

SECTION 074646

FIBER CEMENT SIDING

Display hidden notes to specifier. (File > Option > Display > Hidden Text)

\*\* NOTE TO SPECIFIER \*\* American Fiber Cement Corporation, Fiber reinforced cement building products.

This section is based on the products of American Fiber Cement Corp., which is located at:
6901 S. Pierce St. Suite 180 Littleton, CO 80128
Tel: 303-972-5107 / Fax: 303-978-0308 / Email:house@afcladding.com
Web:[www.americanfibercement.com](http://www.americanfibercement.com)

American Fiber Cement Corporation was founded to supply the finest fiber reinforced cement building products for today's innovative construction professionals. These materials encompass a myriad of disciplines and applications including commercial, residential, industrial and agricultural.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Fiber cement panels of the following types:
			- 1. AFC Carbon (Stone+, Groove+, Lines+, Reflect+)
				2. AFC Lines+
				3. AFC Sky
				4. AFC Nature
		2. Cladding attachment system.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05400 - Cold-Formed Metal Framing.
		2. Section 06100 - Rough Carpentry.
		3. Section 07210 - Building Insulation.

\*\* NOTE TO SPECIFIER \*\* American Fiber Cement Corp. recommends water resistive barrier Fassade S as manufactured by Delta.

* + 1. Section 07250 - Air Barriers.
		2. Section 07280 – Water-resistive Barriers
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

References are product specific. See specific product in Part 2 to see which testing applies.

* + 1. ASTM - ASTM International:
			1. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750-degree C. Determination of Non-Combustibility.
		2. CEN - European Committee for Standardization:
			1. EN 12467 - Fiber Cement Flat Sheets-Product Specifications and Test Methods.
			2. EN 13501 - Fire Test to Building Material.
		3. ULC - National Standard of Canada
			1. CAN/ULC S114 - Standard Method of Test for Determination of Non-Combustibility in Building Materials
	1. SUBMITTALS
		1. Submit under provisions of Section 01300 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Provide detailed drawings of non-standard applications of fiber cement materials which are outside the scope of the standard details and specifications provided by the manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete if attachment system not part of this section scope.

* + 1. Attachment System Engineered Drawings:
			1. Provide engineered design for attachment and back-up framing to support exterior cladding.
			2. Provide static calculations verifying sizing of members, attachment devices and fasteners to support the exterior cladding with a safety factor required by Authority Having Jurisdiction (AHJ).
			3. Provide Installation drawings and details.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
	1. QUALITY ASSURANCE
		1. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Remodel mock-up area as required to produce acceptable work.
	1. FABRICATION, DELIVERY, STORAGE, AND HANDLING
		1. All cladding materials to be finished and fabricated in the United States with backup inventory in residence in the United States to support job in-progress.
		2. Store products in manufacturer's unopened packaging until ready for installation in accordance with manufacturer's recommended guidelines.
		3. All cladding materials to be fabricated to end use panel sizes with holes drilled in manufacturer’s fabrication facility. Shop drawings are to determine panel sizes. Shop drawings through the manufacturer are recommended. If outsourced, manufacturer must be consulted.
	2. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	3. WARRANTY
		1. Warranty: Manufacturer warrants that its products are manufactured in accordance with its applicable material specifications and are free from defects in materials and workmanship.
			1. Only products that are installed and used in accordance with applicable manufacturer's instructions and specifications are warranted.
			2. The warranty is applicable only to claims made in writing and received by the manufacturer within thirty days after the defect was covered and within ten years after the date of the shipment of the product by the manufacturer.
1. PRODUCTS
	1. MANUFACTURER/SUPPLIER
		1. Basis of Design: AFC Fiber Cement Siding by American Fiber Cement Corp.; 6901 S. Pierce St. Suite 180, Littleton, CO 80128. ASD. Tel: (303) 972-5107. Email: house@afccladding.com. Web: http://www.americanfibercement.com.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs: coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. FIBER CEMENT PRODUCTS:

\*\* NOTE TO SPECIFIER \*\* AFC CarbonStone+ is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet utilizes a reduced fading transparent hydrophobic coating on the surface. The surface of the sheet is characterized by fine sanding lines. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC CarbonStone+ as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Black, through-colored, muted, matte finish with a sanding grain and unique weather-proof and UV resistant surface treatment.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)
				5. Color: 031 Carbon
				6. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. UV Testing:

UNI EN ISO 4892-3, 1500 hr, DE\* = 0.61

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC CarbonGroove+ is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet utilizes a reduced fading transparent hydrophobic coating on the surface. The surface of the sheet is characterized by its linear grooved pattern. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC CarbonGroove+ as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Black, through-colored, muted, matte finish with a sanding grain, linear grooved pattern, and unique weather-proof and UV resistant surface treatment.
				2. Thickness:

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)
				5. Color: 031 Carbon
				6. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. UV Testing:

UNI EN ISO 4892-3, 1500 hr, DE\* = 0.61

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC CarbonLines+ is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet utilizes a reduced fading transparent hydrophobic coating on the surface. The surface of the sheet is characterized by deep sanding lines. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC CarbonLines+ as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Black, through-colored, muted, matte finish with a deep sanding grain and unique weather-proof and UV resistant surface treatment.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)
				5. Color: 031 Carbon
				6. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. UV Testing:

UNI EN ISO 4892-3, 1500 hr, DE\* = 0.61

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC CarbonReflect+ is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet utilizes a reduced fading transparent reflective on the surface. The surface of the sheet is characterized by fine sanding lines. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC CarbonReflect+ as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Black, through-colored with fine sanding grain lines and unique weather-proof and UV resistant reflective surface treatment.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)
				5. Color: 031 Carbon
				6. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC Lines+ is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet utilizes a reduced fading transparent hydrophobic coating on the surface. The surface of the sheet is characterized by deep sanding lines. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC Lines+ as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Through-colored, muted, matte finish with a deep sanding grain and unique weather-proof and UV resistant surface treatment.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)
				5. Color:

010 Pearl

011 Granite

020 Sand

030 Graphite

040 Amber

050 Emerald

060 Magma

061 Ruby

070 Adobe

080 Tufa

081 Parchment

* + - * 1. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC Sky is a fully compressed, autoclaved, fiber, cement sheet. The color is through-out the sheet. Natural color differences, possibly accentuated by the orientation of the sheet and the effects of light and moisture, are possible. The sheet is characterized by fine sanding lines and natural color differences throughout the surface. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC Sky as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Through-colored with fine sanding grain lines, natural color differences, and unique weather-proof surface treatment.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - * 1. Color:

011 Granite

020 Sand

030 Graphite

040 Amber

050 Emerald

060 Magma

061 Ruby

070 Adobe

080 Tufa

081 Parchment

* + - * 1. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. For additional test data, see product datasheet.

\*\* NOTE TO SPECIFIER \*\* AFC Nature is a fully compressed, autoclaved, fiber, cement sheet. The sheet is characterized by a digitally printed surface on a through-colored sheet. Applications include exterior facades, soffits and interior cladding. Delete if not required.

* + - 1. Product: AFC Nature as manufactured/supplied by American Fiber Cement Corp.
				1. Finish: Through-colored with a digitally printed surface providing graffiti resistance.

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

* + - * 1. Finish Type:

Matte

Glossy

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - * 1. Thickness:

8 mm (5/16”)

10mm (3/8”)

* + - * 1. Untrimmed Width: 1250 mm (49.2”)
				2. Untrimmed Lengths: 2510 mm (98.8”), 3050 mm (120.1”)
				3. Trimmed Width: 1219.2 mm (48”)
				4. Trimmed Lengths: 2438 mm (96”), 3045 mm (119.875”)

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - * 1. Color:

W008 Elm

W009 White Oak

W09G Amber Oak

W010 Vintage Walnut

W10E Cocoa Walnut

W10G Natural Walnut

W10R Red Walnut

W013 Ash Wood

W14R Red Cherry

* + - * 1. Physical Characteristics: EN 12467 'Fiber-cement flat sheets'.

Durability classification: Category A.

Strength classification: Class 5.

Freeze thaw test: RL ≥ 0.75

* + - * 1. Fire Testing:

ASTM E136.

CAN/ULC S114.

EN 13501-1: A2-s1-d0.

* + - * 1. For additional test data, see product datasheet.
	1. MISCELLANEOUS CLADDING MATERlALS

\*\* NOTE TO SPECIFIER \*\* Delete miscellaneous cladding materials not required.

* + 1. Water-resistive Barrier: DELTA®- FASSADE S by Dörken Systems Inc. See Section 07280 – Water-resistive Barriers. (Supplied by American Fiber Cement Corp.)
		2. Air Barrier: DELTA®-VENT SA by Dörken Systems Inc. See Section 07250 - Air Barriers. (Supplied by American Fiber Cement Corp.)
		3. Aluminum Joint Closures and Cembrit Decorative Corner Profiles: Manufacturer's standard products as detailed. Maximum thickness of finishing profile to be 0.8 mm or 21-gauge.
	1. ATTACHMENT SYSTEMS
		1. Attachment System, Steel Supporting Members:
			1. Product: "Hat" or "Z" profiles supplied by others.
				1. Material: Steel, minimum 16-gauge, minimum G90 coating.
			2. UV Protective Membrane: As supplied by American Fiber Cement Corp.
				1. For open joint ventilated rain screen systems.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Attachment System, Aluminum Supporting Members:
			1. Product: "Hat" or "Z" profiles supplied by others.
				1. Material: Aluminum - min. 2mm thickness.
			2. UV Protective Membrane: Supplied by American Fiber Cement Corp.
				1. For open joint ventilated rain screen systems.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Attachment System, Wood Supporting Members:
			1. Product: Wood profiles supplied by others.
				1. Material: Pressure treated wood.
			2. UV Protective Membrane: Supplied by American Fiber Cement Corp.
				1. For open joint ventilated rain screen systems.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Attachment System, XKELEX Z19:
			1. Product: Perforated Horizontal Aluminum profiles supplied by American Fiber Cement Corp.
				1. Material: 6063-T5
				2. Finish: Black Powder Coat
			2. UV Protective Membrane: Supplied by American Fiber Cement Corp.
				1. For open joint ventilated rain screen systems.

\*\* NOTE TO SPECIFIER \*\* American Fiber Cement Corp. recommends epoxy adhesive system Dynamic Bond as manufactured by Dynamic Bonding Systems. Dynamic Bond is used for concealed fastening. Dynamic Bond is a fast curing, permanently elastic one component adhesive/sealant based on MS-hybrid-polymers. Dynamic Bond is moisture curing, neutral polymerization, odorless, and has excellent adhesive power. Dynamic Bond is suitable for all attachment systems. Delete if not required.

* + 1. Concealed Attachment, Epoxy Adhesive System: For concealed fastening of exterior cladding panels on ventilated rain screen constructions. (Note: Applied onto pressure treated wood, G90 Steel, or Anodized or Mill Finish Aluminum)
			1. Product: Dynamic Bond as manufactured by Dynamic Bonding Systems and supplied by American Fiber Cement Corporation.
				1. Material: Structural adhesive and sealant based on MS-hybrid-polymer.
				2. Physical Characteristics:

Density: 1.54 g/cm3.

Tensile strength: 2.3 N/mm2.

Shear strength: 2.1 N/mm2.

Fire reaction (EN 13501-1): B-s1-d0.

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - 1. Accessories:
				1. Dynamic Clean: For use in conjunction with Dynamic Bond.
				2. Dynamic Tape: For use in conjunction with Dynamic Bond.
				3. Dynamic Protect: For impregnation of wood surfaces.
				4. Dynamic SI Epoxy: For impregnation of porous (fiber) cement panels.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions and approved submittals.

\*\* NOTE TO SPECIFIER \*\* Delete if exterior board application not required.

* + 1. For exterior applications, comply with local codes and structural engineer's fastening calculations along with manufacturer's recommendations for fastener spacing.

\*\* NOTE TO SPECIFIER \*\* AFC Fiber Cement architectural panels are installed in a ventilated rain screen application. Special Requirements are necessary for buildings over 150 ft (45 m) high, or for buildings in high wind areas. Delete if not required.

* 1. EXTERIOR CLADDING FOR RAINSCREEN APPLICATIONS
		1. Detailing Requirements:
			1. Air space at top and bottom of building or wall termination shall be 3/4 inch (20 mm) to facilitate airflow from behind the panels. Do not block vertical airflow at windows, doors, eaves, or at the base of the building. Airflow shall be continuous from bottom to top so there is air movement behind each panel. For walls over 60 feet high (18 m), the ventilated cavity between rear of panels and exterior wall shall be increased to 1-5/8 inches (40 mm). Air flow behind the cement fiber panels is critical to the performance of the rain screen constructions.
			2. Fasteners in profile shall accommodate thermal expansion/contraction of metal and not interfere with panel application.
			3. Install panels from top of building to bottom.
			4. For straight walls, start panel installation in center and work outward.
			5. For walls with inside corners, start installation at corner and work across wall.

\*\* NOTE TO SPECIFIER \*\* Delete patterns not required.

* + - 1. Pattern: Straight pattern with vertical panels. Panel size as indicated.
			2. Pattern: Straight pattern with horizontal panels. Panel size as indicated.
			3. Pattern: Semi pattern with horizontal panels. Panel size as indicated.
		1. Rain Screen Installation: Comply with manufacturer's installation requirements.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Attachment System: Comply with manufacturer's engineered design for cladding support framing.
	1. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION