



SECTION 07 42 13

ALUMINUM PLATE PANEL SYSTEM

ALPLY Insulated Panels

Alply TECH WALL™ Aluminum Plate System 2000

PART 1 / GENERAL

1.1 SYSTEM DESCRIPTION

- A. Preformed Aluminum Square Edge Plate System for Rain Screen type wall application.
- B. Aluminum extrusions for panel attachment.

1.2 SYSTEM DESCRIPTION

A. System Requirements:

- 1. Square Edge Aluminum Plate: Utilizing concealed perimeter extrusions for attachment of panels to sub-frame. No field sealant at typical joints.
- 2. Panels with stiffeners (if required) shall meet the specified requirements for wind loading.
- 3. System must be installed with a fully sealed waterproof barrier behind panels.

B. The anchorage system shall be designed so that the panels are secure yet “free floating” to accommodate expansion and contraction.

C. Panel shall be finished after fabrication to insure integrity of finish applied.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)

- 1. ASTM B209: Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- 2. ASTM B221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bar, Wire, Profiles and Tubes.
- 3. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.
- 4. ASTM E283: Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen.
- 5. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, Curtain Walls by Uniform Static Air pressure Difference.
- 6. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Doors, Skylights, Curtain Walls by Uniform Static Air pressure Difference.



B. International Building Code (IBC): Current Edition

C. American Aluminum Manufacturers Association

1. AAMA 620: Voluntary Specification for High Performance Organic Coatings on Aluminum Coil.
2. AAMA 2604-05: Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605-05: Voluntary Specification, Performance Requirements and Test Procedures for Superior Performance Organic Coatings on Aluminum Extrusions and Panels.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Conduct a pre-installation meeting at the job site attended by Owner, Architect, Manufacturer's Representative and Panel Installer. Coordinate structural support requirements, and installation of any additional air/water barriers that relate to the metal plate wall panel system.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer current literature for the product type.

B. Shop Drawings: Submit detailed drawing for approval, showing:

1. Panel description
2. Gauge of metal skins
3. Layout of Panels
4. Panel Joint detail both Vertical and Horizontal
5. Track and other integral extrusions
6. Sealants and Gaskets (if applicable)
7. Trim detail (if applicable)

C. Samples: Provide the following samples:

1. Flat metal color swatches for each exterior color specified
2. Panel sample with joint

D. LEED Submittals:

1. Material and Resources (MR)
 - a. Product Certificate for Credit MR 4: For products having recycled content, provide calculation establishing weight per-cent of postconsumer and preconsumer with value in dollar terms of total recycled content

E. Quality Assurance Submittals:

1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with requirements.
2. Manufacturer Erection Instructions: Provide manufacturer's written installation instructions including proper material storage and maintenance instructions.



1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with requirements.
2. Manufacturer Erection Instructions: Provide manufacturer's written installation instructions including proper material storage and maintenance instructions.

B. Installer Qualifications:

1. Installer shall be approved by the manufacturer; installer to provide letter of approval.
2. Minimum of 5 years' experience in installation of metal siding.

C. Mockups: **Build mock-ups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.**

1. Build mock-up of typical metal panel assembly, including supports, attachments and accessories.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver panels to the project site in manufacturer's original condition in fully protected crate.
- B. Unload, store and erect metal panels in a manner to prevent bending, warping, twisting and surface damage.
- C. Store wall panels in accordance with the manufacturer's instructions (copy attached to each delivery crate). Do not store crates on top of each other.

1.7 WARRANTY

- A. Limited Warranty: Manufacturer agrees to repair or replace panels that suffer failure due to materials or workmanship within the specified warranty period.
 1. Warranty Period: Five (5) years from date of Substantial Completion or 5 years from the date of shipment from manufacturer's plant, whichever occurs first.
- B. Finish Warranty: Manufacturer agrees to repair or replace panels that exhibit deterioration of fluoropolymer finish beyond accepted norms when tested in accordance with ASTM D4214 and ASTM D2244.
 1. Warranty Period: Twenty (20) years from date of Substantial Completion or 20 years from the date of shipment from manufacturer's plant, whichever occurs first.



PART 2 / PRODUCTS

2.1 MANUFACTURER

A. Alply Insulated Panels, LLC.

1. 1401 Eilerman Avenue, Litchfield, IL 62056; telephone (217) 324-6700

B. Alply TECH WALL Aluminum Plate System 2000

C. Substitution Limitations:

1. Submit written request for approval of substitutions to the Architect a minimum of 14 days prior to the date for receipt of bids. The following information must accompany any such request for consideration:
 - a. Name and description of the substitute product.
 - b. Test data in compliance with specification requirements.
 - c. Documentary proof of projects completed of similar type and scope.
2. After evaluation by Architect, a decision on approval will be issued by addendum only.
3. Substitutions following award of contract are not permitted except as otherwise allowed in Division 01.

2.2 ALUMINUM PLATE WALL PANELS

A. Panel Design Criteria

1. Panel shall be designed and manufactured to resist a wind load of _____ positive and negative loading.
2. Deflection Criteria shall be L/180, with a maximum of 3/4" when tested in accordance with ASTM E330, "Structural Design Load".

B. Panel Performance Criteria

1. Structural Test:
Structural performance shall meet wind load criteria verified by test results obtained from physical testing conducted in accordance with ASTM E330.
2. Water Penetration:
 - a. Any water that enters behind the panel face must be allowed to exit by natural evaporation or evacuation at the base. The system must be used with a waterproof weather barrier to prevent the possibility of water ingress to the warm side.
3. Air Infiltration:
 - a. The system shall be open jointed and allow for the free movement of air under normal atmospheric conditions.



5. Thermal:
Provide design and assembly that allows for thermal movements resulting from the following maximum changes (range) of surface temperatures of plate panels by preventing deformation of panels and overstressing of components:
 - a. Temperature Change (range): -40 degrees F to +180 degrees F, material surface.

C. Paint Finish for Panels

1. Exterior Paint finish shall be Spray-Applied (two coat) fluoropolymer coating to AAMA 620 containing not less than 70 per cent PVDF resin by weight in color coat.
 - a. Color as selected by Architect from manufacturer's standard range.
2. Color sample shall be submitted for architect's approval before proceeding with production.

2.3 MATERIALS

- A. Aluminum Extrusions: Extruded aluminum track and support members shall be a minimum 0.093" thick to ASTM B221, alloy 6063-T6 or 6061-T6 as standard for manufacturer; supplied pre-cut to size, including all necessary stainless steel fasteners for concealed installation.
- B. Aluminum Plate: ASTM B209, Aluminum Association specification sheet 3003-H14 or 3105-H14 or 3105-H24 as standard for manufacturer.
 1. Thickness: 0.187 inch (3/16") nominal
- C. Sealants: Sealants used with the Aluminum Panel System must be compatible with the total system design and only used in accordance with the manufacturer's recommendations.

2.4 FABRICATION

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with stated dimensional requirements and tolerances.
- B. Tolerances: Maximum allowable tolerances shall be as follows:
 1. Panel bow: 0.2% of panel dimensions in width and length up to 0.1875" maximum.
 2. Width or length: +/- 0.032" up to 48"
 3. Width or length: +/- 0.064" from 48" to 144".
 4. Squareness: 0.1875" differences between diagonal measurements.
 5. Camber: 0.32" maximum
- C. All panels to be formed to specified dimensions with tolerances to accommodate expansion and contraction between panels and structural members. Curved panels shall be accurately formed to radii in plant of manufacturer.



- D. All panel edges are to be smoothed and square after shearing.
- E. Panel surfaces shall be free of scratches or other visible marks.
- F. Reinforce panels greater than 48" in height with aluminum stiffeners to resist positive and negative wind load. Stiffeners to be factory manufactured and supplied.

2.5 ACCESSORIES

- A. Fasteners: Fasteners to be stainless steel as recommended by manufacturer.
- B. Trim: Any metal trim shall be same alloy material and coating color as exterior face of metal panel.

PART 3 / EXECUTION

3.1 EXAMINATION

- A. Provide field measurements to manufacturer as required to achieve proper fit of the insulated panel.
- B. Supporting Steel: All structural supports required for installation of panels shall be by others. Support members shall be installed within the following tolerances:
 - 1. Plus or minus 1/8 inch in 5 feet in any direction along plane of framing.
 - 2. Plus or minus 1/4 inch cumulative in 20 feet in any direction along plane of framing.
 - 3. Plus or minus 1/2 inch from framing plane on any elevation.
 - 4. Plumb or level within 1/8 inch at all changes of transverse for performed corner panel applications.
- C. Examine individual panels upon removing from the bundle; notify manufacturer of panel defects.

3.2 PANEL INSTALLATION

- A. Installation shall be in accordance with manufacturer's installation guidelines and recommendations.
- B. Install panels plumb, level, and true-to-line to dimensions and layout indicated on approved shop drawings.
- C. Panel anchorage shall be structurally sound and per engineering recommendations.
- D. Where aluminum materials come into contact with dissimilar materials, an isolation trim or tape shall be inserted at fastening locations



3.3 TRIM INSTALLATION

- A. Place trim and trim fasteners only as indicated per details on the approved shop drawings.

3.4 SEALANT INSTALLATION

- A. Only apply sealants to joints as indicated on manufacturer's shop drawings.

3.5 CLEANING AND PROTECTION

- A. Remove protective film (if applied) immediately after installation.
- B. Touch-up, repair or replace metal panels and trim that have been damaged.
- C. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

END OF SECTION