

SECTION 07 46 46 – FIBER CEMENT SIDING

GAJCladding U-Shield

PART I. GENERAL

1.1 SUMMARY

A. Section Includes:

1. GAJCladding U-Shield panels (pre-coated fiber cement panels) mounted using the back ventilated rain screen design principle.
2. Panel fasteners and accessories.
3. Metal vertical panel supports and fasteners.

B. Related Sections:

1. Section 05 41 00 – Structural Metal Stud Framing
2. Section 06 16 00 – Sheathing
3. Section 07 20 00 – Thermal Protection
4. Section 07 25 00 – Weather Barriers
5. Section 07 60 00 – Flashing and Sheet Metal
6. Section 07 90 00 – Joint Protection
7. Section 08 50 00 – Windows

1.2 REFERENCES

A. Standardization Administration of the People's Republic of China :

1. GB/T 8624 Classification for Burning Behavior of Building Materials and Products.
2. GB/T 23263 Determination of Asbestos in Products.
3. JC/T 412.1 Asbestos-free Fiber Cement Board.
4. JG/T 396 Non-load bearing fiber-reinforced-cement sheet for exterior wall.

B. American Society for Testing and Materials (ASTM):

1. ASTM C1354 Standard Test Method for Strength of Individual Stone Anchorages in Dimension Stone.
2. ASTM E330 Standard Test Method for Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.3 SYSTEM DESCRIPTION

A. Design Requirements:

1. Rain Screen System:

Wall panel assembly shall be designed in accordance with manufacturer's guidelines, install according to the GAJCladding U-Shield installation manual thus providing a rain screen system.

2. Expansion and Contraction:

Wall panel assembly shall be designed with provisions for thermal expansion and contraction of the component parts to prevent buckling, undue stress on fasteners or other detrimental effects due to accumulation of dead loads and various live loads.

3. Allowable Wind Load:

Wall panel assembly shall be designed to withstand the positive and negative wind load pressures acting inward and outward normal to the plane of the wall to meet the requirements of the latest adopted Local Building Code.

B. General Performance:

Wall panel assembly shall comply with performance requirements, as determined by the following testing performed by a qualified agency.

1.4 SUBMITTALS

A. Product Data:

1. Submit manufacturer's data sheet for specified product.
2. Submit manufacturer's standard detail drawings relevant to the project.
3. Submit manufacturer's storage and handling instruction, installation guidelines for specified product.

B. Shop Drawings:

Submit shop drawings indicating project layout and elevations, fastening and anchoring methods, dimensions of individual components and profiles, detail and location of joints, and gaskets, flashing and accessories.

C. Samples:

1. Submit two samples 83x195 mm of each product specified.
2. Submit two samples 83x195 mm of each finish specified.

D. Code Compliance:

Submit documents demonstrating the compliance of products with local building code, such as test reports, or Evaluation Reports meeting specified performance requirements from an independent testing agency.

E. Warranty:

Submit manufacturer's warranty meeting the requirements of this section.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer:

Manufacturer shall have a minimum of ten years' experience in the manufacture of this product.

2. Installer:

Installer shall be experienced in performing work of this section and in work of similar scope required by this project. Installer shall be trained by manufacturer or representative.

B. Mock-up Wall:

Provide a mock-up wall as evaluation tool for product and installation workmanship.

C. Pre-Installation Meeting:

Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements and project requirements.

D. Color:

Some degree of color variation is to be expected.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at Site:

Materials to be packaged to protect against transportation damage. Examine materials upon receipt to ensure that no damage has occurred during shipment.

B. Storage and Protection:

1. Storage:

Materials should be stored horizontally and kept dry on pallets or platforms off the ground, covered with a suitable ventilated and waterproof cover. Do not store materials where accumulation of moisture may occur or in contact with materials that might cause staining, denting, or other damage.

If panels are exposed to water or water vapor prior to installation, allow to completely dry before installing. Moisture saturation before installation can cause panel shrinkage and damage.

2. Material Handling:

Panels MUST be carried on edge. Do not carry or lift panels flat. Improper handling may cause cracking or panel damage.

Do not stack product more than two (2) pallets high.

1.7 PROJECT CONDITIONS

A. Field Measurements:

Verify location and dimension of all elements related to the installation of the wall panel assembly. Indicate those measurements on the shop drawings.

B. Limitations:

Proceed with installation of the wall panel assembly only when existing site conditions comply with manufacturer's recommendations.

1.8 WARRANTY

A. Exterior Cladding Panel:

1. Provide manufacturer's 30-year limited warranty against manufactured defects in U-Shield panels.
2. Provide manufacturer's 15-year limited warranty against manufactured defects in panel finish.
3. Warranty provides for the original purchaser and transfers to one subsequent owner. See Warranty for detailed information on terms, conditions and limitations.

B. Installation System:

1. Provide fabricator or installer standard form in which they agree to repair or replace components of exterior cladding wall panel assemblies that fail in materials or workmanship within specified warranty period.
2. Provide rain screen system warranties or other such guarantees regarding installation shall be the responsibility of the installing contractor.

C. Accessories:

Provide warranties or other such guarantees regarding accessories used during installation shall be the responsibility of the installing contractor.

PART II. PRODUCT: FIBER CEMENT SIDING

2.1 MANUFACTURERS

A. Basis of Design:

Chongqing Guanjie Qizhong Building Materials Co., Ltd; www.gajcladding.com

B. Substitutions:

1. Not permitted without approval of the architect 10 days prior to bid.
2. Items being submitted for consideration must be of the same function and meet the performance requirements set forth in this section.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60

00 - Product Requirements.

1. Product Data:

Submit product data including testing performed by a qualified agency indicating compliance with performance requirements specified in this section.

2. Samples:

Submit two samples 83x195 mm of each proposed product substitution.

2.2 PERFORMANCE CRITERIA

A. Flexural Strength:

1. Equilibrium Conditioning Flexural Strength: 23.57MPa;

2. Wet Conditioning Flexural Strength: 16.5MPa

B. Must comply with JG/T 396:

1. Density: 1.52 g/cm³
2. Carrier Board Water Absorption: 24.9%
3. Water Absorption after Coating: 1.2%
4. Freeze-Thaw: Pass (After 100 freeze-thaw cycles, there should be no cracking or delamination, Flexural Strength Retention Rate≥80%)
5. Water Tightness: No visible droplets or surface wetting
6. Warm Water: Pass (No evidence of cracking, delamination, swelling, or other defects)
7. Heat-Rain: Pass (No crazing, cracking, or other deleterious effects, surface or joint changes observed in any specimen)

C. Fire Resistance:

Class A according to GB/T 8624.

D. Combustion Characteristics Temperature Rise:

15°C according to GB/T 8624.

2.3 WALL PANEL ASSEMBLY

A. Panel:

GAJCladding U-Shield panel (pre-coated fiber cement panel).

1. Thickness: 10mm; 12mm; 15mm
2. Length x Width: 1220x2440mm
3. Unit weight:
10mm: 16.5kg/m²
12mm: 19.8kg/m²
15mm: 24.8kg/m²
4. Finish: Finish color selected by architect from manufacturer's catalog.

B. Installation System:

1. Metal support system:
Metal support systems are specified by the panel manufacturer, or designed and specified by architect.
2. Panel anchoring: GU Support System
Support system selected by architect from manufacturer's catalog.
3. Accessories:
Edge sealant and coat applied on panel edges cut on-site.
Joint Strip. (by architect's design)
Capping, window sill, ventilation rail. (by architect's design)

PART III. EXECUTION

3.1 EXAMINATION

- A. Examine substrate to receive the work of this section to verify that the conditions are acceptable for installation.
 - 1. Substrate to receive panels shall be even, smooth, sound, clean, dry, and free from defects detrimental to work. Notify contractor in writing of conditions detrimental to proper and timely completion of the work.
 - 2. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of rear ventilated rain screen cladding.
 - 3. Prior to panel installation verify vertical panel support compliance with Design and Installation Manual.
- B. Proceed with installation only after all unsatisfactory conditions have been corrected in a manner acceptable to installer. Starting work within a particular area will be construed as installer's acceptance of surface conditions.

3.2 PREPARATION

- A. Verify dimensions as required.
- B. Protect adjacent work areas and finished surfaces to prevent damage that otherwise might occur during the work of this section.

3.3 INSTALLATION

- A. Wall panel assembly shall be installed in accordance with the manufacturer's written installation manual and the approved set of shop drawings.
- B. Erect wall panel assembly level and true to the intended plane.
- C. Seal all the on-site drilled holes as required using manufacturer provided or specified panel sealant and coat.
- D. Seal all the on-site cuts on the panels using manufacturer provided or specified panel sealant and coat.
- E. Installation Tolerance: Max tolerance of error 0.5‰ horizontally and 0.4‰ vertically.

3.4 CLEANING

- A. Remove panel masking immediately within the date specified on the protective film after

installation. Delay will result in difficulty with removal and possibly residue on the panel surface.

- B. Remove temporary coverings and protection to adjacent work areas.
- C. Remove and legally dispose of construction debris from project site.

END OF SECTION