**SECTION 108213**

**ROOF SCREENS**

**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. DESCRIPTION
1. This section describes the following roof screening:
2. Solid, semi-solid and louvered screen panels fabricated with extruded aluminum.
3. Stand-alone roof equipment screens and supporting framework. Screens shall be designed to attach to the roof structure and the equipment being screened.
4. Sliding roof screen panels shall be furnished and installed as shown on the plans and specified herein, overall height of the system shall be (*state height here)* tall.
5. Roof screen supports for equipment and roof attachment
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 033000 - Cast-In-Place Concrete: Execution requirements for embedded anchors and attachments for metal fabrications specified by this section in concrete.
		2. Section 042000 - Masonry Anchorage and Reinforcement: Installation of anchors.
		3. Section 051200 - Structural Steel: Metal Framing.
		4. Section 053113 - Steel Floor Deck.
		5. Section 055000 - Metal Fabrications: Frames and supports.
		6. Section 077213 - Roof Curbs.
		7. Section 099100 - Paints and Coatings: Field applied paint finish.
		8. Division 23 - Roof Top HVAC Equipment.
	1. COORDINATION
		1. Coordinate Work with other operations and installation of roofing materials to avoid damage to installed insulation and membrane materials.
	2. REQUIREMENTS
1. Furnish materials, labor, expertise and equipment necessary to complete all work specified in this section and as shown on the drawings.
2. 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.
	* 1. Uniform pressure of 30 lbf/sq. ft. acting inward or outward.
		2. Thermal Movements resulting from a temperature change (range) of 120 degrees Fahrenheit ambient and 180 degrees Fahrenheit material surfaces.
	1. PERFORMANCE REQUIREMENTS
		1. Rooftop screen designed to support 150 mph wind load.
		2. Design Loads: Comply with Building Code for site location and building height.
		3. Design to resist ASCE 7 - Minimum Design Loads for Buildings and Other Structures, using the latest published ASCE version.
		4. Design all materials, assembly and attachments to resist snow, wind, suction and uplift loading at any point without damage or permanent set.
	2. SUBMITTALS
3. Shop drawings and manufacturer's literature: Provide specifications and construction detail drawings to substantiate quality of materials and provide details of fabrication and installation.
4. 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.
5. Certificate: manufacturer's certification that materials meet specification requirements.
6. Provide manufacturer product engineering and calculations.
	1. REFERENCES
7. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
8. ASTM B 221 – Standard Specification for Aluminum and Aluminum-Ally Extruded Bars, Rods, Wire, Profiles and Tubes.
9. ASTM D3363 – Standard Test Method for Film Hardness by Pencil Test.
10. ASTM D2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation.
11. ASTM B117 – Standard Practice for Operating Salt Spray Apparatus.
12. ASTM D822 – Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
13. AWS D1.2 Structural Welding Code – Aluminum.
	1. QUALITY ASSURANCE
14. Installation of screen and materials shall conform to the requirements of the roof screen manufacturer.
15. The screen 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

* 1. MATERIALS
1. Rooftop Screen :
	1. Approved rooftop screen system, Manufacturer:
		1. PalmSHIELD
		2. Forte Rooftop Sceening
2. Materials:
	1. Extruded Aluminum: ASTM B 221, Alloy 6063 – Temper T-6.
	2. Sheet Aluminum: ASTM B211, Alloy 6063 – Temper T6.
	3. Powder Coating Material Hardness: ASTM 3363 2H.
	4. Screen Panel:
		1. Panel Height: (*state height here)* as shown on the fabrication drawings.
		2. Panel Width: Not to exceed 5’ as shown on the fabrication drawings.
		3. Rooftop screen system fabricated and framed from a custom extruded aluminum z-shaped frame. Z-shaped custom extrusion is overall 3” tall by 1 ¼” wide by 3/16” thick material.
		4. Framework corners shall be mitered, fully welded and ground smooth.
		5. Extended Flange to allow for a minimum of ½ inch overlap of infill to allow for attachment with ¼” aluminum rivets at 6” approximately on center.
		6. Infill to be (*state specified infill materials).*as shown on the fabrication drawings.
	5. Screen Horizontal Structural Profiles and Tracks.
		1. Screen panels will be supported structural by a upper and lower horizontal track system that will allow the screen panels to slide left and right horizontally to allow user full access to the equipment.
		2. Custom structural L-Shaped track extrusion shall be 4” wide by 4” tall overall. Track shall have 4 ea. 1” flanges to create two tracks spaced specifically apart to allow the panels to slide past one another.
		3. Tracks are supported by rooftop screen equipment and/or roof supports not to exceed 5’ o.c. with field bolted connections.
	6. Rooftop Screening Supports:
		1. Rooftop screening supports shall be constructed with 2” x 2” x ¼” aluminum angle.
		2. Equipment supports will have a diagonal truss system to support cantilevering screening from the equipment as shown on the fabrication drawings.
		3. Rooftop supports will have a vertical and diagonal kicker design to support the equipment from the rooftop as shown on the fabrication drawings.
		4. Both designs will be fastened to the horizontal structural tracks in the field with mechanical field applied fasteners as shown on the fabrication drawings.
		5. Roof and equipment fasteners and layout pattern to be determined. Fasteners are to be engineered and provided by others as shown on the fabrication drawings.
	7. Corner Assemblies
		1. Corner assemblies will be 3” x 3” x ¼” angle running vertically at each screen corner.
		2. Angle will be mechanically fastened to horizontal tracks during field assembly.
	8. Fittings and accessories: All fittings and accessories shall be stainless steel and sized as specified by the screen manufacturer. Fence panels to be attached to posts with ¼” x 1” stainless steel screws. Panels, tracks and supports are predrilled to support level installation.
	9. 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. 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

* 1. INSPECTION
	2. Verify that final grading in screen location is completed and without irregularities which will interfere with screen 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.
	3. Field verify all screen dimensions and layout prior to commencing installation.
	4. Do not commence work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

1. Install screen in accordance with manufacturer’s installation instructions.
2. Install screen plumb and level. Supports are plated and mounted to top of surface.
3. Do not install bent, bowed or otherwise damaged panels. Remove damaged components from site and replace.
4. Secure horizontal tracks with stainless with ¼” x 1” stainless steel screws to roof and/or equipment supports. All tracks and panels will be predrilled to support level installation.