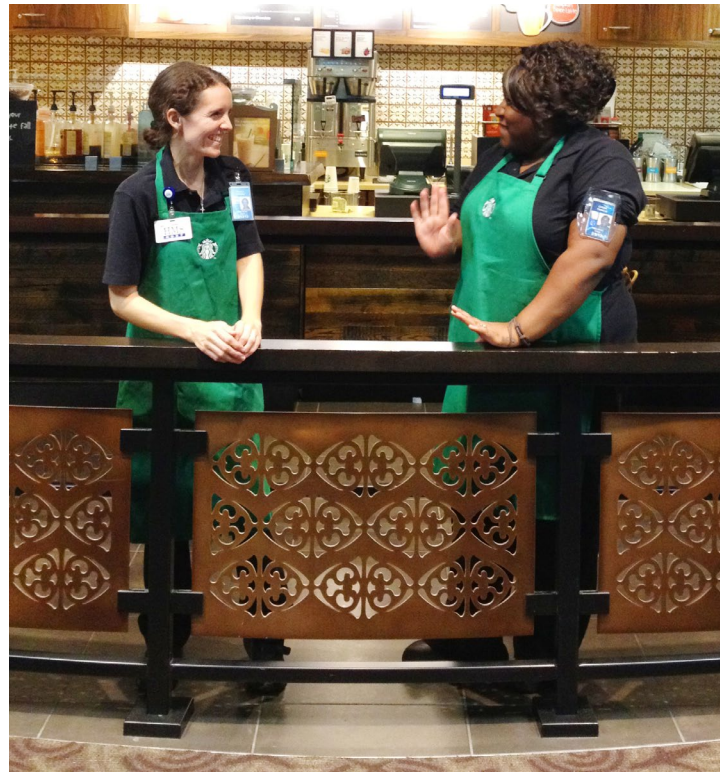


*Parasoleil*

# Railing & Guardrail Design Guide



# About Parasoleil




## Precision cut, hand-finished artisan architectural panels

Parasoleil designs and manufactures an exceptional line of laser-cut architectural metal panels with unique patterns that offer a profoundly artistic aesthetic to any space. Engineered to withstand the elements and manufactured in the United States, these decorative panels provide a functional and durable design that is warranted to last. Parasoleil's project guidance, proprietary hardware and installation system, production dependability, and beautiful powder coats ensure your project's vision comes to life in a memorable and lasting way.

*Contact us to learn more*

---

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Westminster, CO 80031  
Phone | (303) 327-9997  
Email | [hello@parasoleil.com](mailto:hello@parasoleil.com)  
**[parasoleil.com](http://parasoleil.com)**

 /ParasoleilUSA  
 /Parasoleil  
 /ParasoleilUSA

*Parasoleil*

All Parasoleil patterns are protected under copyright law. Copying, modifying, or any unauthorized use of these patterns is strictly prohibited.



# Assembly & System Options

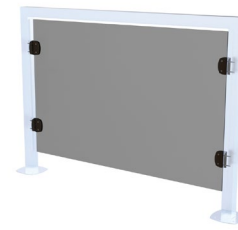
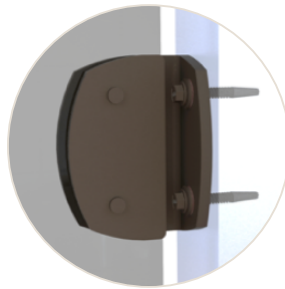
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## INSET MOUNT

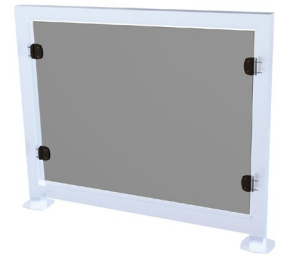
Parasoleil Bracket Inset (PBI) Series

### Best Use:

Two sided railing systems with no front or back



Railing



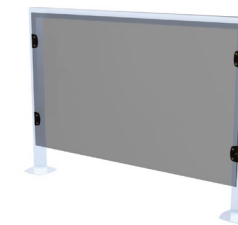
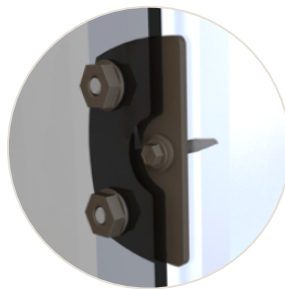
Guardrail

## FLAT MOUNT

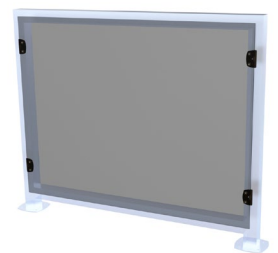
Parasoleil Flat (PFL) Series

### Best Use:

One-sided railing system with maximum field tolerance requirement



Railing



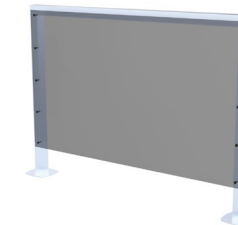
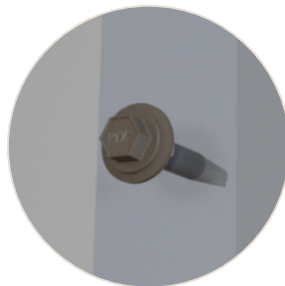
Guardrail

## DIRECT MOUNT

Parasoleil Direct Hex (PDH) Series

### Best Use:

One-sided railing system with minimal visual impact from fasteners



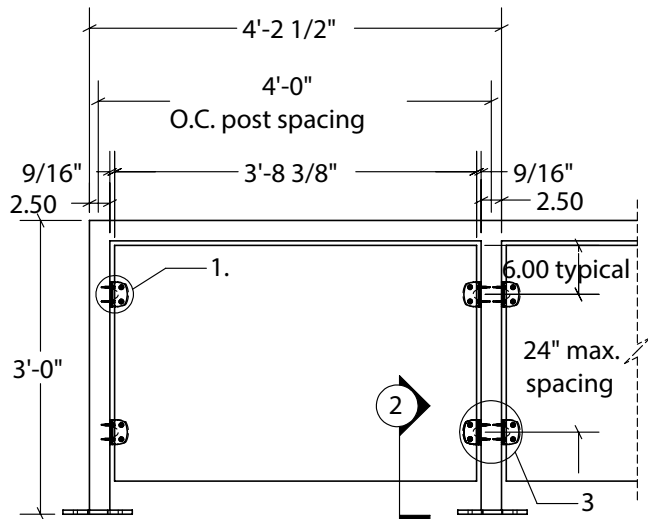
Railing



Guardrail

# PBI Series Details | Railing

## Inset Mount System | Front View Scale 1:20

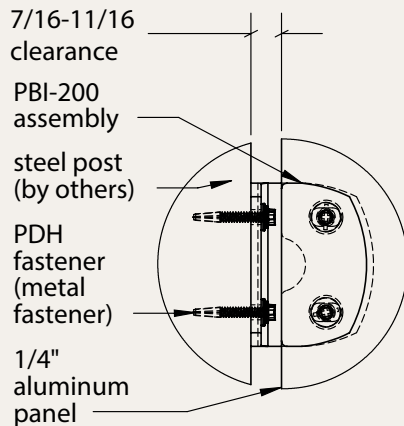


### BRACKET INSET (PBI) SPECIFICATIONS

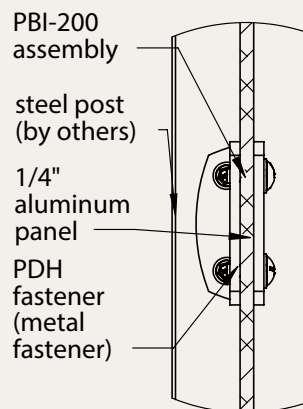
- 3/16" A36 steel plate
- Stainless steel flush mount 1/2" -20 x 1/2" long studs
- Stainless steel barrel nuts with EPDM washers
- Graftone AAMA 2604 compliant powder coat hardware finish
- Zinc primer for maximum adhesion and corrosion resistance

### DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

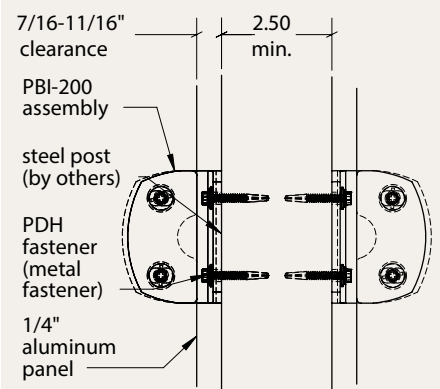
- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel



**1 Inset Bracket (1 Panel)  
Detail Scale 1:3**



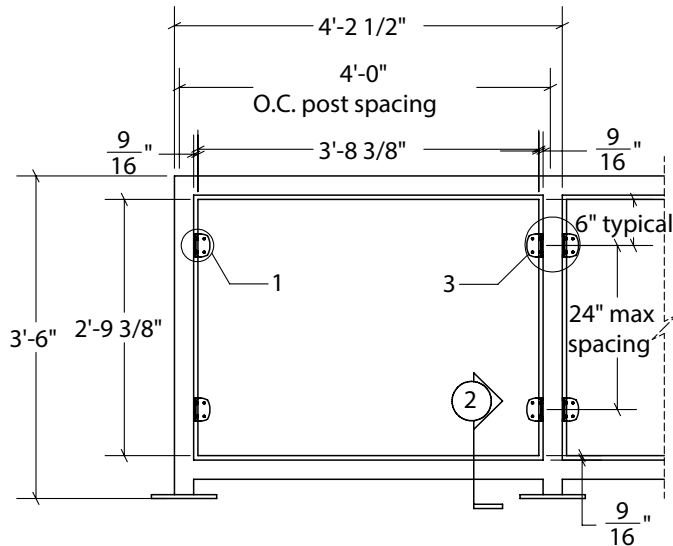
**2 Inset Bracket Section  
Scale 1:3**



**3 Inset Bracket (2 Panels)  
Detail Scale 1:3**

# PBI Series Detail | Guardrail

## Inset Brack System | Front View Scale 1:20



## BRACKET INSET (PBI) SPECIFICATIONS

- 3/16" A36 steel plate
- Stainless steel flush mount 1/2" -20 x 1/2" long studs
- Stainless steel barrel nuts with EPDM washers
- Graftone AAMA 2604 compliant powder coat hardware finish
- Zinc primer for maximum adhesion and corrosion resistance

## DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel

7/16"-11/16"  
clearance

PBI-200  
assembly

steel post  
(by others)

PDH  
fastener  
(metal  
fastener)

1/4"  
aluminum  
panel

### 1 Inset Bracket (1 Panel) Detail Scale 1:3

PBI-200  
assembly

steel post  
(by others)

1/4"  
aluminum  
panel

PDH  
fastener  
(metal  
fastener)

### 2 Inset Bracket Section Detail Scale 1:3

1/4"  
aluminum  
panel

steel post  
(by  
others)

PBI-200  
assembly

PDH  
fastener  
(metal  
fastener)

2.50  
min.

PDH  
fastener  
(metal  
fastener)

### 3 Inset Bracket (2 Panels) Detail Scale 1:3

# PBI Series Installation Guidance

## PARTS LISTING:



**PBL-200**  
Base



**PBL-200**  
Mounting Plate



**PDS SCREWS**  
Bracket anchor



**BARREL NUTS**



**PDH SCREWS**  
For installing on  
metal structures  
- OR -



**PDW SCREWS**  
For installing on  
wood structures



**NEOPRENE  
WASHERS**

## TOOLS NEEDED

- Measuring tape
- Marking pencil
- Conventional drill with 7/16" driver
- Phillips screwdriver

## PREPARATION

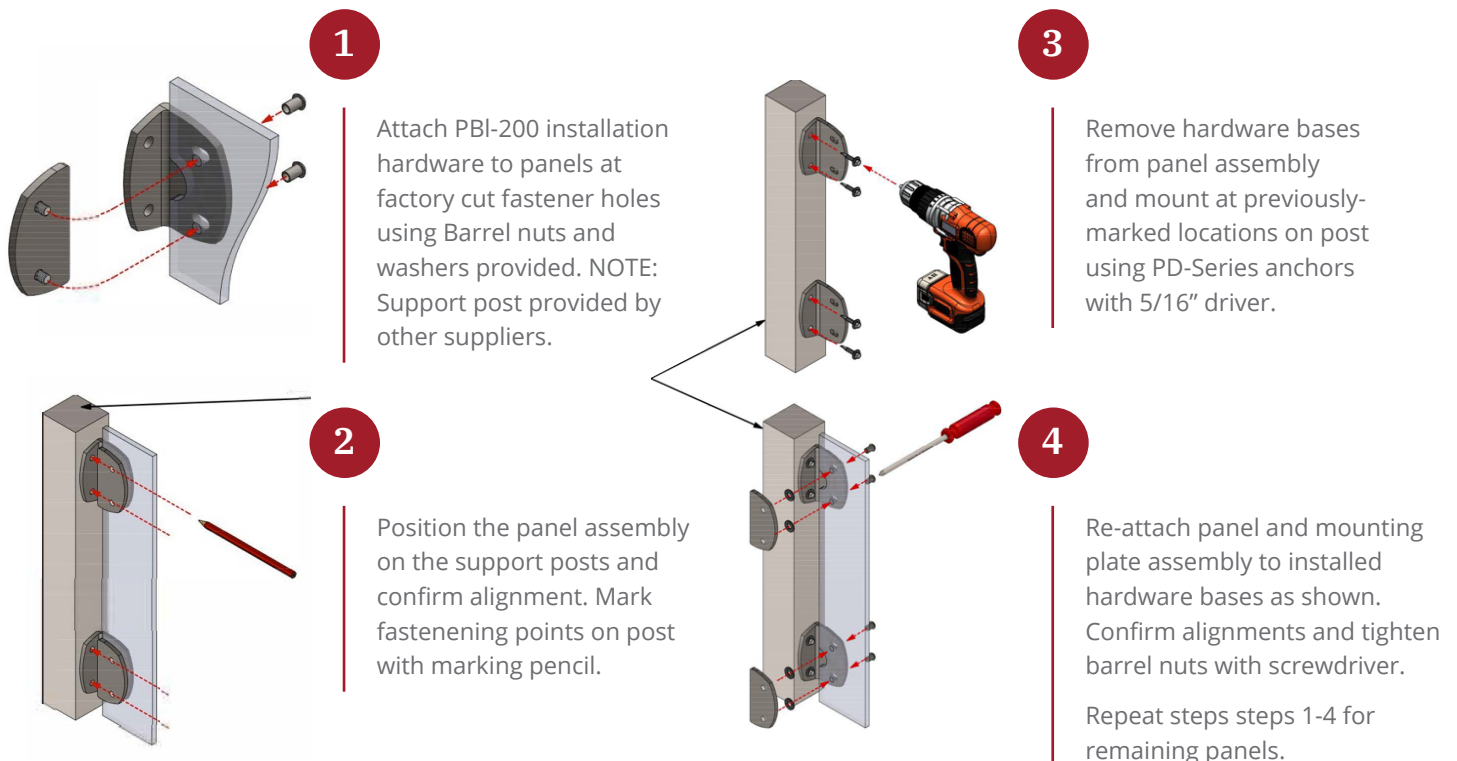
Confirm support post spacing and configuration consistency with panel sizes.

## FIELD NOTES

Contact Parasoleil for installation questions especially for high wind load conditions. See Parasoleil's warranty document for coverage. Field drilling Parasoleil panels is allowed under warranty, however field cutting panels is not recommended and will void manufacturer's warranty.

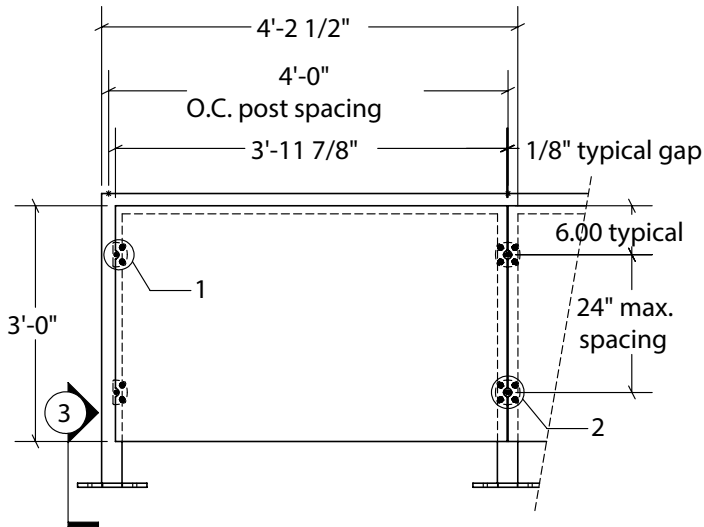
If an alternate panel size is needed, contact Parasoleil for assistance.

**Figure 1: Typical PBI Hardware Installation**



# PFL Series Details | Railing

## Flat Mount System | Front View Scale 1:24

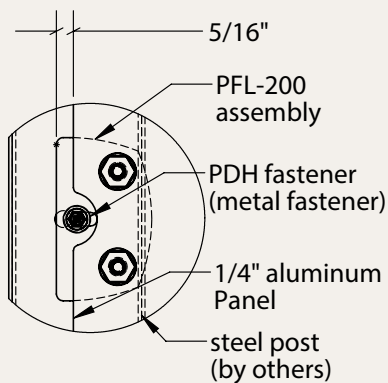


### FLAT BRACKET (PFL) SPECIFICATIONS

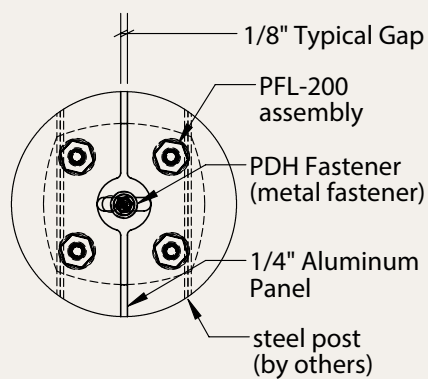
- 1/8" A36 steel plate
- Stainless steel flat mount 1/4" -20 x 1/2" long studs
- 70 in/lb max nut tightening torque
- Stainless steel locking flange hex nuts with EPDM washer
- Stainless steel center anchor with bonded neoprene washer

### DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

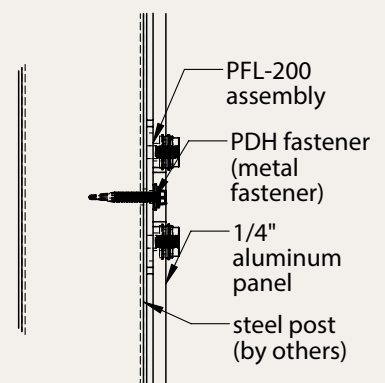
- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel



**1 Flat Bracket (1 Panel)  
Detail** Scale 1:3



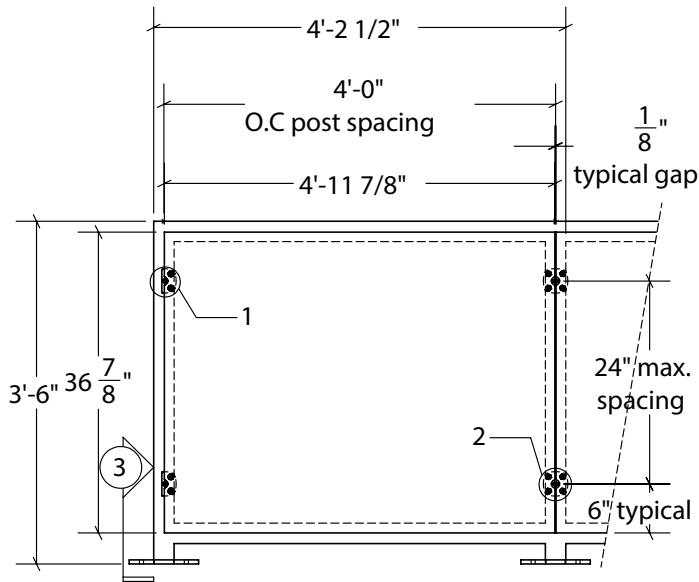
**2 Flat Bracket (2 Panel)  
Detail** Scale 1:3



**3 Flat Bracket Section**  
Scale 1:3

# PFL Series Details | Guardrail

## Flat Mount System | Front View Scale 1:24

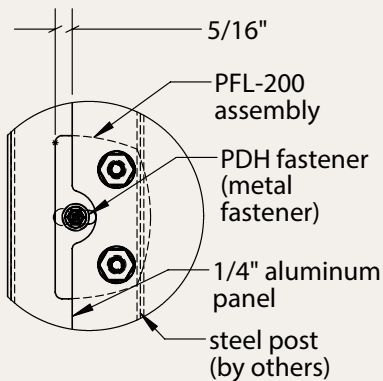


## FLAT BRACKET (PFL) SPECIFICATIONS

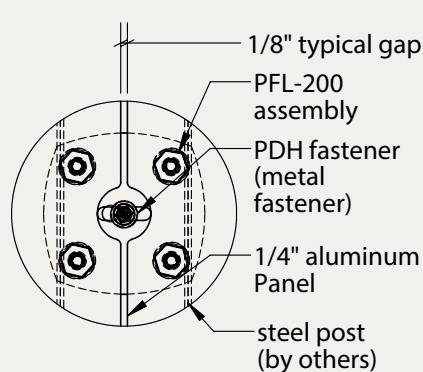
- 1/8" A36 steel plate
- Stainless steel flat mount 1/4" -20 x 1/2" long studs
- 70 in/lb max nut tightening torque
- Stainless steel locking flange hex nuts with EPDM washer
- Stainless steel center anchor with bonded neoprene washer

## DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

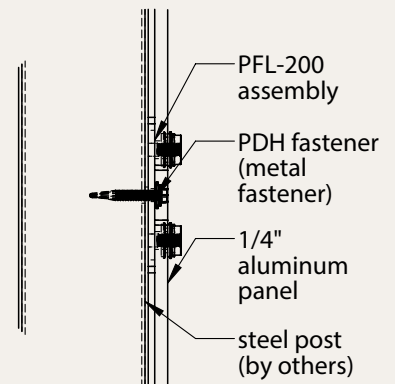
- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel



**1 Flat Bracket (1 Panel)  
Detail Scale 1:3**



**2 Flat Bracket (2 Panel)  
Detail Scale 1:3**



**3 Flat Bracket Section  
Scale 1:3**



# PFL Series Installation Guidance

## PARTS LISTING:



**PFL-200**  
Perimeter of  
panel array



**PDH SCREWS**  
For installing on  
metal structures

- OR -



**PFL-400**  
Interior at panel  
seams



**PDW SCREWS**  
For installing on  
wood structures



**LOCKNUTS**  
At each bracket  
stud



**NEOPRENE  
WASHERS**

## TOOLS NEEDED

- Measuring tape
- Marking pencil
- Conventional drill with 5/16" and 7/16" drivers

## PREPARATION

Confirm adequate blocking or structure is present within wall at center anchor mounting locations.

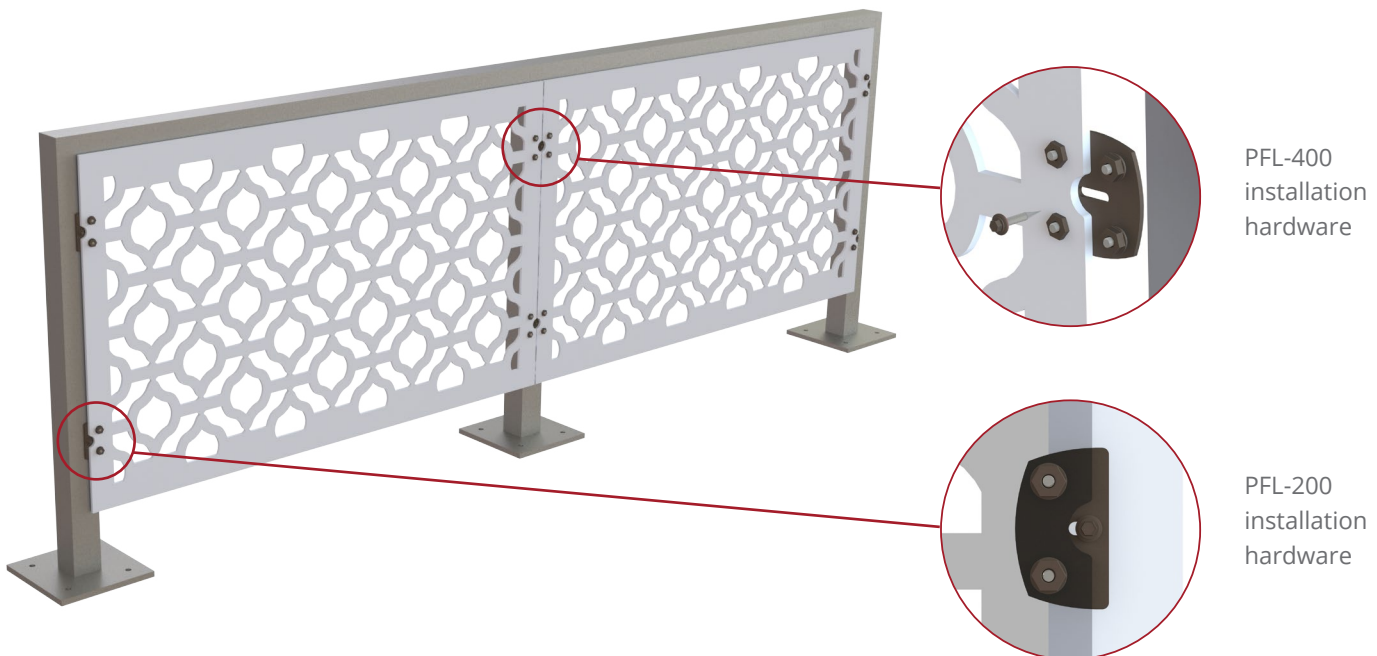
## FIELD NOTES

Contact Parasoleil for installation questions, especially for high wind or snow load conditions.

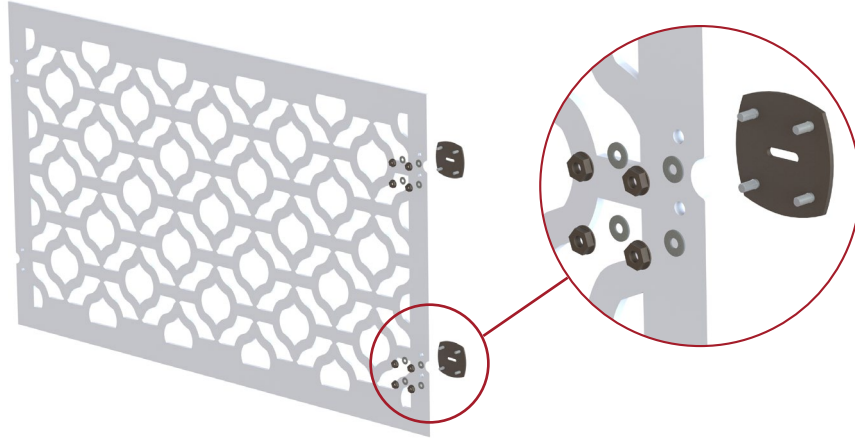
See Parasoleil's warranty document for warranty coverage.

Field drilling Parasoleil panels is allowed under warranty, however, field cutting panels is not recommended and will void manufacturer's warranty. If an alternate panel size is needed, contact Parasoleil for assistance.

**Figure 1:** Typical Hardware Layout

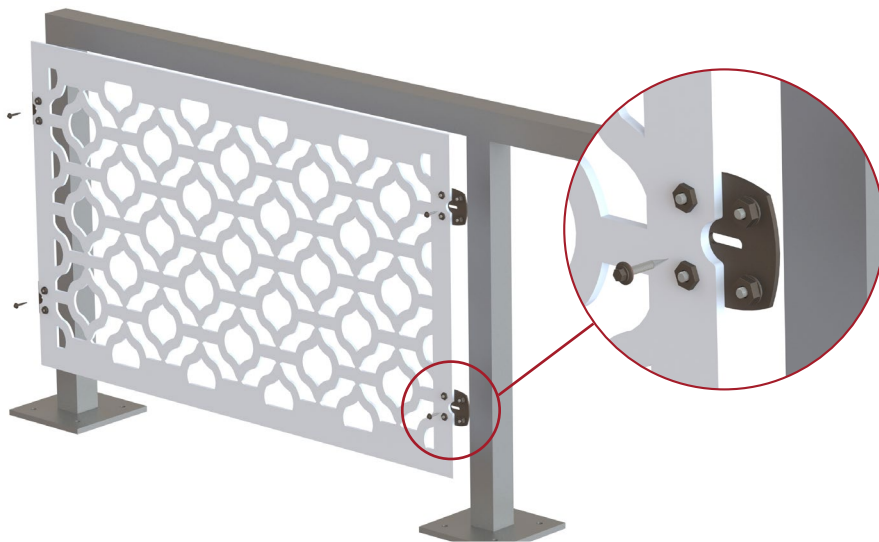


# PFL Series Installation Guidance (*Continued*)



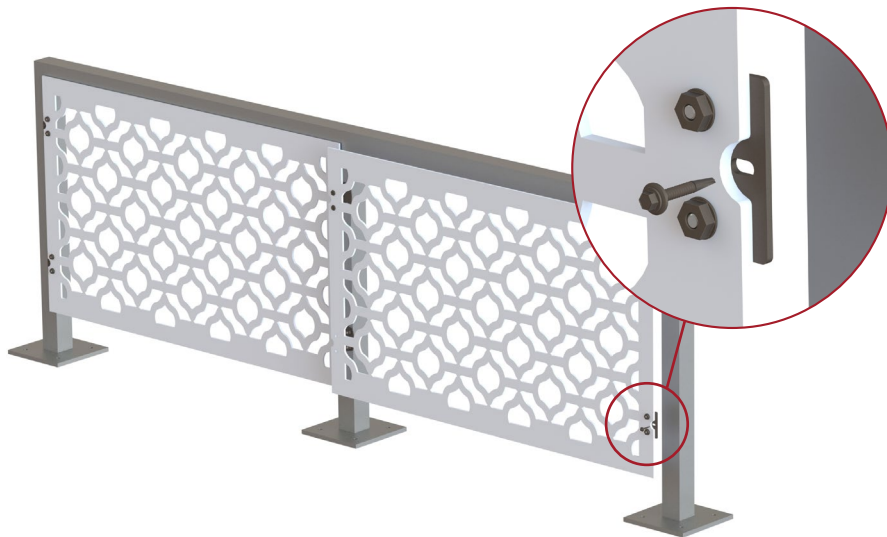
1

Beginning with the first panel, as shown in Figure 1, attach PFL-Series installation hardware to panels at factory cut fastener holes using lock nuts and washers included and 7/16" driver (do not over-tighten).



2

Position the first panel assembly on the support posts and confirm alignment. Install assembly with PD-Series center anchors using 5/16" driver.



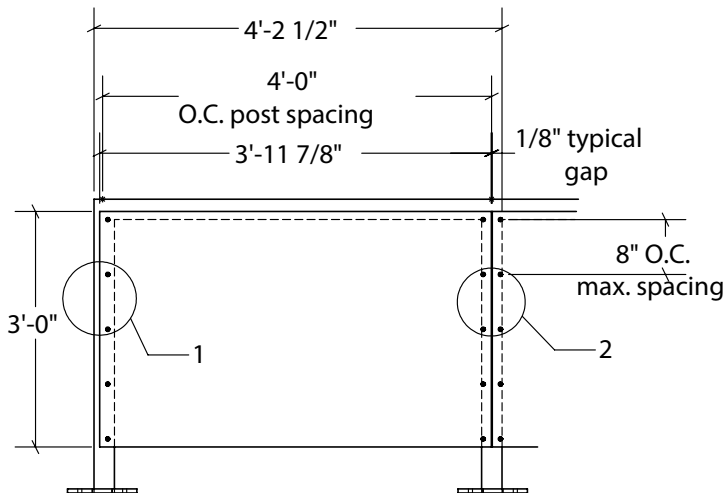
3

Repeat step 1 for the next panel and position on support posts using shared hardware points on Panel 1 as shown. Confirm alignments and install second assembly using PD-Series center anchors with 5/16" driver.

*Repeat steps 1-3 for remaining panels.*

# Direct Mount Details | Railing

## Direct Mount System | Front View Scale 1:24

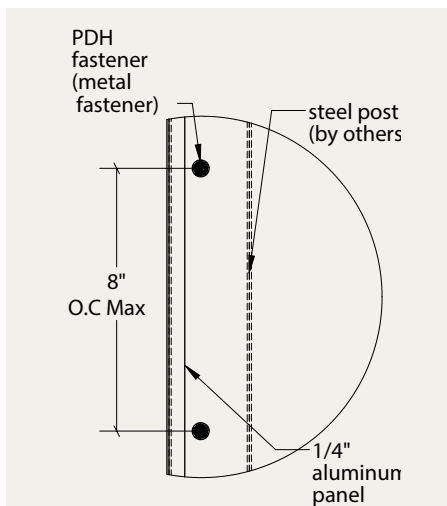


## DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

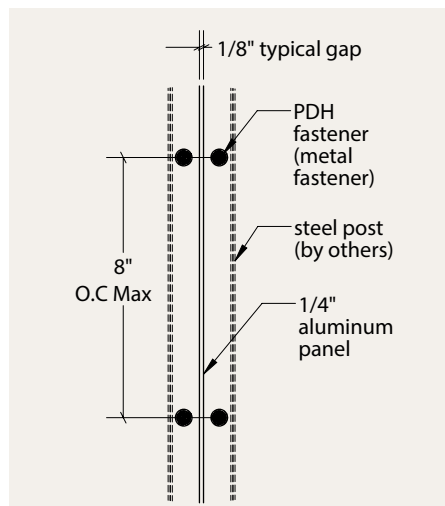
- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel

## DIRECT (PDS) SELF DRILLING SCREW SPECIFICATIONS

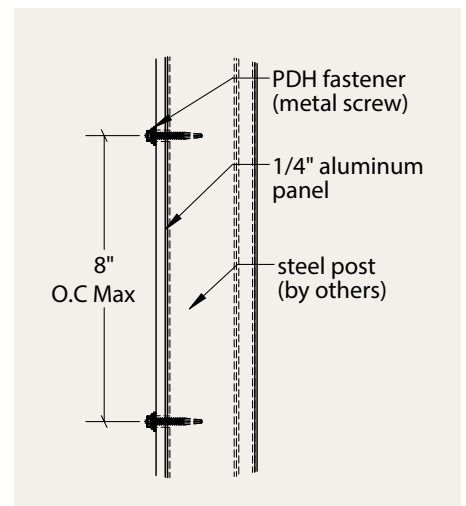
- #12 - 14 x 1-1/4" with #3 drill tip
- 1/2" Outside Diameter low profile head
- 300 series stainless steel head & shank
- Bonded neoprene washer
- Tamper resistance fastener head with no accessible driver access
- Provided drive socket ensures positive engagement and prevents damage to painted fastener head
- Pull-out value: 1,282 lbs when installed in 1/8" substructure



**1** Direct Mount (1 Panel)  
Detail Scale 1:4



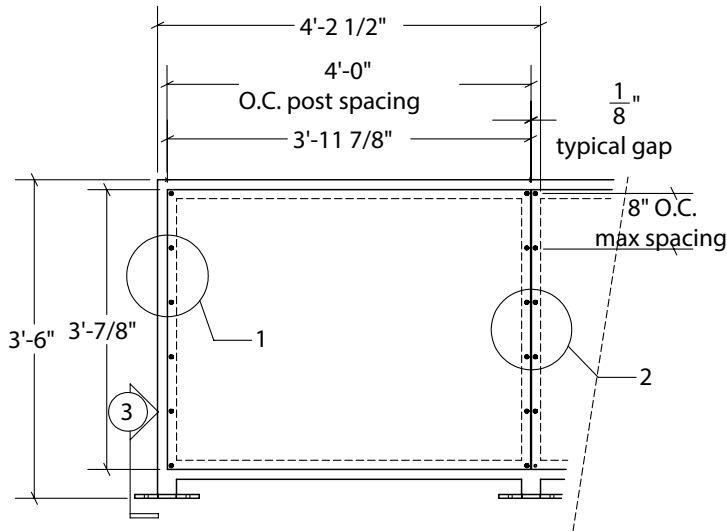
**2** Direct Mount (2 Panel)  
Detail Scale 1:4



**3** Direct Mount Section  
Scale 1:4

# Direct Mount Details | Guardrail

## Direct Mount System | Front View Scale 1:24

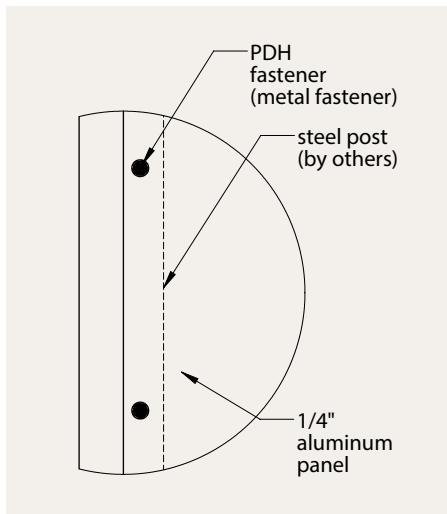


## DIRECT HEX (PDH) SELF DRILLING SCREW SPECIFICATIONS

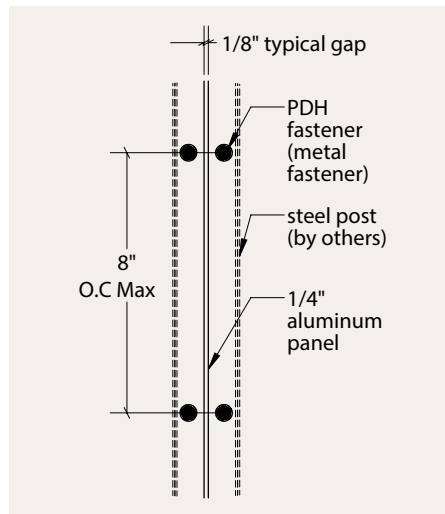
- #12-24 x 1-1/2" with #3 drill tip
- 5/16" hex head and driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 2,100 lbs when installed in 3/16" steel

## DIRECT (PDS) SELF DRILLING SCREW SPECIFICATIONS

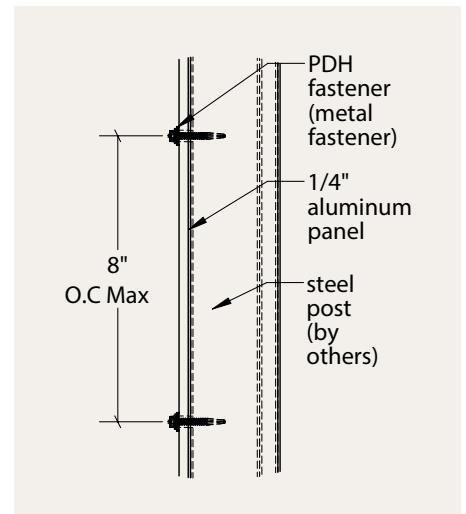
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- Bonded neoprene washer
- Tamper resistance fastener head with no accessible driver access
- Provided drive socket ensures positive engagement and prevents damage to painted fastener head
- Pull-out value: 1,282 lbs when installed in 1/8" substructure



**1** Direct Mount (1 Panel)  
Detail Scale 1:4



**2** Direct Mount (2 Panel)  
Detail Scale 1:4



**3** Direct Mount Section  
Detail Scale 1:4



# Spec Guidance & Engineering

## PANEL SPANS

Recommended panel thicknesses for certain widths using our Panel Thickness Callibrator to find the more appropriate dimensions.

PANEL SPAN / THICKNESS EXAMPLE TABLE

THICKNESS	WEIGHT*	SPAN BETWEEN SUPPORTS**
1/8"	1.8 lbs/sf	24-36"
3/16"	2.6 lbs/sf	30-48"
1/4"	3.5 lbs/sf	36-52"

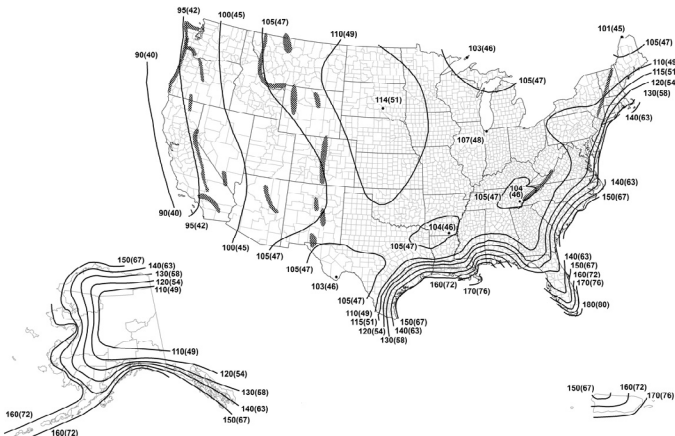
\* Subtract pattern open % for final weight.  
\*\* General guideline only, please ask Parasoleil for project specific design assistance.



## WINDLOADS CONSIDERATIONS

Parasoleil provides engineering for building railing and guardrail components including our perforated panels, using a calculated design pressure based on key factors such as area wind speed, application height above the ground, project Risk Category, and Site Exposure Category.

Using conventional structural calculations as well as our sophisticated Finite Element Analysis modeling software, this project specific design pressure is then applied to the railing and guardrail system components to determine their deflection and material stress values as compared to building code requirements.



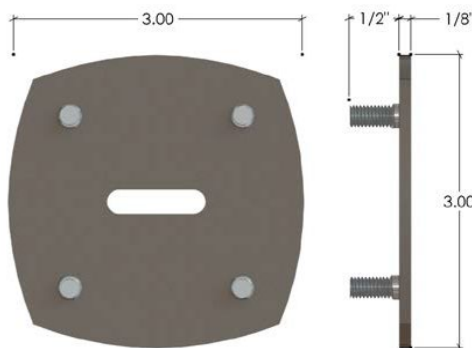
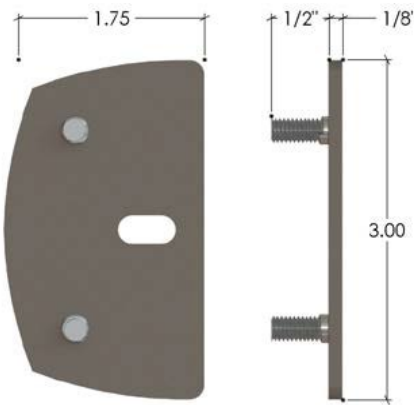
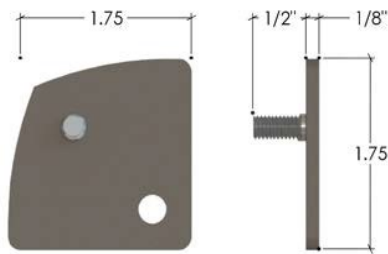
Credit: ASCE 7-16 Risk Category II Basic Wind Speed Map

## SPECIFICATION PROCESS

1. Determining exact details to meet project design load requirements.
2. Full specifiable cladding systems for ease of procurement and installation by one substrate.
3. Proprietary patterns and hardware systems for confidence in locking the specification.



# PFL Series Installation Hardware



Parasoleil's standard hardware combines beauty, utility, and durability to offer an elegant installation solution for a wide range of projects. It is an expressed element that standardizes the installation process, increases corrosion-resistance and enhances the overall aesthetic of the installation.

## BENEFITS & FEATURES

- Universal design for attachment of aluminum panels up to 1/4" thick (US Patent Pending)
- Easy three-step installation
- Universal factory cut fastener holes ensure consistent fastening point and panel spacing
- Adjustable for inconsistent field conditions
- Minimizes moisture and debris collection between panel and support structure
- Attaches to steel or wood support structure
- Ideal for attaching to 1 narrow steel or wood support structures less than 2" width

## SPECIFICATIONS

- 1/8" A36 steel plate
- Stainless steel flush mount 1/4" -20 x 1/2" long studs
- 70 in/lb max nut tightening torque
- Stainless steel locking flange hex nuts with EPDM washer
- Corrosion resistant center anchor with bonded neoprene washer

## STRUCTURAL RECOMMENDATIONS

- 24" on center max. recommended bracket spacing along panel edges. Supplemental fasteners are required between hardware locations for high wind or snow load conditions
- Contact local building department for the most accurate snow and wind load information for your area

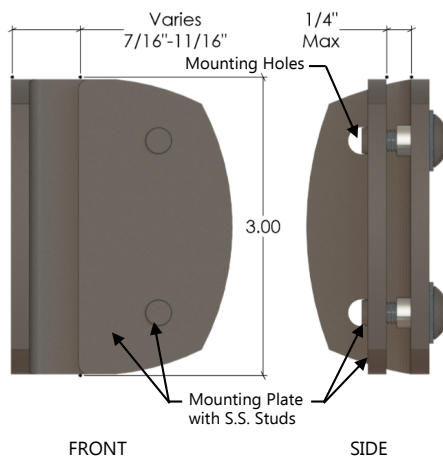
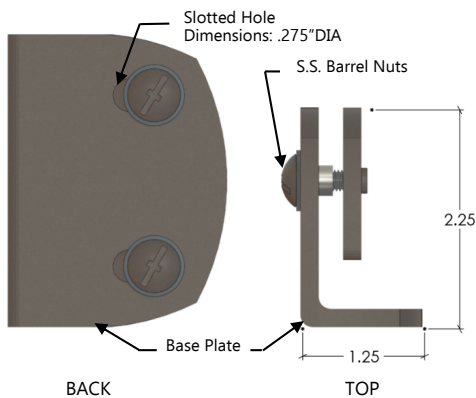
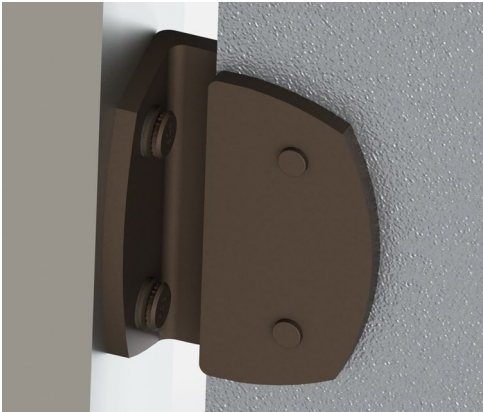
## FINISHES

- Graftone AAMA 2604 compliant powder coat hardware finish
- Zinc primer for maximum adhesion and corrosion resistance

## QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*

# PBI Series Installation Hardware



Parasoleil's standard hardware combines beauty, utility, and durability to offer an elegant installation solution for a wide range of projects. It is an expressed element that standardizes the installation process, increases corrosion-resistance and enhances the overall aesthetic of the installation.

## BENEFITS & FEATURES

- Universal design for attachment of aluminum panels up to 1/4" thick
- Universal factory cut fastener holes ensure consistent fastening point spacing and easy installation
- Adjustable for inconsistent field conditions
- Attaches to steel or wood with a minimum of 2" wide attachment surface

## SPECIFICATIONS

- 3/16" A36 steel plate
- Stainless steel flush mount 1/2" -20 x 1/2" long studs
- Stainless steel barrel nuts with EPDM washers

## STRUCTURAL RECOMMENDATIONS

- 24" on center max. recommended bracket spacing along panel edges
- Contact Parasoleil for installation guidelines
- Contact local building department for the most accurate building code requirements for railing and guardrails

## FINISHES

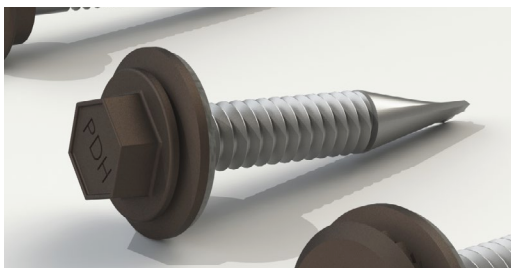
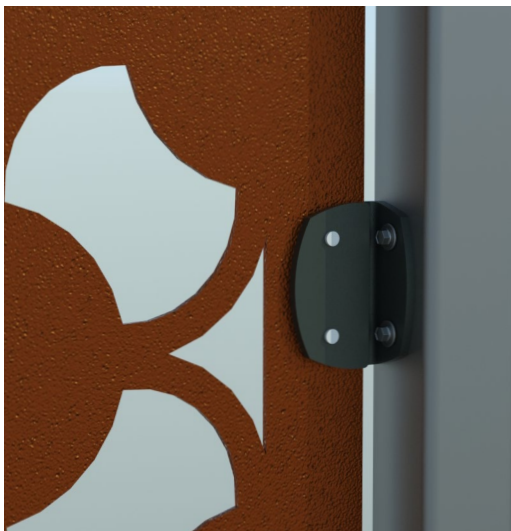
- Three AAMA 2604 compliant powdercoat hardware finishes available
- Zinc primer for maximum adhesion and corrosion resistance



## QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*

# PDH Fastener Hardware

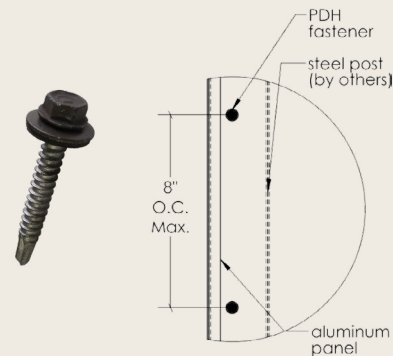


## SELF DRILLING SCREWS FOR STEEL SUPPORTS

Parasoleil aluminum panels may be installed directly onto structural steel supports using our PDH drill screw. Factory cut fastener holes in panels are available upon request. For steel thickness no more than 3/8", pilot holes are recommended.

### PDH DRILL SCREWS

For installing Parasoleil aluminum panels and hardware to structural steel **up to 3/8" thick** and include neoprene washer for maximum corrosion protection.



## INSTALLATION GUIDELINES

- Allow for 1/8" gap between panels for expansion and contraction of the metal due to temperature variations
- Fastener spacing 8" on center maximum at all support locations for engineered applications
- Adjust torque settings as needed to avoid overtightening which may cause fastener twist offs

## PDH DRILL SCREWS SPECIFICATIONS

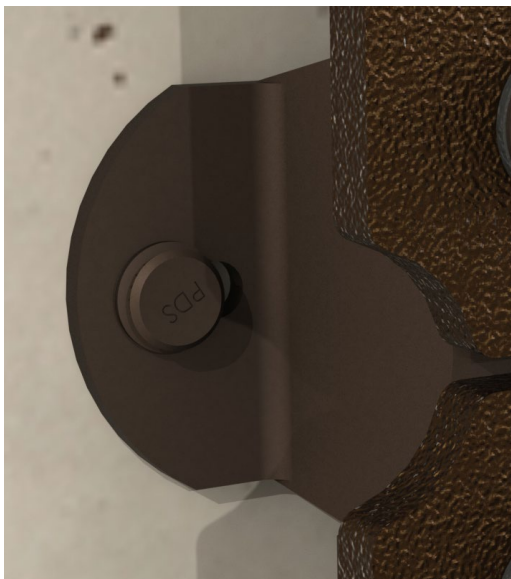
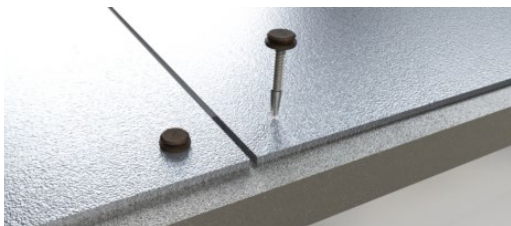
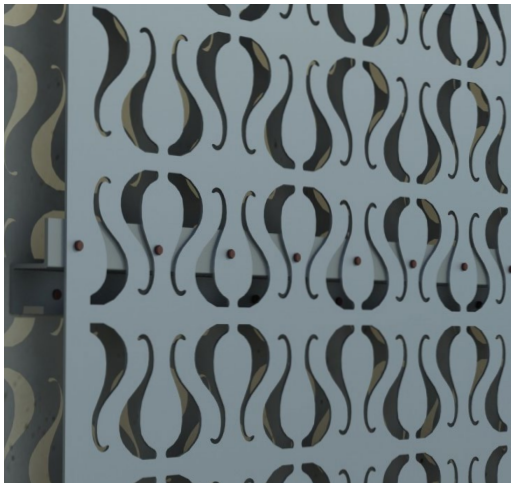
- #12 - 24 x 1" with #3 drill tip
- 5/16" hex head & driver included
- Carbon steel with dual corrosion resistant coatings
- Bonded neoprene washer
- Salt spray resistance: 1,000 hours per ASTM B117
- Pull-out value: 1,678 lbs when installed in 1/8" substructure

## QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*



# PDS Fastener Hardware

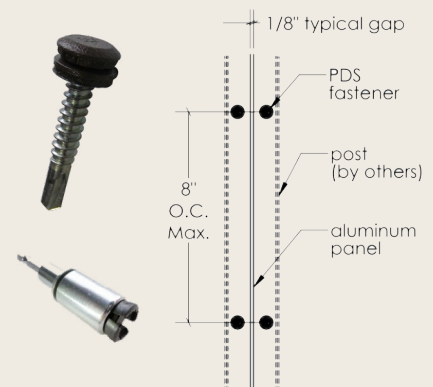


## SELF DRILLING SCREWS FOR STEEL SUPPORTS

Parasoleil aluminum panels may be installed directly onto finished light gauge steel supports using our PDS drill screw. Factory cut fastener holes in panels are available upon request. Tamper resistant proprietary head offers a clean aesthetic for a higher level of finish.

### PDS DRILL SCREWS

For installing Parasoleil aluminum panels to light gauge steel up to 1/8" thick, or aluminum support structure for design conscious applications and include neoprene washer for maximum corrosion protection.



## INSTALLATION GUIDELINES

- Allow for 1/8" gap between panels for expansion and contraction of the metal due to temperature variations
- Fastener spacing 8" on center maximum at all support locations for engineered applications
- Adjust torque settings as needed to avoid overtightening which may cause fastener twist offs

## PDS DRILL SCREWS SPECIFICATIONS

- #12 - 14 x 1-1/4" with #3 drill tip
- 1/2" Outside Diameter low profile head
- 300 series stainless steel head & shank
- Bonded neoprene washer
- Tamper resistance fastener head with no accessible driver access
- Provided drive socket ensures positive engagement and prevents damage to painted fastener head
- Pull-out value: 1,282 lbs when installed in 1/8" substructure

## QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*

# Aluminum Panel Material and Thickness



PANEL SPAN / THICKNESS EXAMPLE TABLE

THICKNESS	WEIGHT*	SPAN BETWEEN SUPPORTS**
1/8"	1.8 lbs/sf	24-36"
3/16"	2.6 lbs/sf	30-48"
1/4"	3.5 lbs/sf	36-52"

\* Subtract pattern open % for final weight.

\*\* General guideline only, please ask Parasoleil for further design assistance.

Allowable deflection represents the maximum deflection allowed by International Building Code (IBC) L/60.

Notes: Values above are for general reference only and may not be recommended for your specific project requirements.

Values above are based on:

- Exposure B, Risk Factor IV
- Lemon Drop as baseline pattern
- PBI installation hardware

Contact Parasoleil for recommendations for high wind pressure conditions not shown above or for your specific project.

Parasoleil offers decorative laser cut aluminum panels in several standard thicknesses. We offer detailed project specific design assistance to ensure the most appropriate thickness is specified based on the amount of panel.

## PANEL THICKNESS SELECTION FACTORS

- Application type
- Panel span between supports
- Project engineering design pressure
- Documented code compliance requirements
- Fastening method

## 1/8" THICK ALUMINUM PANELS

- Generally recommended span: 24-36"
- Durable plus light weight for ease of installation
- Commonly used for:
  - Residential & commercial shade structures
  - Commercial ceilings
  - Commercial cladding with mid-panel support

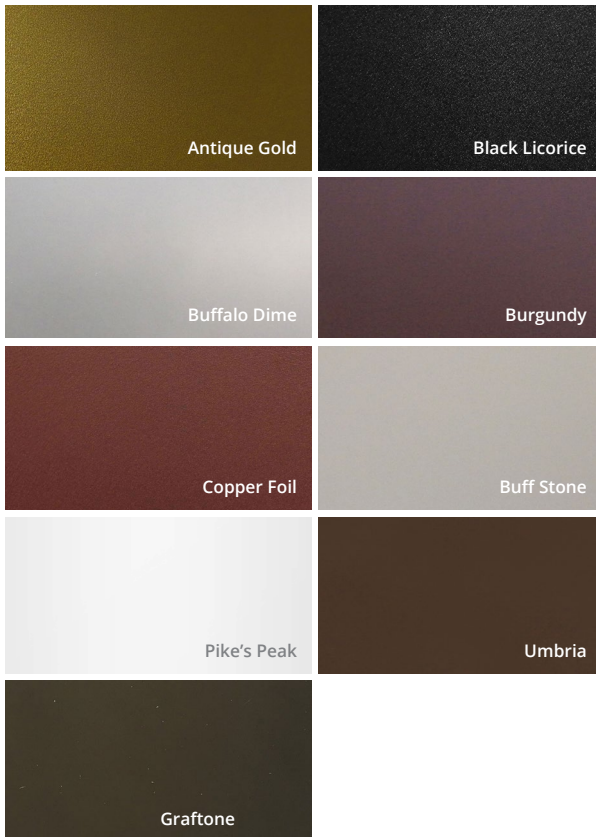
## 3/16" THICK ALUMINUM PANELS

- Generally recommended span: 30-48"
- Good span capability with visual weight for brand conscious eye-level applications and wider clear span over-head applications
- Commonly used for:
  - commercial wider span shade structures
  - Commercial wider span cladding
  - Commercial screens

## 1/4" THICK ALUMINUM PANELS

- Generally recommended span: 36-52"
- Good span capability with visual weight for brand conscious eye-level applications and wider clear span over-head applications
- Commonly used for:
  - commercial wider span shade structures
  - Commercial wider span cladding
  - Commercial screens

# Powdercoat Finishes for Aluminum



Parasoleil's award-winning proprietary powdercoat finishes for aluminum are specifically developed for their versatility, durability, and beauty to match the timeless qualities of our architectural panels.

## BENEFITS & FEATURES

- 10-year finish warranty for UV performance and adhesion to base metal
- Quality gloss and color retention
- Finished on both sides for maximum versatility
- UV stable, no VOCs, and exterior grade

## PROPRIETARY FINISHES

- **Quality Standards:** Consistent in color and texture, these finishes are versatile.
- **Patinas:** With a varied aesthetic, these finishes have unique markings, tones and qualities based on aged metals.

## WARRANTY FOR STANDARD FINISH

All standard finishes are protected by are protected by a 10-year warranty against cracking and peeling under normal conditions. Panels with sustained exposure to corrosive environments such as chlorinated or non-potable water (irrigation systems & swimming pools), saltwater, and industrial chemicals, as well as panels that have been modified in the field (cutting, bending, etc.) are not covered.

## CUSTOM FINISH

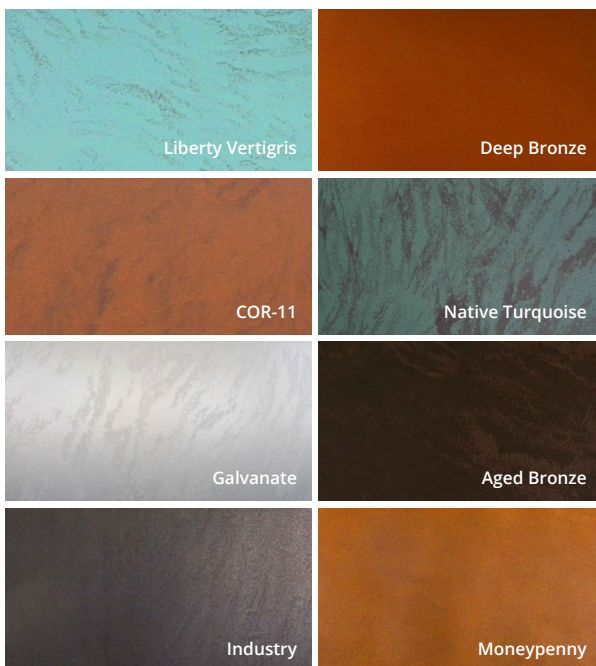
Custom panel finishes for aluminum are available for specified powders. A color matching process is not offered. All custom finishes are subject to approval by Parasoleil and are not covered by Parasoleil's standard finish warranty.

## QUESTIONS?

Contact Parasoleil for complete specifications, installation requirements, and warranty coverage.

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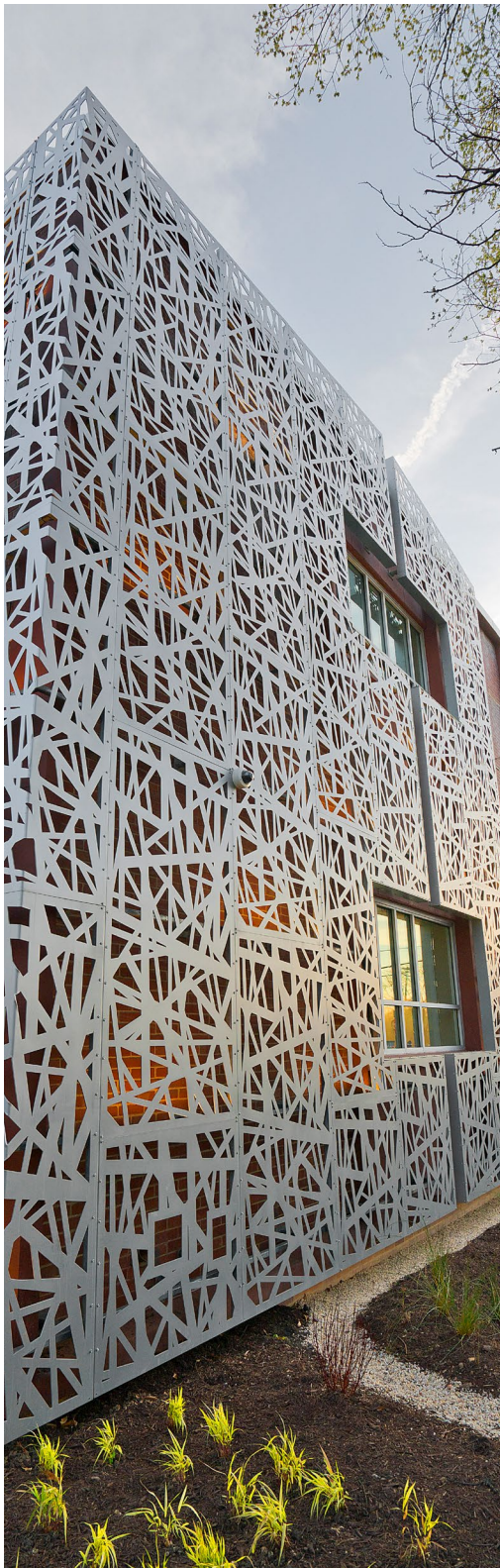
## Patina Finishes





# Engineering Education

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At Parasoleil, we focus on engineering standards and certifications for our products because we understand the importance of design load compliance. As a result, we have refined our approach to our panel performance in any thickness, pattern, and application.

## ENGINEERING AND LOAD TESTING PROCESS

- Finite Element Analysis through computer models to understand a patterned panel's deflection
- Extensive product testing
- Code analysis
- Annual inspection for certification

## WHY IT MATTERS

### Panels Attached to a Building

Pre-engineered patterns ensure IAPMO-ES 0488 certification is included in the square foot price. Project-specific engineering reports can be created to provide the most accurate analysis that lowers risk and cost for the GC. If additional documentation is required, such as a California DSA or NOA for Miami-Dade county, Parasoleil can provide applied engineering reports to satisfy documentation requirements.

### Panels at Ground Level Exterior

Parasoleil's pre-engineered systems prevent building department slow downs and provides instant design flexibility without requiring a change order.

### Panels in Interior Applications

Though decorative panels do not require wind or snow load engineering, they should look flat, be safe, and be designed to fit together for easy installation. Parasoleil's engineered systems and dependable process ensures on-time production and expert guidance.



# Engineering Education *(continued)*

## PROVIDED SERVICES

Below are the following engineering services offered by Parasoleil to ensure your project, standard or custom, is fully supported by our team.

Parasoleil Engineering Services	
Panel Thickness Calibrator	✓
Product Certification (IAMPO - ES 0488)	✓
Custom Pattern FEA	✓
Panel FEA - Engineering Report	Flat Fee
PE Stamp	Flat Fee
Structure FEA - with Design Iterations	Priced Per Project

## HOW PARASOLEIL CAN HELP YOU

Use Parasoleil’s expert engineering guidance or certified project reports depending on your project type.

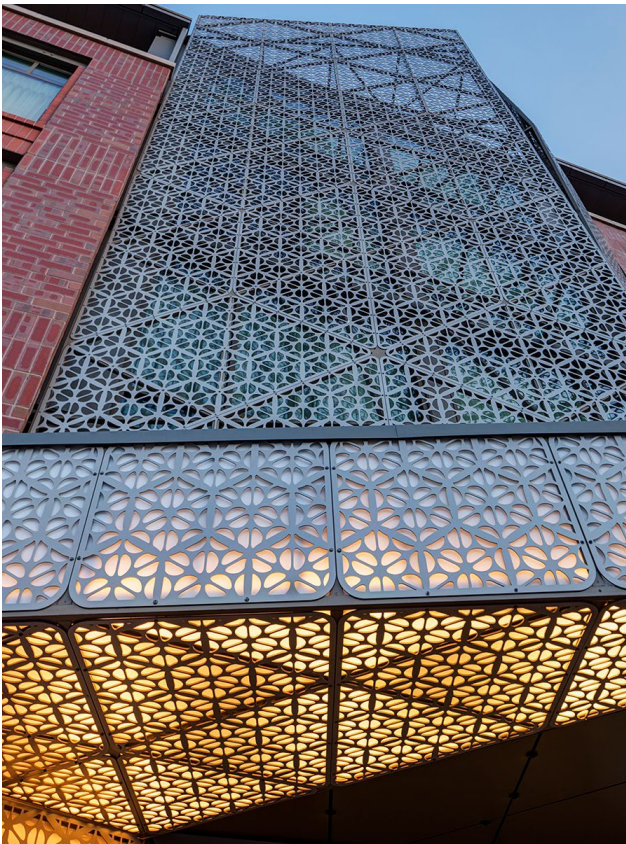
When you engage with Parasoleil from the start, you will:

- Reduce overall cost
- Raise confidence
- Ensure you cruise through permitting
- Reduce your risk as a specifier
- Set up a smooth installation

If your project requires engineering, know that our product certification exceeds International Building Code requirements.

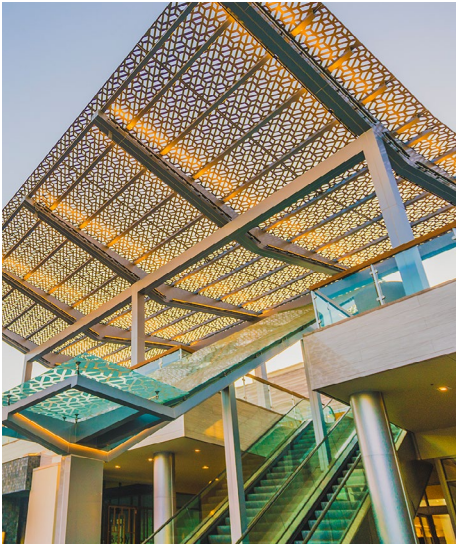
## QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*



# Custom Design Process Guide

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## How to Engage Parasoleil for a Custom Panel Application

### STEP 1: CONCEPT REVIEW

During the design phase of your project, start the conversation with the Parasoleil ALFA (Art Lab for Architecture) team to discuss your project from the following perspectives:

- Design Intent
- Manufacturing Feasibility
- Engineering Requirements
- Pattern Development
- Fastening Methods
- Budget Requirements
- Schedule Limitations
- Installation Strategy

### STEP 2: CONCEPT DEVELOPMENT

Parasoleil will provide the guidance and expertise to help you dial in your custom design as far as you need to take it for this phase of the project. This guidance includes:

- Preliminary engineering review to verify basic structural requirements
- Pattern review and sign-off for future development by customer
- Preliminary design concept drawing development to include in construction documents
- Tailored specification designed for VE defense

### STEP 3: BUDGETING PHASE

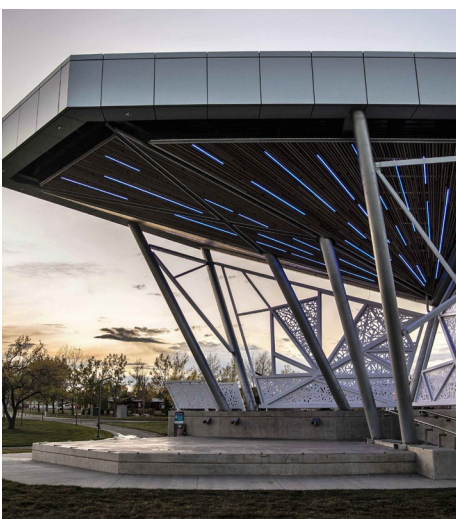
Parasoleil will provide a complete budget pricing review based on your specific project needs. This is a critical step to help ensure contractors have a heads up for this specialty product.

### STEP 4: BIDDING PHASE

Parasoleil will reach out to all bidders with formal quotes to provide complete and consistent information to everyone. This critical step ensures there are no uninformed bidders who could potentially “misrepresent” the cost of the system and find themselves in a difficult situation when they finally are required to reconcile these costs when it is time to order the system.

### QUESTIONS?

*Contact Parasoleil for complete specifications, installation requirements and warranty coverage.*



# Custom Design Process Guide *(Continued)*

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All product customizations add cost and lead time to a project. During the first step of the custom design process, it is critical to evaluate if your project can accommodate the increased cost and lead time for the desired custom features.

## Customization Categories

### Pattern

The most common customizations we see include the following;

- Evaluating a customer provided custom pattern for manufacturability
- Developing a custom pattern from scratch for your project
- Taking a brand/logo/art piece and overlaying on one of our MESH patterns
- Altering one of our standard patterns for unique cropping's, varying opening percentage, etc.

### Finish

Panels, hardware, and structure are all available in custom powdercoat finishes. Parasoleil will provide detailed guidance in what to look for when specifying a custom finish for any element on the project.

### Hardware

For non-standard fastening applications, Parasoleil can explore custom fastening solutions for your project. Examples of custom brackets include:

- Connections to round posts
- End conditions with no posts on a screen or railing system
- High wind loads requiring heavy-duty brackets
- Concealed fastening

### Substructure

Outside of Parasoleil's standard offerings, we can design custom structures, or when outside our wheelhouse, partner with capable vendors in our network, to help you get exactly what you need. Through the concept review phase, Parasoleil will guide you toward the best steps forward based on our experience and the project's needs and requirements. Examples include:

- Cantilevered overhead structures.
- Non-regular shapes (ovals, circles, polygons)
- Radiused screen structures

### Engineering

Many projects will require site specific engineering calculations, most common for exterior building cladding projects and other panel applications that are attached to a building. Parasoleil can provide a wide array of engineering needs, including PE stamped calculations, and engineering analysis submittals to confirm compliance with meeting local code requirements such as DSA, Miami-Dade, and others.

### Custom Panel Forming and Welding

Panel bends, panel rolls, panel brakes, embedded PEM studs, weldments—these types of customizations are available yet have some critical limitations to them such as:

- Minimum radius of a bend or break
- Required panel thickness and dimensions
- Pre finish processes and finishing options after customizations

Parasoleil will always ensure feasibility before moving forward.




Contact Parasoleil for complete specifications, installation requirements and warranty coverage.

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**We look forward to hearing from you.**

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