

# PMWI

***Pleasant Mount Welding, Inc.***

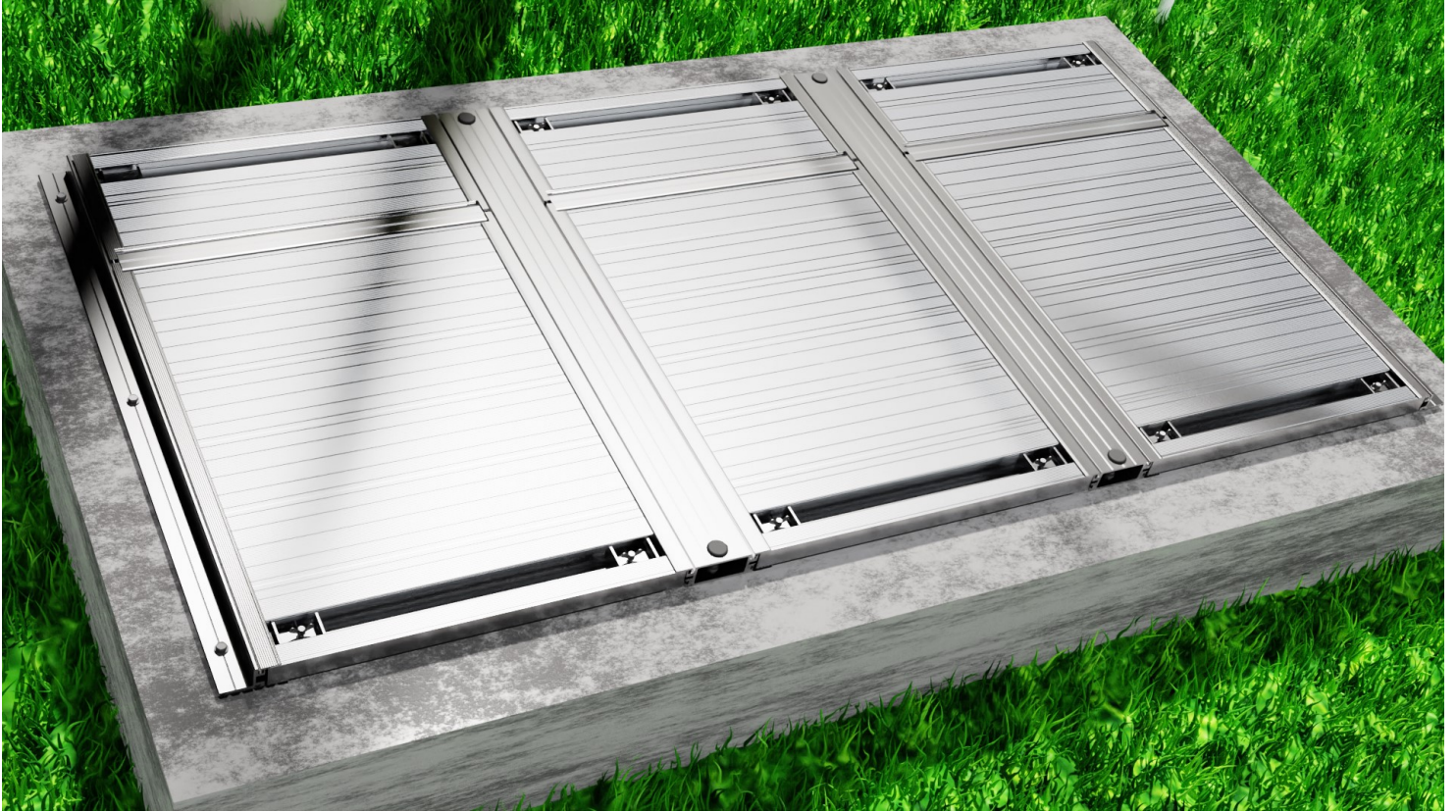
***WE'VE GOT YOU COVERED***



**PMWI.NET**

***STANDARD-DUTY  
ALUMINUM INTERLOCKING  
FLAT PANEL COVERS***

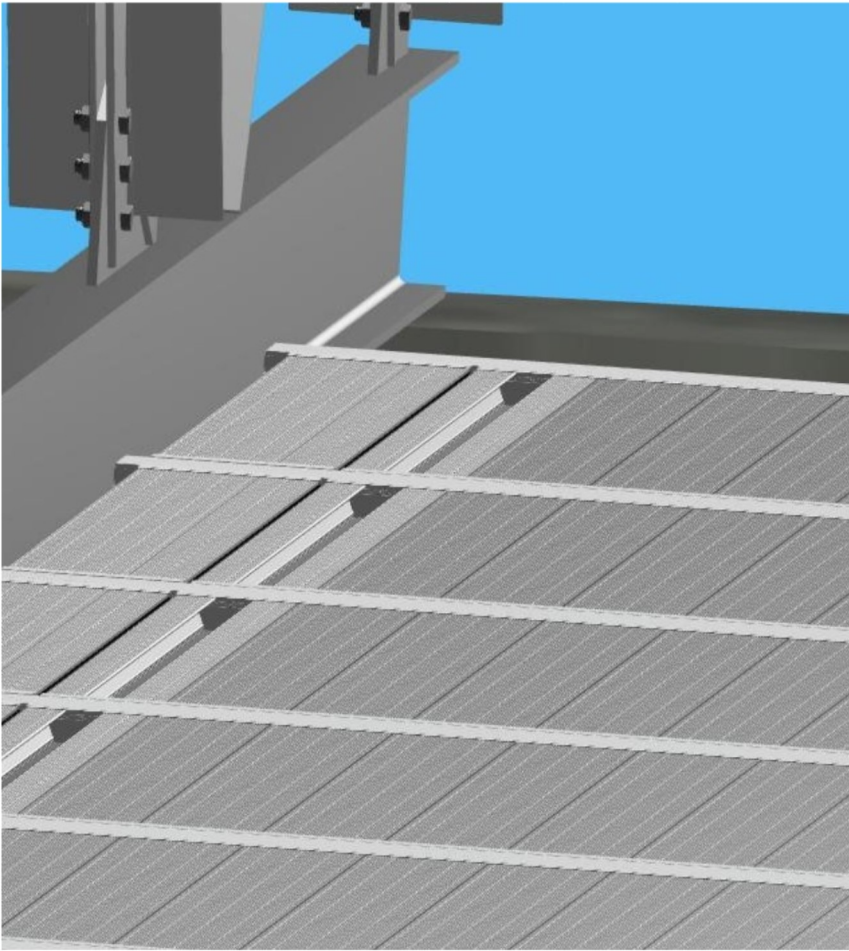




**STANDARD-DUTY ALUMINUM INTERLOCKING FLAT PANEL COVERS  
(3 HINGED COVER PANELS SHOWN)**



**PMWI ■ 45 Dundaff Street, Carbondale, PA 18407 ■ (570) 282-6164 ■ [www.pmwi.net](http://www.pmwi.net)**



## **STANDARD-DUTY ALUMINUM INTERLOCKING FLAT PANEL COVERS**

PMWI's innovative Standard-Duty Aluminum Interlocking Flat Panel Covers are an attractive, economical and structurally sound alternative to traditional diamond plate covers and other expensive interlocking cover systems. PMWI's custom aluminum extrusions can be assembled in various configurations to meet your specific cover requirements. Our modular construction provides a total cover solution to help meet the environmental demands for many storage tank applications. Our unique PMWI hinge extrusion is a heavy-duty design that contains no small gear teeth that can block with debris and cause breakage. This allows our hatch covers to operate for many years without any interruption in service. PMWI Standard-Duty Aluminum Interlocking Flat Panel Covers utilize interlocking construction that offers a substantially gas-tight system providing odor control and emissions containment. PMWI also offers structural engineering resources to design Truss Supported Aluminum Covers for long span applications. Whatever your cover needs, PMWI can assist you in meeting all your requirements and expectations.

Reservoir Tank Covers

Clarifier Covers

Sludge Holding  
Tank Covers

Bio-Tower Covers

Storage Vessel Covers

Odor Control

Protection

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At Pleasant Mount Welding, Inc., we create innovative aluminum cover systems that offer cost-effective, long term solutions for architectural, municipal, and industrial storage applications. Our flat panel covers are widely used in the water and wastewater industries due to their chemical resistance, minimal lifetime maintenance requirements, and low construction cost. Every PMWI aluminum cover is custom designed to meet specific project needs and engineered for any snow, wind, and suspended load requirements. The modular structural design allows PMWI to construct covers of any size required on a variety of environmental projects. Pleasant Mount Welding, Inc.'s competitive advantage is our quality reputation, unmatched experience, and the fact that we are the complete package - we design, engineer, detail, and fabricate all of our covers in-house.



## **WATER & WASTEWATER APPLICATIONS**

- Great for odor control applications
- Easily customized to conform around penetrations or equipment
- Substantially gas-tight enclosure
- Reduced air volume for lower air filtration costs – SAVES ENERGY
- Hinged panels are great for access to large areas below the covers
- Standard-Duty interlocking flat panel covers are perfect for heavy foot traffic or frequent access to equipment



## STRUCTURALLY SOUND

The structural integrity of a PMWI Standard-Duty Aluminum Interlocking Flat Panel Cover is unmatched by any competitor's cover. Each cover can be built to provide for high load pedestrian walkways and work areas. PMWI Standard-Duty Interlocking Flat Panel Covers are designed for a 50 PSF live load and concentrated loads of 400 pounds (allowable deflection L/240) but are capable of withstanding much higher concentrated loading without permanently deforming. The phenomenon of surface dishing due to concentrated load over-stressing, common with many inferior cover systems, is not an issue for PMWI Flat Panel Covers. The cover panel and structural support interlocking configuration allows PMWI to design cover systems capable of withstanding higher distributed loads compared to many other covers. Our unique modular design provides the ability to configure cover systems in any geometric shape (circular, rectangular or irregular) or size.

## CHEMICAL RESISTANT

All PMWI Standard-Duty Aluminum Interlocking Flat Panel Covers are fabricated using 6061-T6 alloy corrosion resistant aluminum extrusions and support members. Every gasket used between adjacent cover panels is made of a elastomeric UV resistant polymer material. Our slide latch assembly is also a 6061-T6 alloy extrusion and uses a stainless steel wing screw for corrosion resistance. Replaceable Santoprene™ gaskets are used to provide a seal on the cover perimeter and to isolate the cover from concrete or steel tank walls. Santoprene™ gaskets are also used at all panel-to-panel interfaces.

## EASY INSTALLATION

The modular design of our Standard-Duty Aluminum Interlocking Flat Panel Covers allow us to fully assemble all cover panels in-house, thereby minimizing field installation time compared to other more labor intensive systems. This results in greater cost savings during initial installation. Due to ease of cover removal and reinstallation the overall maintenance costs over the cover life are also less. Bottom line...GREATER SAVINGS

## AESTHETIC APPEARANCE

The PMWI Standard-Duty Aluminum Interlocking Flat Panel Cover has a visually appealing look. The low profile of our covers create no trip hazards and all of our extruded cover components have been designed with aesthetics in mind. Whether flush mounted, top mounted or recess mounted, PMWI covers maintain a sleek visually attractive appearance. The cover's deck plank surface is a mill finish that incorporates ribbed striations for slip resistance and helps to reduce the unsightly look of a smooth metal appearance.



## AIRTIGHT

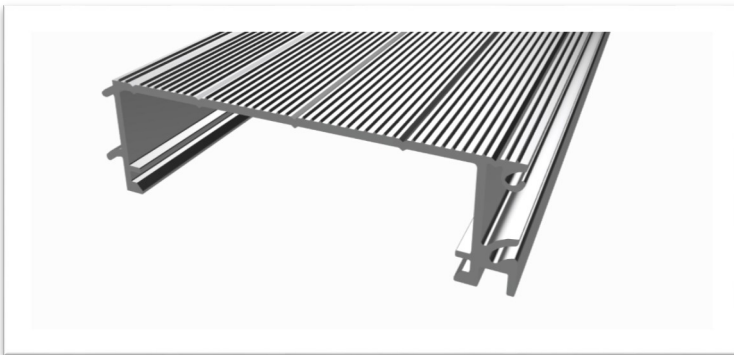
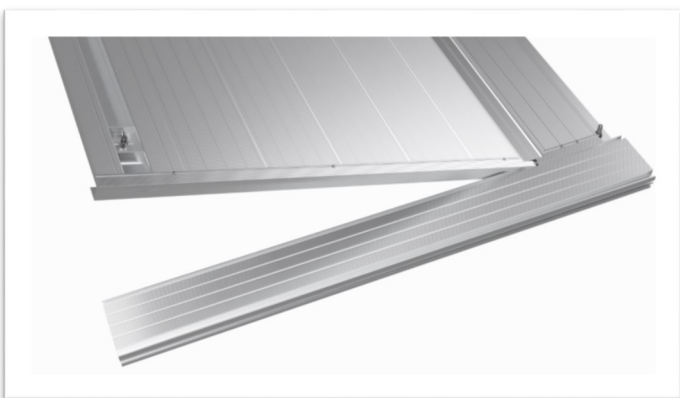
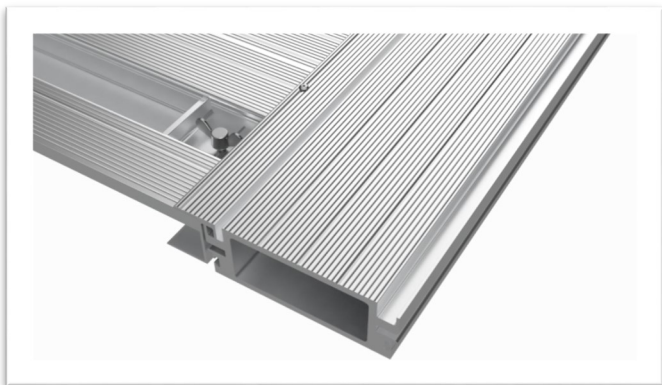
The male-female connecting ends on PMWI deck planks in combination with the interlocking support components provides a substantially gas tight cover system. The close extrusion tolerances on our cover components provides the means for safely containing gases and odors. Thermoplastic elastomer gaskets are used between all adjacent panels and at the cover perimeter. These UV resistant polymer gaskets are replaceable and allow for thermal expansion and contraction of the cover while maintaining the joint seal integrity. PMWI Standard-Duty Interlocking Flat Panel Covers are designed to have minimal air leakage and provide excellent odor control.





## LOW MAINTENANCE

PMWI Standard-Duty Aluminum Interlocking Flat Panel Covers require very little maintenance. The modular design of PMWI Aluminum Covers makes maintenance far easier than the typical bent metal or component type cover systems available on the market today. Cover removal is easy since there are no rusted sheet metal screws, frozen nuts or sticking seals to deal with. Cover panels can easily be lifted without the aid of lifting equipment. The maximum cover panel weight does not exceed 150 pounds and typically will be less than 100 pounds and can easily be lifted by hand by two people. The easy removal process ensures total access to process equipment and other items located below the covers. Lubrication or special tools are not required for the routine operation and maintenance of Standard-Duty PMWI Aluminum Interlocking Flat Panel Covers. Beside keeping the hinges free of debris that may impair opening and closing, our system is relatively maintenance free.



## ENERGY SAVINGS

The use of PMWI Standard-Duty Aluminum Interlocking Flat Panel Covers for odor control units can significantly lower your energy costs. Compared to dome covers, our flat cover system will have a reduced volume of enclosed gases that allow the sizes of the blowers, fans, ducts and scrubbers to be downsized. As a result, your power consumption will be less and an overall savings will be realized, both in the initial construction cost and operational costs once in service.

## INNOVATION & EXPERIENCE

Pleasant Mount Welding, Inc. has been providing products and services to the water and wastewater industries for almost 40 years. Our experience in this industry has allowed us to observe many problems that our customers encounter. Using this wealth of knowledge, PMWI has been able to develop our innovative Standard-Duty Aluminum Interlocking Flat Panel Covers to meet the requirements for a durable, cost effective cover that can compete with any cover system in the marketplace. When we see an opportunity, PMWI comes up with creative solutions to help our customers succeed.



## PMWI STANDARD-DUTY ALUMINUM INTERLOCKING FLAT PANEL COVER FEATURES

- Removable (hinged or non-hinged) panels
- Substantially Air-Tight
- Elastomeric UV Resistant Gaskets
- Reduced air volume
- Slip Resistance Striations
- Low deflection
- Interlock Handles
- Slide Latch Locking Assemblies
- Modular Components for Ease-of-Build
- Interlocking Construction

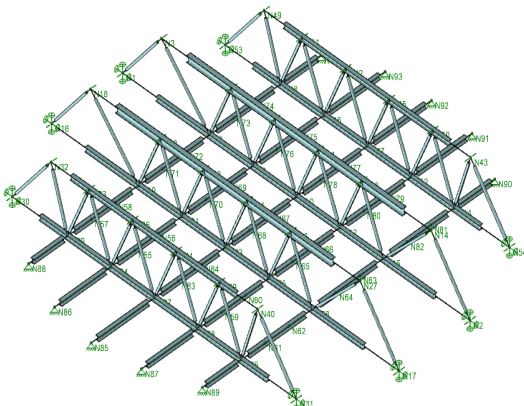
## WATER & WASTEWATER RESERVOIR COVERS

The public's growing concern for clean water is pushing governments to implement legislation regarding water quality and municipal practices for protecting our environment. Storage facilities are being required to cover finished water reservoirs to help keep out contaminants. Our engineering team is experienced in creating custom solutions for covering clarifiers, reservoirs, sludge holding tanks, and other storage facilities with our innovative aluminum covers. Our custom hinges allow for easy access to weirs, basins, blowers and other equipment located below the covers. This provides odor control and a safe working environment for plant operators. PMWI aluminum covers require little to no lifetime maintenance, reducing plant preservation costs and saves energy. Our covers are durable and strong enough to handle large loading requirements, allowing for safe navigation throughout the plant.

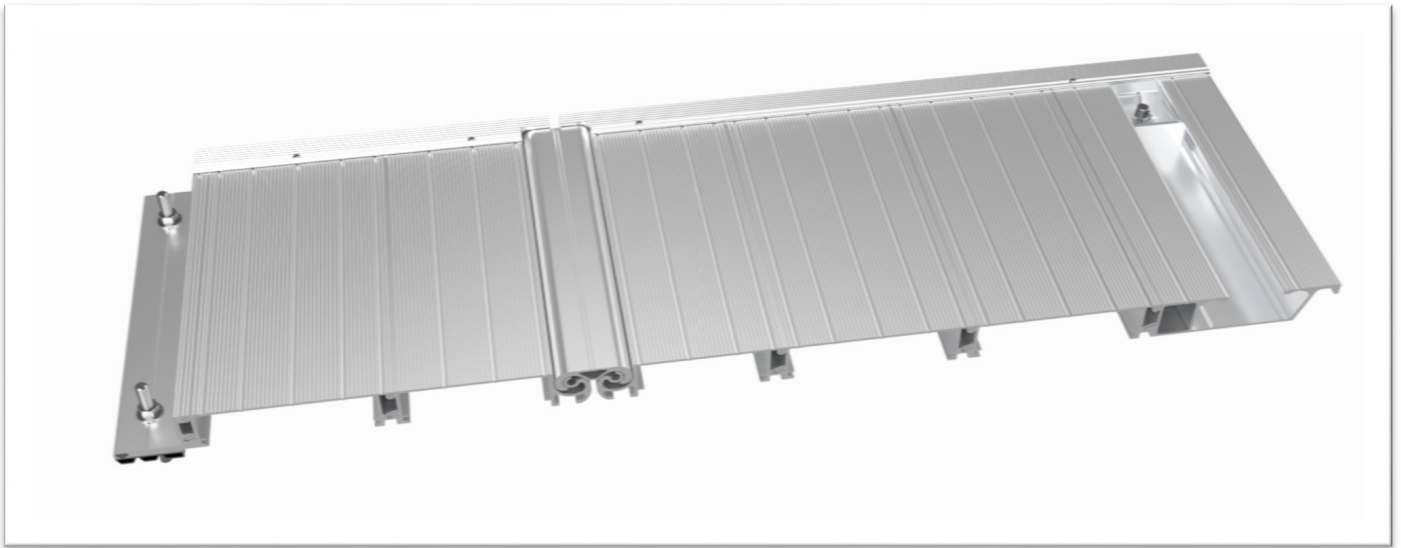


## TRUSS SUPPORTED ALUMINUM COVERS

Truss supported aluminum cover systems can be designed by PMWI to meet your particular structural requirements. Consult with the Pleasant Mount Welding, Inc. Engineering Department regarding the feasibility of your specific cover project and we will evaluate and determine the most cost effective truss design to incorporate into your Aluminum Cover System.



# PMWI STANDARD-DUTY ALUMINUM INTERLOCKING COVER



- Interlocking Construction (Non-Welded)
- Configurable as Interlocking Cover Panels or Mechanically Fastened Panels
- Designed for 50 PSF Uniform Load & 400 Lbs. Concentrated Load @ Maximum Span of 5'-0"
- Hinged and Fixed Cover Panels
- Extruded Slide Lock Assembly to secure covers from uplift
- Santoprene™ Elastomeric Gaskets for Substantially Air Tight Cover
- One-piece Heavy Duty Extruded Hinge is flush with Cover Decking
- Extruded Interlock Handles
- Flush Mount or Top Mounted Cover Systems
- Easily Remove and Reinstall Cover Panels





# **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](mailto: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 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 Pleasant Mount Welding, Inc. aluminum cover plank (decking) is 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

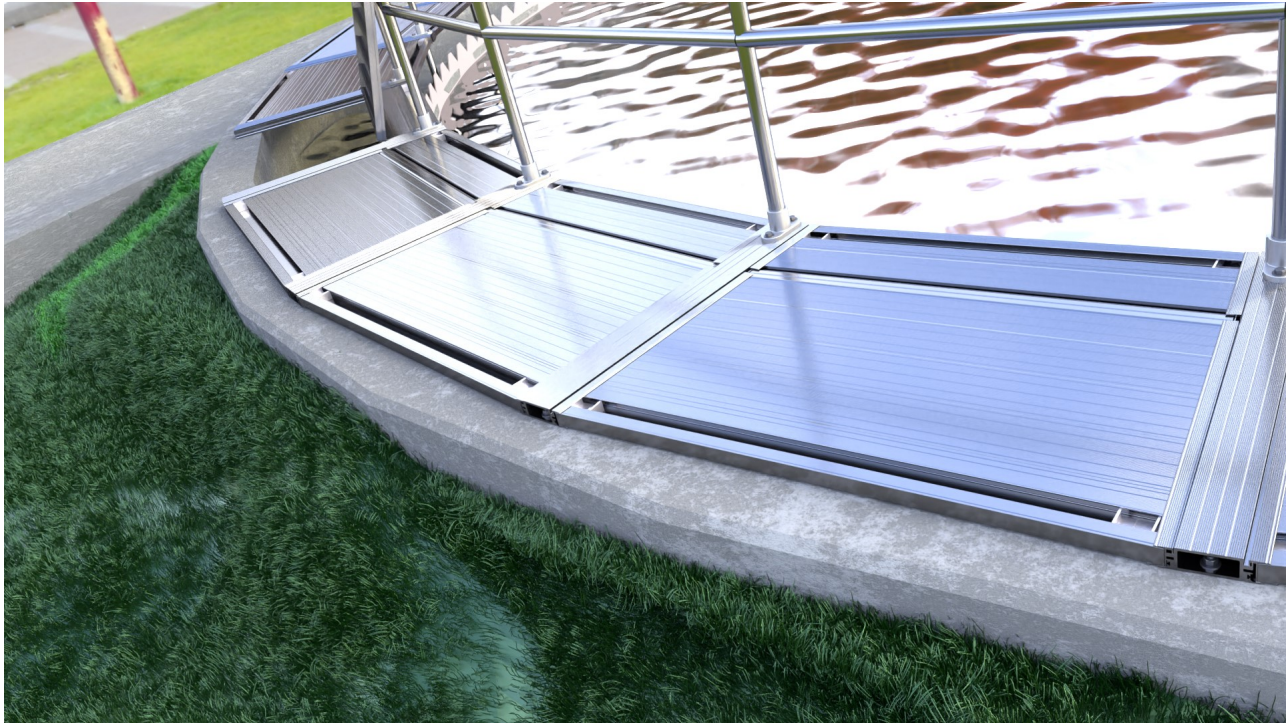
All aluminum used in these Flat Panel Cover Systems are presumed to be recyclable upon demolition.

## OPERATION & MAINTENANCE MANUAL

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







**STANDARD-DUTY ALUMINUM INTERLOCKING FLAT PANEL COVERS  
USED AS CLARIFIER LAUNDER COVERS**

