

SPECIFICATION FOR STANDARD-DUTY ALUMINUM INTERLOCKING FLAT PANEL COVER

GENERAL

Purpose: This specification establishes the minimum criteria for the design, fabrication, and erection of Standard-Duty Aluminum Interlocking Flat Panel Covers comprised of removable hinged and fixed panels and the associated support members as manufactured by Pleasant Mount Welding, Inc. (Carbondale, Pennsylvania).

Scope of Work: Provide all labor, materials, and equipment required to supply a complete system of removable flat panel aluminum interlocking covers. The Standard-Duty Aluminum Interlocking Cover includes cover panels, structural supports (Interlock Beams and Structural Support Members), and attaching hardware.

ENGINEERING & ACTION SUBMITTALS

Shop Drawings: The contractor shall submit the shop drawings to the Engineer of Record (EOR) for approval for the fabrication of all Aluminum Interlocking Flat Panel Covers based on construction drawings of current issue. The drawings shall be approved and released to the shop before fabrication of the panels. Include plans, sections, shop details, and connections as required by the contract documents. Preliminary drawings shall be stamped by the cover manufacturer's PE. Final drawings shall be signed and sealed by a registered professional engineer if required by contract documents. All work shall be fabricated and erected in accordance with the approved shop drawings.

Stress Analysis: Prior to executing any work in this section, complete structural calculations showing the load criteria and governing stresses in all members and connections shall be submitted to the Engineer of Record (EOR) for approval. These calculations shall be signed and sealed by a registered professional engineer if required by contract documents. All work shall be fabricated and erected in accordance with the approved structural calculations.

QUALIFICATIONS

Manufacturer:

Pleasant Mount Welding, Inc.
45 Dundaff Street, Carbondale, Pennsylvania 18407
Phone: (570) 282-6164 Fax: (570) 282-7917
Email: sales@pmwi.net Website: <https://www.pmwi.net>

The Standard-Duty Aluminum Interlocking Flat Panel Covers, as specified, shall be the product of a single manufacturer regularly engaged in the design, manufacture, and installation of engineered aluminum covers. When requested by the Engineer, submit written evidence to show experience qualifications & facility capabilities for performance of contract requirements.

Welders: Welders performing work on the Standard-Duty Aluminum Interlocking Flat Panel Covers shall be qualified within the past two years in accordance with AWS.

PERFORMANCE & DESIGN

Span: The clear span length of the cover shall be as noted in the contract documents.

Width: The width of the cover shall be as noted in the contract documents.

Distributed Design Live Load & Deflections: All structural components shall be designed to support the dead weight of the structure, plus a live load of 50 pounds per square foot of surface. The maximum deflection of any component under this load shall not exceed L/240 of the span of that component. In no event shall the dead load deflection of any component cause surface ponding.

Concentrated Live Load: All structural components shall be designed to support a 400-pound load on a 6"x 6" area located anywhere on the surface of the structure without permanently deforming the tested area.

Design Stresses: All aluminum structural members and connections shall be designed in accordance with the Aluminum Association's "Specification for Aluminum Structures" for building-type structures.

Slip Resistance: The aluminum flat panel interlocking cover shall have a non-skid surface and no exposed area of the cover system wider than 1.75" shall be without striations/non-skid surface. The aluminum cover plank (decking) of the Standard-Duty Interlocking Cover shall be ribbed with concave and convex striations to prevent slipping and to assist in the removal of water from the covers' surface. The edges of the cover planks shall double interlock with adjacent planks so that the planks shall act together as a single rigid cover panel. This surface shall not be achieved by the use of paint, adhesive tapes, sand blasting, or any other means other than an extruded process.

Chemical Resistance: The aluminum flat panels shall be comprised entirely of 6061-T6 corrosion resistant aluminum extrusions. Replaceable Santoprene™ seals shall isolate the cover perimeter from the concrete and at every panel-to-panel interface to ensure a significantly air-tight enclosure.

Configuration: The aluminum interlocking flat panel cover shall be composed of panels and support beams. Each cover panel shall use extruded slide locks to resist uplift. The weight of an individual panel shall not exceed 150 pounds. Each panel can be easily removed or replaced via fully unlatching the slide lock assemblies and removing the hatch door panel without disruption of adjacent panels. Some panels may also require removal of attachment bolts. The required lifting force shall not exceed the dead weight of the cover panel.

MATERIALS

Aluminum: All extrusions that comprise Pleasant Mount Welding, Inc.'s Aluminum Interlocking Flat Panel Cover shall be alloy 6061-T6, of sufficient section modulus and moment of inertia to withstand the design loads. Material shall be of top quality.

Welding Electrodes: Welding shall be done with electrodes of an alloy which shall produce welds with strength and corrosion resistance characteristics compatible to the base material.

Fasteners: All fasteners between aluminum components shall be stainless steel. Beams and shelf angles shall be fastened to concrete using stainless steel drill in place anchor bolts.

Steel Accessories: No carbon steel components shall be used.

Gaskets: Replaceable Santoprene™ seals shall be used to isolate the aluminum cover perimeter from the concrete and at all panel-to-panel interfaces.

WORKMANSHIP

The quality of the workmanship, fabrication, and shop connections shall be in accordance with the latest edition of ANSI/AWS D1.2 Structural Welding Code – Aluminum.

CONTRACTOR INSTALLATION

The cover manufacturer can provide installation instructions, on-site supervision, and inspection if required.

ENVIRONMENTAL CONSIDERATIONS

All aluminum used in these Flat Panel Cover Systems are presumed to be recyclable upon demolition.

OPERATION & MAINTENANCE MANUAL

The cover manufacturer shall provide an O&M Manual that includes maintenance instructions, removal and replacement instructions, and drawings for the installed cover.