PalmSHIELD
12330 Cary Circle · La Vista, NE 68128



PalmSHIELD

LOUVERED

Architectural Screens · Swing Gates · Slide Gates

For over twenty-five years, **PalmSHIELD** has designed, engineered, and fabricated mechanical equipment screens with a focus on noise reduction, security, airflow, windloads, and appearance. Our work can be found in over thirty-five universities, resorts, Vegas casinos, Fortune 500 headquarters, and even in the middle of Yellowstone National Forest.

PalmSHIELD's fabrication team operates out of a 90,000-square-foot facility that provides complete fabrication and coating services and is led by a seasoned team of certified welders, coaters, project engineers, and drafters. Our systems are designed to overcome all challenges in delivery, installation, and sustainability. Having installed hundreds of screen wall systems and thousands of gates, we know how to problem-solve and identify the ideal system for every installation site.

PalmSHIELD's louvered screening, called **PalmSHIELD** Elite, is the industry leader: providing maximum airflow, 100% direct visual screening, and—in what's an industry exclusive—adjustable installation.



We are the only louvered screening manufacturer that provides a structural picture frame design to fully enclose each panel in your mechanical equipment screening system. This allows our louvered panels great flexibility in spanning considerable widths and heights. You can adjust your panels vertically and horizontally to accommodate changes in grade as you install them—without compromising system strength. No more wasting precious hours making adjustments because one of your posts is off a fraction of an inch.

PalmSHIELD Elite's aesthetic appeal comes from its modern finish. Our panel and column combination is sleek and robust. **PalmSHIELD's** louvers can be configured as a series of screens, grills, swing gates, and even sliding gates. Our louvers are custom-fabricated to each application, allowing end users to select column locations, varied panel heights and widths, and custom applications.

PalmSHIELD Elite may be installed as a wall louver or ground screen. **PalmSHIELD** Elite has its own independent structure that classifies it as a standalone louvered equipment screen system. This independent structure carries the load of assuring the overall system meets the latest IBC and UBC codes.

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ALUMINUM LOUVERED DIAGONAL PLANK



Diagonal fixed louver bars: 2”x1” tubular aluminum spaced 4” O.C. diagonally

Bring a bold, contemporary look to your property with **PalmSHIELD** Elite’s Diagonal Louvered Elite Infill panels. These are optimum equipment screens, designed to enclose mechanical fixtures while permitting an ample degree of visibility and terrific airflow. Engineered from premium-grade aluminum, these panels combine durability with a sleek, modern aesthetic through their precisely angled louvers.

KEY FEATURES:

- **Modern Design:** Diagonal louver pattern adds architectural interest
- **Durable Construction:** Corrosion-resistant aluminum ensures long-lasting performance
- **Custom Colors:** Powder coating technology means we can custom-color your louvered screens to match or complement building profiles.
- **Low Maintenance:** Powder-coated finish resists fading, chipping, and rust
- **Versatile Application:** Ideal for gates, fencing, privacy screens, and decorative accents

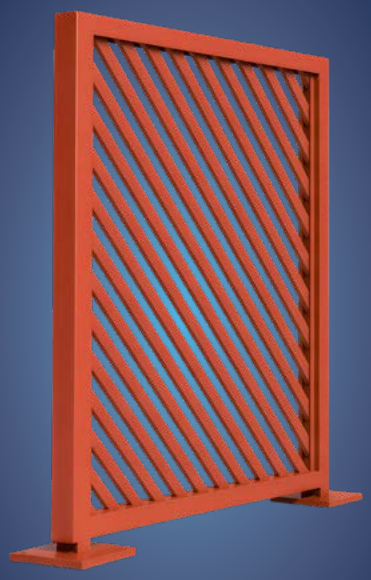
Perfect for residential, commercial, or architectural projects, the Diagonal Louvered Elite Infill Panel delivers both style and function in one high-performance package.

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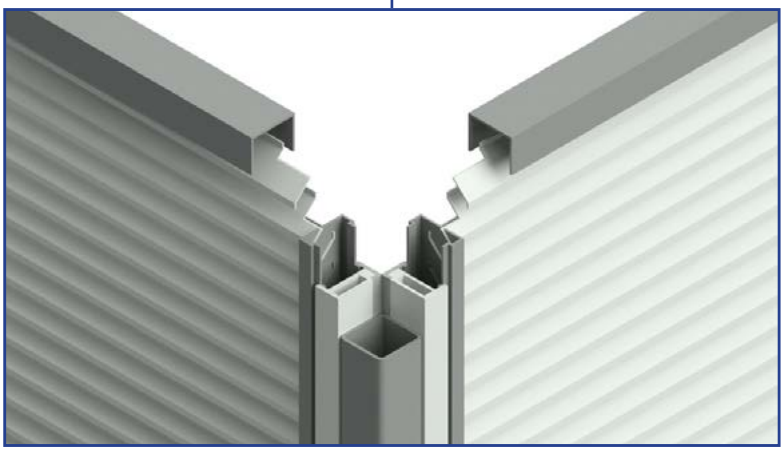
Elevations, Sections, and Assemblies



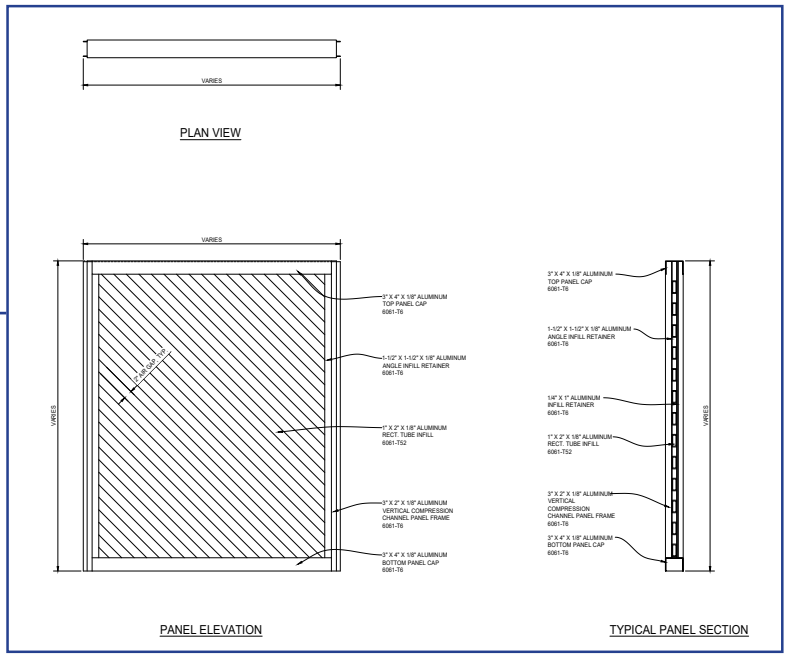


3D Panel View

3D Cutaway Section View



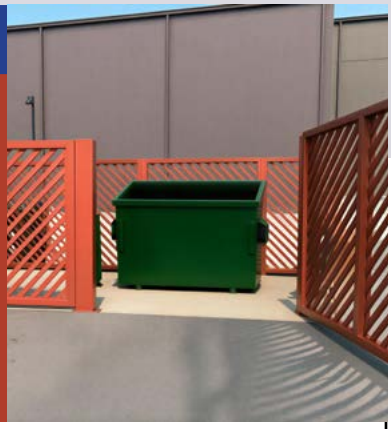
2D Panel Images



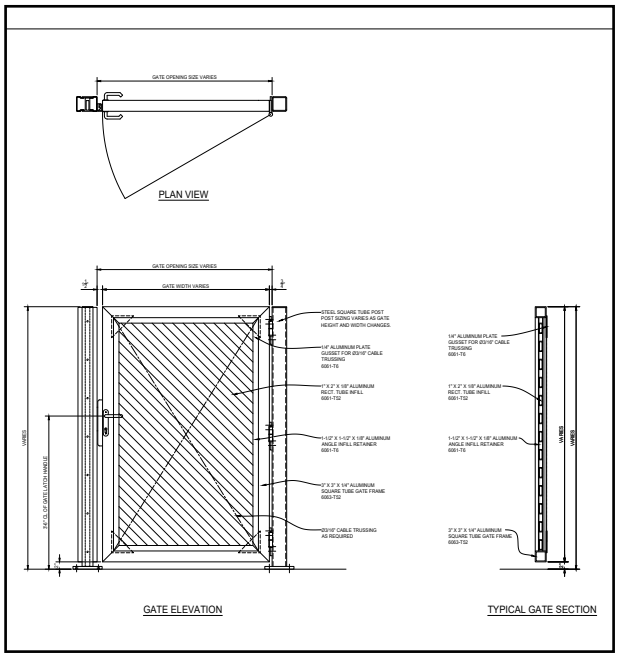
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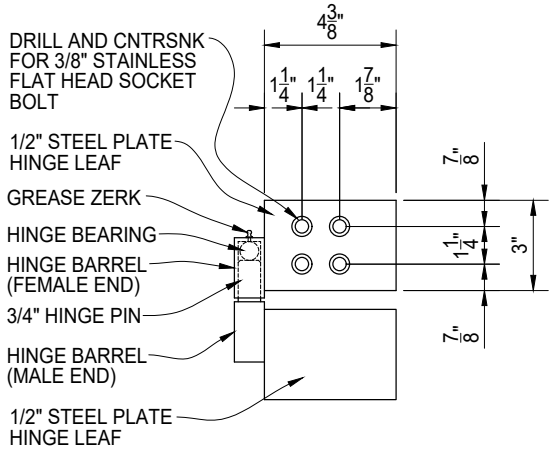
Elevations, Sections, and Assemblies



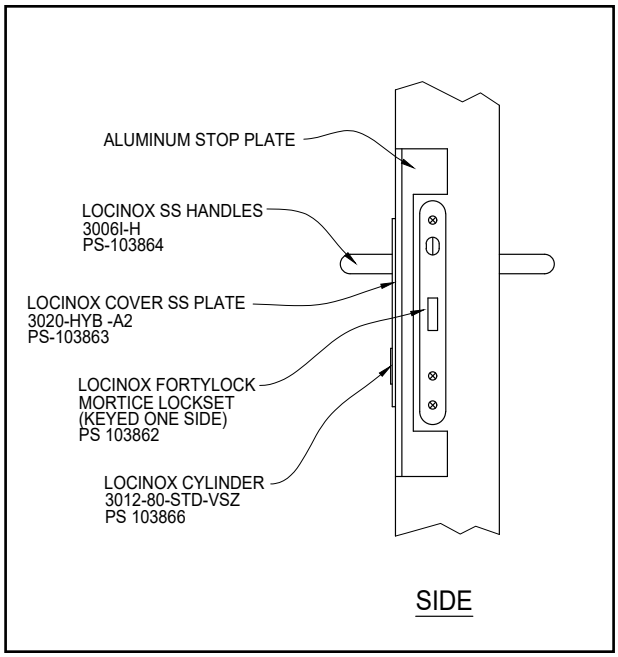
2D Gate Image



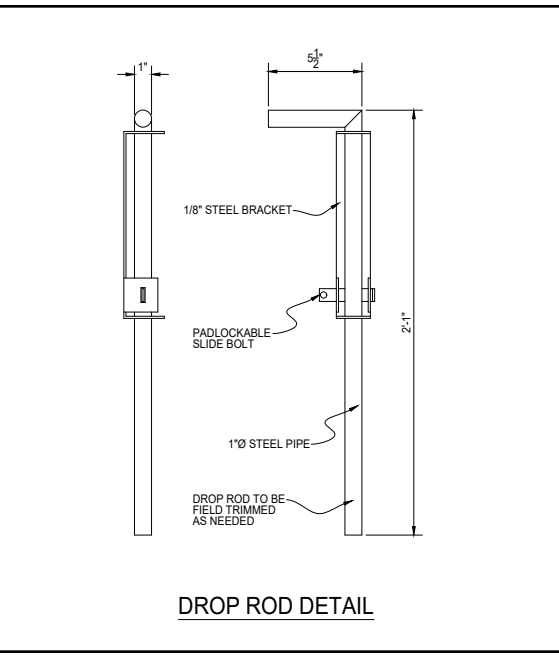
2D Hinge Image



2D Locinox



2D Drop Rod



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COLUMN DETAILS



STRENGTH & FLEXIBILITY

- Tubular T+I Beam with vertical compression profile provides exceptional durability.
- Fireproof panels resist 600+ lbs. of horizontal pull-out force and 1,400 lbs. of vertical adjustment.
- Panels mount via compression with no fasteners required.
- Design allows easy vertical and horizontal panel adjustments.

ENGINEERED I-BEAM COLUMNS

- Tubular I-Beam columns allow installers to set all columns first or install using a post-panel sequence.
- A removable flange, secured with stainless steel countersunk fasteners, lets panels slide in from the back.
- Once reattached, the flange locks panels securely in place.
- No exposed fasteners are required.

ARCHITECTURAL PRECISION

- I-Beam posts pair with tapered vertical channels to create a clean architectural seam.
- The design compensates for minor post spacing variations.
- Maintains a consistent 3" reveal around every panel.

VERSATILE FINISHES & ACOUSTIC DESIGN

- Vertical channels form a 4" cavity compatible with multiple **PalmSHIELD** materials.
- Acoustic panels use a perforated back sheet for sound absorption, moisture control, and rodent prevention.
- A structural Z-rail supports panel weight and prevents oil-canning.
- Optional Z-clips are available for larger panels.



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FRAMEWORK

Product Specifications

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. This guide section has been written to show items to be determined reflected in italic red. **PalmSHIELD** does not warrant that these specifications are complete and applicable to all applications. It is the specifier's responsibility to assure that use of **PalmSHIELD** is an appropriate fit for the site and conditions.



PART 1 – GENERAL

1.1. *DESCRIPTION*

A. This section describes the following fence system:
1. Fixed louver modular fencing panels fabricated with extruded aluminum louvers and flat aluminum bars including extruded aluminum fence posts and aluminum louver gates. Louvered security fence and gates shall be furnished and installed as shown on the plans and specified herein, overall height of vertical louver framework shall be *(state height here)* tall.

1.2. *REQUIREMENTS*

A. Furnish materials, labor, expertise and equipment necessary to complete all work specified in this section and as shown on the drawings.
B. Structural Performance: Provide product and installation capable of withstanding the effects of gravity lads and the following loads and stresses within limits and under conditions indicated.
i. Uniform pressure of 30 lbf/sq. ft. acting inward or outward.
ii. Thermal Movements resulting from a temperature change *(range)* of 120 degrees Fahrenheit ambient and 180 degrees Fahrenheit material surfaces.

1.3. *SUBMITTALS*

A. Shop drawings and manufacturer's literature: Provide specifications and construction detail drawings to substantiate quality of materials and provide details of fabrication and installation.

B. Submittals shall be in accordance with standard construction practices to include complete detailed layout of all panels, posts, gates. Submittals shall include plan layout, elevations and section views of panels, posts and gates.
C. Certificate: manufacturer's certification that materials meet specification requirements.

1.4. *REFERENCES*

A. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
B. ASTM B 221 – Standard Specification for Aluminum and Aluminum-Ally Extruded Bars, Rods, Wire, Profiles and Tubes.
C. ASTM D3363 – Standard Test Method for Film Hardness by Pencil Test.
D. ASTM D2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation.
E. ASTM B117 – Standard Practice for Operating Salt Spray Apparatus.
F. ASTM D822 – Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
G. AWS D!.2 Structural Welding Code – Aluminum.

1.5. *QUALITY ASSURANCE*

A. Installation of fence and materials shall conform to the requirements of the fence manufacturer.
B. The fence shall be warranted from any defects in materials and workmanship for a period as specified in the relevant section of the contract documents.

PART 2 – PRODUCTS

2.1. *MATERIALS*

1. Louvered security fence:
  a. Approved Louvered Fence System, Manufacturer:
    1. PalmSHIELD

2. Material Descriptions:
  a. Extruded Aluminum: ASTM B 221, Alloy 6063 – Temper T-6.
  b. Sheet Aluminum: ASTM B211, Alloy 6063 – Temper T6.
  c. Powder Coating Material Hardness: ASTM 3363 2H.

3. Louver Panel Description:
  a. Louver Panel Height: (state height here)
  b. Louver Panel Width: Not to exceed 6'.

c. Louver fencing system consisting of horizontal, fixed louver, modular fence panels fabricated with extruded aluminum framing bars and supported by extruded aluminum fence posts.
d. Planks be installed at a 20 degree angle with a ¼" overlap to create louvered pattern.
e. Fixed Louver Planks 1"x5"x1/8" extruded aluminum plank
f. Vertical Framework: **PalmSHIELD** exclusive 4" wide x 2" deep x 1/8" tapered aluminum channel compression profile. Patent pending.
g. Horizontal Top Cap: 4" x 3" x 1/8" aluminum channel.
h. Horizontal Bottom Cap: 4 inch x 3 inch x 1/8" aluminum channel.
i. Cross Bar: 1 inch x 1/8 inch aluminum flat bar.

4. *Fence Posts:*

a. Panel posts shall be **PalmSHIELD** exclusive 4 inch deep x 3" wide I-Beam Post. Patent pending. extruded tubular aluminum sections with solid aluminum caps. Length as specified on the contract drawings.
1. 5/16" double walled webbing with 5/8" wide cavity.
2. 5/16 flanges
3. Inner flange mechanically fastened to webbing with 3/8" stainless steel fastener.

5. *Outer flange and webbing form one extrusion.*
b. On center post spacing shall be as specified by manufacturer.
c. All fence posts to be plated with 10" x 10" x ¾" aluminum plates with four ¾" hole for anchors.

6. *Fittings and accessories:* All fittings and accessories shall be stainless steel and sized as specified by the fence manufacturer. Fence panels to be attached to posts with ¼" x 1" stainless steel screws. Panels and posts are predrilled to support level installation.

7. *Anchor Bolts:* Anchor bolts shall be *(state means of anchoring posts to adjoining surface)* and adequate to support loads based on screening height, exposures and loading.

8. *Gates:* Swing to exterior of enclosure, size as shown on contract drawings.
a. Louver spacing, style and appearance shall be identical to fence panels.
b. Gate hinges to be Gorilla barrel hinge with ¾" rod, ball bearing, and grease zert. Hinge plate to be ½" thick plates offset to create a 5/8" gap. Standard hardware as required by the gate manufacturer for complete functional operation. Hinges to be bolted to gate frame and field welded to steel gate posts.

c. Gate latch to be internal lock with exterior grab handles. Lock may be keyed and rekeyed. Lock is accessible from both sides of gate.

d. Welded frame, size as shown on the contract drawings, extruded aluminum tubing with aluminum fixed louver panels to match fencing material.

e. Drop rods to be 1" schedule 40 pipe and through bolted to gate frame.

f. Hardware: Size and type as determined by the manufacturer. Provide three hinges per leaf.

1. Provide 1 inch diameter center cane bolt assembly and strike, each door.

2. Provide padlockable slide bolt assembly.

g. Gate shall have welded frame fabricated from extruded aluminum tubing with aluminum fixed louver panels to match fencing material. Frame configurations shall be as indicated on the contract drawings.

h. Gate posts shall be as determined by manufacture. Gate posts to be specified to support gates.

9. **Factory Finish:** Aluminum fence panels, posts and gates shall receive polyester powder coating.

a. Polyester powder coating: Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.

b. Color shall be as selected by Owner.

c. Minimum hardness measured in accordance with ASTM D3363 2H.

d. Direct impact resistance tested in accordance with ASTM D2794. Withstand 160 inch-pounds.

e. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95° F and 95% relative humidity after 1,000 hours, less than 3/16 inches undercutting.

f. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted 45°.

PART 3 – EXECUTION

3.1 INSPECTION

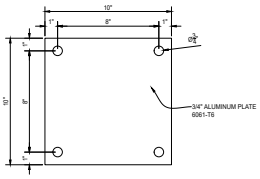
A. Verify that final grading in fence location is completed and without irregularities which will interfere with fence installation. **PalmShield** is designed to be installed on a level surface. Variations in height, slopes, stairs steeping shall be shown on contract drawings and on submittal drawings.

B. Field verify all fence dimensions and layout prior to commencing installation.

C. Do not commence work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install fence in accordance with manufacturer's installation instructions.
B. Install fence plumb and level. Posts are plated and mounted to top of surface.
C. Do not install bent, bowed or otherwise damaged panels. Remove damaged components from site and replace.
D. Secure fence panels with stainless with ¼" x 1" stainless steel screws to fence posts. All posts and panels will be predrilled to support level installation.
E. Gates
  a. Install gates and adjust hardware for smooth operation



BASE PLATE DETAIL

Fence Posts:

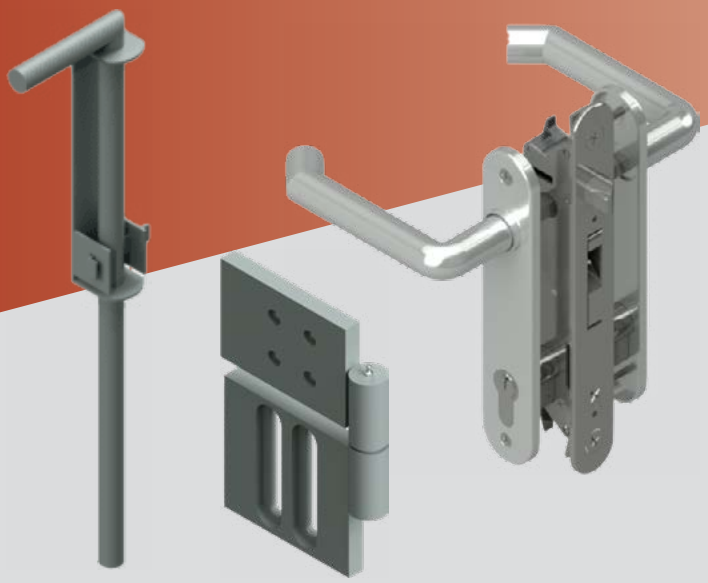
1. Panel posts shall be **PalmSHIELD** exclusive 4" deep x 3" wide I-Beam Post. Patent pending. Extruded tubular aluminum sections with solid aluminum caps. Length as specified on the contract drawings.
  a. 5/16" double walled webbing with 5/8" wide cavity
  b. 5/16" flanges
  c. Inner flange is mechanically fastened to webbing with a 3/8" stainless steel fastener.
  d. Outer flange and webbing form one extrusion.
2. On center post spacing shall be as specified by the manufacturer.
3. All fence posts to be plated with 10" x 10" x ¾" aluminum plates with four ¾" hole for anchors.

Fittings and accessories: All fittings and accessories shall be stainless steel and sized as specified by the fence manufacturer. Fence panels to be attached to posts with ¼" x 1" stainless steel screws. Panels and posts are predrilled to support level installation.

Anchor Bolts: Anchor bolts shall be adequate to support loads based on screening height, exposures, and loading.

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HARDWARE







Hardware included with your PalmSHIELD system:

1. 3/8” x 1 ¼” stainless steel cap bolt. This is for installing panels to steel posts. The steel posts are already tapped accordingly.
2. 5/6” x 1” stainless steel sheet metal screw. This is used for connecting the panels to the aluminum posts. All holes are pre-drilled.
3. Ball bearing. These are packaged separately. One ball bearing per hinge.
4. Drop rods. These are pre-installed on the gates.
5. Locking devices. These are pre-installed on the gates.
6. Hinges. Half of the hinge is pre-installed on the gate post. The other half is packaged to be field-welded unless instructed otherwise.
7. Oil. This oil is to be placed on the tip of each sheet metal screw.

Hardware not included:

1. Post anchors are not included. Based on 4000 psi concrete, you may consider 5/8” x 6” epoxy anchors or 5/8” x 5 ½” wedge anchors. **PalmSHIELD** is not responsible for determining anchor type or installations. This should be determined by qualified individual based on site conditions.
2. Padlocks for locking devices.



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COATING

PalmSHIELD Elite – Coating Standard Technical Data Process

PalmSHIELD powder coating process and standards are based on a three-step process.

1. **Prior to powder coating, PalmSHIELD removes oil, dirt, grease, oxides, and welding scale using both phosphate spray treatment and sweep blasting.** The phosphate process—degreasing, etching, de-smutting, rinsing, and phosphating—cleans the metal and improves powder adhesion, while blasting provides surface texturing, etching, and additional cleaning.
2. **Applying the powder.** The most common way of applying the powder coating to metal objects is to spray the powder using an electrostatic gun. The gun imparts a negative charge to the powder, which is then sprayed towards the grounded object by mechanical or compressed air spraying and then accelerated toward the workpiece by the powerful electrostatic charge.
3. **Curing the powder.** When a thermosetting powder is exposed to elevated temperature, it begins to melt, flows out, and then chemically reacts to form a higher molecular weight polymer in a network-like structure.

STANDARDS

PalmSHIELD meets and exceeds the following standards for applying our factory finish to aluminum fence panels, posts and gates to receive a polyester powder coating.

Polyester powder coating: Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.

Minimum hardness measured in accordance with ASTM D3363 2H.

Direct impact resistance tested in accordance with ASTM D2794. Withstand 160 inch-pounds.

Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95° F and 95% relative humidity after 1,000 hours, less than 3/16 inches undercutting.

Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted 45°.

PRODUCT

PalmSHIELD uses only premium PPG Peridium TGIC polyester powder coatings, known for excellent application performance, tight particle size control for superior transfer efficiency and edge coverage, and a smooth finish. These coatings also deliver long-term exterior durability, strong mechanical properties, and overbake resistance.

Cured Film Properties:

PCI Powder Smoothness Rating 8-9 (high gloss) Specific Gravity (ASTM D792) 1.2 to 1.8 Adhesion (ASTM D3359) 5B (100%)

Gloss (ASTM D523) 30-99

Pencil Hardness (ASTM D3363) H-4H Impact (ASTM D2794) 160 - 240+ inch lbs.

Flexibility (ASTM D522) 1/8 inch - No fracturing Humidity (ASTM D2247) 1,000+ hours

Salt Spray (ASTM B117) 1,000+ hour

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INSTALLATION
Instructions



Tools Needed.

- At least six bar clamps with a minimum of six-inch jaws
- Socket set
- Set of open-end wrenches
- 1” universal joint (knuckled socket)
- Screw gun with clutch adjustment
- Hammer drill bits for anchors. To be determined by contractor.
- 1 ½” hammer drill or core bit for drop rods (if required)
- Level
- Marking tape or paint
- String line
- Rubber mallet
- Welder (when welding hinges to steel posts is required)



Pre-installation Preparation

1. Using some form of marking chalk or tape, lay out your system in accordance with your included fabrication drawings. If you do not have these drawings, contact **PalmSHIELD** for a copy.
2. Lay out each run from outside of post to outside of post.
3. Lay out gate openings from inside of post to inside of post.
4. Lay out the entire system prior to installation. This ensures it fits your space as you intended.
5. If concerned about changing elevations, identify the highest elevation on your site where the system is to be installed. This may be your benchmark for setting your posts. All of your posts will have to be installed at this elevation. A couple of hints to make this easy.
    - **a.** Start at the highest elevation and level each panel as you go. OR
    - **b.** Run a string line along the installation. Set it flush at the point of highest elevation and then level it over the balance of the installation. OR
    - **c.** Use a site level and determine the change in elevation at each post.
    - **d.** As the elevation drops, you will have to either shim under your posts or install leveling nuts to your anchors.
6. If changing elevations is not an issue, start your **PalmSHIELD** system at a permanent structure such as a building or wall. It is to start here and work out into space where you do not have to be concerned about ending gaps.

Installation Steps

1. Verify your panels and posts compared to your fabrication drawings to ensure every panel and post was accurately fabricated. If you identify an error, please contact us as soon as possible and prior to any installation. **PalmSHIELD** will be responsible for fabrication errors but not installation costs as a result of these errors.
2. It is best to install your **PalmSHIELD** system in a post, panel, post, panel order. It is not advised to try to set all of the posts first and then come back and install the panels.
3. Using the post base plate template provided with your order,
    - **a.** use the template to align the first post to your site markings.
    - **b.** Make sure the post base plate runs parallel to the run, and it is not twisted.
    - **c.** Mark the center of the anchor holes.

4. Set your anchors.
5. Select your first post based on the drawing. Posts are labeled in accordance with the drawing. You should verify if it is a corner, end, or gate post from the fabrication drawing. This can be identified based on the holes drilled in the post for attachment of the panels and gates.
6. Set your first post. Make sure your post is plumb in all directions.
7. Select your first panel. You will need to identify it based on your fabrication drawings. These are numbered in accordance with the drawings on the bottom of the panels.
8. Align the panel to the post. Make sure the louvers are facing in the correct direction and the panel is not upside down. Some louvers are installed with restricting visibility from looking down so check your fabrication drawings for louver alignment.
9. Align the top of panel to top of post so that it is flush. Use bar clamps to attach panel to post.
10. Use wood blocking to shim under panel to hold alignment and level.
11. Place one drop of oil on the tip of each sheet metal screw prior to installing. This will provide added lubrication and assist in threading.
12. If necessary, use a universal joint, install the stainless steel machine screws or bolts through the panels and into the posts. Do not over tighten. Aluminum is a soft metal. The stainless steel sheet metal screws will self-thread into the holes. However, if you over tighten or torque, you will quickly strip the aluminum. Use a screw gun with an adjustable clutch to better assure you do not strip.
13. Once the first panel is installed to the first post, select your second post based on your fabrication drawing. Repeat steps 5 – 9.
14. At gate opening, be sure to install gate posts as shown on the drawings. Be sure your openings (inside to inside of post) are accurate.
15. Gate installations will vary based on site conditions. You should consider the swing of the gate relative to the grade that it sweeps over and make sure that there is plenty of clearance. Look for steep rising slopes, adjoining equipment pads with a higher elevation and curbing.
16. Once you have determined the elevation of your gate, weld the remaining half of the gate hinge to the post. Align the gate hinge so the back of the barrel where it meets the plate is 3/8” in front of the post. In other words, there is a 3/8”gap between the barrel and the gate post.
17. Close the gate to the appropriate location. Lower the drop rod and mark the socket location. Repeat for the open position if necessary. For drop rod sockets, we recommend a 1 ½” hammer drill or core bit. You may have to trim the drop rod.

18. The internal locking device should not require any further installation. The keys are located in the hardware package.

19. PalmSHIELD includes touch-up paint. Closely inspect your installation for any chips or scratches. Hold the can 6” to 8” from the area to be painted and sweep across it until entirely covered. The paint will blend with the powder coated surface.

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WARRANTY



PALMSHIELD warrants to the original purchaser that its Ornamental Fence Systems are free from defects in materials and workmanship for a period of one (1) year from the date of purchase. **PALMSHIELD** warrants to the original purchaser that its powder coated Fence Systems are guaranteed not to rust, peel or blister for a period of twenty (20) years from the date of purchase.

Damage from abnormal or improper use or design, accident, alteration, neglect, abuse, abrasion, air pollutants, improper service or installations or damage caused by flood, fire or act of God is not covered by this limited warranty.

This limited warranty is applicable only to the original purchaser of systems installed within the continental United States, and not to any subsequent. The value of the claim will be prorated over the period of the warranty. The maximum value of the claim will not exceed the prorated value of the product.

If you believe any portion of your **PALMSHIELD** Fence System has failed to perform as warranted, please send a short written statement of your claim, the location where the product is installed, together with a copy of your sales slip or other evidence of your purchase and date of purchase to: **PALMSHIELD**, 12330 Cary Cir. La Vista, NE 68128-5579

PALMSHIELD reserves the right to request that the fence be returned and transportation charges prepaid for the purpose of inspecting the components to determine the validity of the claim. If any portion of your **PALMSHIELD** System is found to be defective, a pro-rated credit will be issued to you under this limited warranty by **PALMSHIELD** as your sole remedy.

The amount of your pro-rated credit will be based upon the number of years of warranty coverage remaining from date of claim, and the original cost of the defective component(s). The amount of your pro-rated credit will not include labor to install the replacement, delivery charges, sales tax or any other charges, nor is **PALMSHIELD** required to provide such service.

This warranty is in lieu of all other express warranties. **PALMSHIELD** makes no other express warranties and does not authorize any other person or agent to make any other express warranties. **PALMSHIELD** neither assumes nor authorizes any other liability or obligation in connection with this product. Except to the extent prohibited by applicable law, any implied warranty, including without limitation, the implied warranties of merchantability, and fitness for particular purpose with respect to this product, is limited in duration to the twenty (20) year term of this limited warranty. In no event shall **PALMSHIELD** be liable for any consequential, special, or incidental damages arising out of or connected with the purchase or use of this product or for any breach of warranty.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

PALMSHIELD warranty not active until signed by **PALMSHIELD** representative. Photographic evidence of completed installation per standards is required. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.