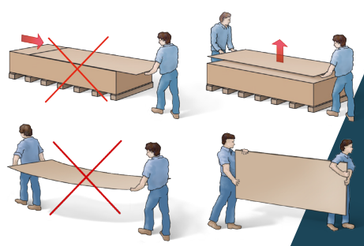


The sheets must be stacked horizontally on a flat surface. The sheets must always be sufficiently supported so that they don't sag. Only two pallets can be stacked on top of one another. Make sure they are positioned so they stand securely and stable.



The sheets must be stored in a **dry, ventilated space**. If the pallets are stored outside when they arrive at the building site, the plastic cover should be removed and replaced with a tarpaulin. It is very important that there is ventilation all around the tarpaulin and also on top of the pallet under the tarpaulin. This reduces condensation. If the sheets do become wet in the packing, all packaging must be removed and the sheets must be wiped dry and placed in a way that they can totally dry.

If the facade boards are stored more than 2-3 weeks on site, the pallets should be kept under a roof to ensure dry and ventilated conditions.



Panels should be lifted singly, not slid, from their pile, and be carried vertically by two people.

Product Sustainability Statement

AFC is committed to providing the highest quality high-density compressed fiber cement panels to the U.S. and Canadian building markets. In order to do this, we feel it necessary to provide not only high-quality products, but sustainable products that can contribute to green (LEED) building projects, which in turn benefit the environment we all live in. AFC products currently have a potential contribution to various LEED credits including but not limited to:

Direct Contribution
Materials and Resources:
- Environmental Product Declarations
- Material Ingredients
- Building Life-cycle Impact Reduction

Indirect Contribution
Indoor Environmental Quality:
- Thermal Comfort

Energy and Atmosphere:
- Optimize Energy Performance

One of the most important sustainable attributes is the durability of AFC panels. With their long lifespan, virtually requiring no refurbishment, AFC panels can contribute to less replacement of materials and to drastically lower maintenance costs over the useful life of the building.

The Ventilated and Insulated Rainscreen Cladding (VIRSC) system, which is used to affix AFC panels to the exterior of a structure, offers many benefits and green attributes to the performance of the building envelope. Durability and resistance to moisture and mold build-up are noteworthy benefits. Equally important is its ability to accommodate external insulation.

In addition, AFC is dedicated to further research and analysis of our products to achieve additional LEED credits, and help further the cause of building sustainable and efficient buildings.

Warranty information available upon request.

6901 South Pierce Street
Suite 180, Littleton, CO 80128 U.S.A.
Phone: 303.972.5107, 800.688.8677

americanfibercement.com

For the nearest authorized fabricator, call 303.972.5107.

Distributed exclusively by: AFC

Limited Warranty

American Fiber Cement (AFC) warrants that its products are manufactured in accordance with its applicable material specifications and are free from defects in materials and workmanship using AFC's specifications as a standard. Only products which are installed and used in accordance with applicable AFC instructions and specifications are in any way warranted by AFC. This warranty is applicable only to claims made in writing and received by AFC within thirty (30) days after the defect was discovered and within ten (10) years after the date of the shipment of the product by AFC. All other claims are waived. If a claim is made, you must allow reasonable investigation of the product you claim is defective and you must supply samples that adequately demonstrate the problem you claim for testing by AFC.

AFC DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE THIS LIMITED WARRANTY PROVIDES YOUR EXCLUSIVE REMEDY AS A PURCHASER OF AFC PRODUCTS. THIS LIMITED WARRANTY MAY BE MODIFIED OR AMENDED ONLY BY A WRITTEN INSTRUMENT SIGNED BY A DULY AUTHORIZED REPRESENTATIVE OF AFC. WITHOUT AN EXPRESS, WRITTEN AUTHORIZATION FROM AFC, NO RETAILER OR DISTRIBUTOR OF AFC PRODUCTS HAS THE AUTHORITY TO MODIFY OR AMEND THIS LIMITED WARRANTY.

Limitation of Liability

This limited warranty is your sole and exclusive remedy. It is expressly understood and agreed that the limit of liability will be, at AFC's option, repair, resupply of a like quantity of non-defective product, or refund of purchase price of the material. All labor and service charges which may be incurred with respect to either the original or replacement product are excluded. AFC shall have no liability except where the claim results solely from breach of AFC's limited warranty.

AFC SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. FURTHERMORE, AFC SHALL NOT BE LIABLE FOR DAMAGE TO THE PROPERTY TO WHICH THE PRODUCT IS APPLIED OR ITS CONTENTS, LOSS OF TIME, PROFITS, OR ANY INCONVENIENCE ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY OR OBLIGATIONS UNDER THIS LIMITED WARRANTY. AFC SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY, OR ANY OTHER THEORY EXCEPT THE LIMITED WARRANTY SET FORTH ABOVE. INCIDENTAL AND CONSEQUENTIAL DAMAGES SHALL NOT BE RECOVERABLE EVEN IF THE REPLACEMENT REMEDY FAILS OF ITS PURPOSE OR FOR ANY OTHER REASON.

AMERICAN
FIBER CEMENT

USA-BASED

Phone: **303.972.5107**

6901 South Pierce Street
Suite 180, Littleton, CO 80128 USA

americanfibercement.com