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SECTION 09 77 00.11 (was Parkland Plastics # 09777)

COMPOSITE STRUCTURAL SANITARY PANELS

Duro-Lam, Duro-Lam Lite, Duro-Wall

******* Parkland Plastics, Inc. is the foremost manufacturer in the United States of plastic sheets with 100 percent recycled content. They produce a broad range of waterproof, sanitary wall coverings and wall and ceiling panels for a variety of interior applications.**

This guide can be used to prepare a specification for incorporating Duro-Lam, Duro-Lam-Lite, and Duro-Wall structural panels into a competitively bid construction project. These composite panels consist of mineral reinforced polyethylene sheets bonded to a backing of plywood, oriented strand board (OSB), or luaun. They are waterproof, resistant to fungi and bacteria, durable, and recyclable. Since they are structural, the panels can be installed directly to wall studs and ceiling purlins with adhesive and optional mechanical fasteners.

The specification section is organized by placing information in three standard parts:

- PART 1 - GENERAL** **Describes administrative and procedural requirements.**
- PART 2 - PRODUCTS** **Describes materials, products, and accessories to be incorporated into the construction project.**
- PART 3 - EXECUTION** **Describes how the products will be installed at the construction site.**

Throughout this product guide specification, references are made to other specification sections that might be contained in the project manual. These references are presented as examples and coordination reminders. For each project, these references will need to be revised to reflect actual sections being used.

Within the specification text, Imperial dimensions are presented first in brackets followed by System International Metric (SI) equivalents also in brackets. Depending on project requirements, either the Imperial or the SI metric equivalents will need to be deleted.

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. The guide section has been written so that most editing can be accomplished by deleting unnecessary requirements and options. Options are indicated by []. Notes to assist the specifier in selecting options and editing the specification guide are printed in bold and indicated with ***. For final editing, all brackets and notes will need to be deleted from the guide.**

PART 1 - GENERAL**1.1 SUMMARY**

******* Edit the following paragraph to reflect Project applications. *******

A. Section includes: Composite, structural, waterproof, sanitary, [wall] [and] [ceiling] panels adhesive applied to [wall studs] [roof purlins] [roof joists] suspended ceiling system [_____] of [kitchen] [food processing] [laundry] [toilet] [locker] [custodial] [animal containment] [_____] rooms including adhesive, fasteners, and moldings.

B. Related sections:

******* List other specification sections dealing with work directly related to this section such as the following. *******

1. Section 06100 - Rough Carpentry: Wood [studs] [and] [ceiling framing] to receive sanitary panels.
2. Section 05400 - Cold-Formed Metal Framing: Structural steel studs, joists, purlins, and other framing.
3. Section 09100 - Metal Support Assemblies: Light gage metal [stud framing] [roof joists] [ceiling suspension system] to receive sanitary panels.
4. Section 09780 - Sanitary Base and Rails: Extruded, mineral reinforced, polyethylene base and rails to be installed in conjunction with sanitary panels.

1.2 REFERENCES

******* List by number and full title reference standards referred to in remainder of the specification section. Delete non-applicable references. *******

A. American Society for Testing and Materials (ASTM) Publications:

1. ASTM E84 - Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

A. Provide in accordance with Section 01330 - Submittal Procedures:

1. Product data for composite structural sanitary panels and accessories showing compliance with specified requirements.
2. Shop drawings: Indicate panel layout, dimensions, moldings, and installation details.
3. Samples:

- a. Sanitary panel in selected type, finish, and color: [5 by 7 inches] [127 by 178 mm] minimum size.
 - b. [2 inches] [51 mm] minimum lengths of moldings.
4. Manufacturer's installation and maintenance instructions.

1.4 QUALITY ASSURANCE

- A. Sanitary wall panels shall comply with:
1. United States Department of Agriculture (USDA) requirements for food preparation facilities, incidental contact.
 2. Food and Drug Administration (FDA) 1999 Food Code 6-101.11.
 3. State of California Proposition 65.
 4. Canadian Food Inspection Agency (CFIA) requirements.

1.5 DELIVERY, STORING, AND HANDLING

******* Duro-Lam, Duro-Lam-Lite, and Duro-Wall panels expand and contract with temperature changes. Do not install panels in facility subjected to extreme temperature changes and avoid these conditions during delivery and storage. *******

- A. During delivery and storage keep sanitary panels flat on smooth dry surface. Avoid extreme temperature changes.
- B. Do not install sanitary panels until building is enclosed, painting is complete, and temperature and humidity are similar to conditions of completed, occupied building.
- C. Prior to installation, store materials for 24 hours minimum in area of installation to achieve temperature stability.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Parkland Plastics, Inc., P.O. Box 339, 104 Yoder Drive, Middlebury, Indiana 46540; 800-835-4110; www.parklandplastics.com.

- B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01630 - Product Substitution Procedures.

2.2 COMPOSITE STRUCTURAL SANITARY PANELS

******* Parkland Plastics, Inc, manufacturers the following composite structural sanitary panels which vary in type of backing and thickness.**

Duro-Lam: Polyethylene sheet bonded to 3/8 inch (10 mm) thick plywood or oriented strand board (OSB).

Duro-Lam Lite - Polyethylene sheet bonded to 1/8 inch (3 mm) luaun type plywood.

Duro-Wall - Polyethylene sheet bonded to 1/2 inch (13 mm) thick plywood or 5/8 inch (16 mm) thick oriented strand board (OSB).

Edit the following paragraph to reflect selected panel. *****

- A. Type: Composite, structural, waterproof, sanitary wall and ceiling panels; [Duro-Lam] [Duro-Lam Lite] [Duro-Wall] Panels as manufactured by Parkland Plastics, Inc.
- B. Construction: Composite panel with face sheet laminated to backer.

******* Duro-Lam, Duro-Lam Lite, and Duro-Wall face sheets are fabricated from recycled polyethylene and polypropylene resins. These two incompatible resins are mixed with calcium carbonate and extruded to form a chemically inert sheet. The calcium carbonate minimizes thermal linear expansion and eliminates the need for reinforcement such as glass fibers. Most other manufacturers of sanitary wall and ceiling panels use fiberglass reinforcement which results in a product which cannot be recycled and which presents problems when sheets are field cut. *******

1. Face sheet:
 - a. Material: Polyethylene and polypropylene resins mixed with calcium carbonate and extruded to form chemically inert, mineral reinforced sheet. Sheets with fiberglass reinforcement are not acceptable.
 - b. Thickness: [1/16 inch] [1.6 mm].

******* Available surfaces finishes are matte, smooth, and cracked-ice texture which is also referred to as pebbled texture. *******

- c. Finish: [Matte] [Smooth] [Cracked ice].
- d. Face sheet recycled content: 90 percent minimum.
- e. Recyclable content: 100 percent.

******* Edit the following paragraph to reflect type and thickness of backing for selected panel. Refer to list above for thicknesses. *******

2. Backing: [[[3/8] [1/2] inch] [[10] [13] mm] thick plywood.] [[[3/8] [5/8] inch] [[10] [16] mm] thick oriented strand board (OSB).] [[1/8 inch] [3 mm] thick luaun type plywood.]

******* Three sheet colors are available for composite structural sanitary panels. The almond color is special order. Duro-Wall is only available in bright white. *******

- C. Color: [Pewter white] [Bright white] [Almond] [Selected by Architect from manufacturer's full range].

******* Typical panel width is 48 inches (1219 mm) and custom widths are available. Duro-Lam panels are available in custom lengths up to 156 inches (3962 mm) with standard lengths of 96 and 120 inches (2438 and 3048 inches). Duro-Lam Lite panels are available in custom lengths up to 108 inches (2743 mm) with standard lengths of 96 and 108 inches (2438 and 2743 mm). Duro-Wall panels are available in custom lengths up to 96 inches (2743 mm) which is the standard length. Panels are easily cut in field to required sizes. *******

- D. Panel size: [[48] [_____] inches wide by [96] [108] [120] inches long.] [[1219] [_____] mm wide by [2438] [2743] [3048] mm long.]

- E. Face sheet performance characteristics:

1. Resistant to fungi and bacteria growth, cleaning agents, acids, and other chemicals.
2. No yellowing or color change with corrosive environments.

- F. Fire spread tested in accordance with ASTM E84: Class C.

2.3 ACCESSORIES

- A. Adhesive: Cartridge type, solvent based construction adhesive as recommended by sanitary wall panel manufacturer.

******* Optional nylon rivets can be used in addition to adhesive to mechanically fasten panels for extra secure installation. Include the following paragraph if rivets are used. *******

- B. Fasteners: Nylon rivets. Provide one-piece rivets for wood and metal framing and two-piece expansion rivets for concrete. Metal rivets are not acceptable.

- C. Moldings: Extruded polyvinyl chloride (PVC) channel type moldings with flanges to fit beneath wall panels.

1. Types: Shapes for panel division, inside and outside corners, and edge caps.
2. Color: Match sanitary panel color.

3. Provide moldings in maximum possible lengths.
- D. Sealant: Silicone type as specified in Section 07900 - Joint Sealers and approved by panel manufacturer for this application.

PART 3 - EXECUTION

******* Duro-Lam, Duro Lam Lite, and Duro-Wall panels are recommended for interior installation only. *******

3.1 PREPARATION

******* Panels can be installed as full height wall panels or as a wainscot. A solid polyethylene base and wall protection rail can be used in conjunction with DURO-THERM panels. Edit and include the following paragraph for this application. *******

- A. Coordinate wall panel installation with provision of [base] [wall protection rails] specified in Section 09780 - Sanitary Base and Rails.
- B. Verify that wall, roof, and ceiling framing surfaces and other substrates to receive sanitary panels are rigid, flat, clean, dry, and free from grease, dirt, coatings, and defects detrimental to installation. Ensure there are no protruding nails or screws.
- C. Verify that plumbing, mechanical, and electrical services within walls and above ceilings have been installed, tested, and approved.

3.2 INSTALLATION

- A. Install sanitary wall and ceiling panels in accordance with manufacturer's instructions and approved shop drawings at locations indicated on Drawings.

******* Duro-Lam, Duro Lam Lite, and Duro-Wall panels can be easily field cut since they do not contain fiberglass or other irritants. *******

- B. Cutting: Cut panels by sawing with fine toothed blade.
- C. Penetrations and openings: Drill round openings. For rectangular cutouts, first drill hole at each corner to relieve stress. Prior to installation, position panel in place and verify cutout location and size are accurate.
- D. Adhesive: Apply adhesive bead down each stud, joist, purlin, or other framing member to receive panels.
- E. Place panels in position and then remove to allow solvent to dissipate. Re-position panels. Ensure panels are not tightly fitted. Allow [1/4 inch] [6 mm] gap at top and bottom of vertical panel and [1/8 inch] [3 mm] gap at vertical joints between panels and adjacent construction.

******* Include the following paragraph if mechanical fasteners are used. *******

F. Fasten panels with nylon rivets. Space at 16 inches maximum on each framing member.

G. Moldings: Apply moldings in conjunction with panels.

1. Provide moldings for panel joints, perimeter edges, and corners. Neatly cut molding to required lengths. Ensure moldings are straight and correctly aligned.

******* For watertight installation, sealant should be applied in all molding channels. *******

2. Apply continuous bead of sealant in all molding channels.

H. Immediately remove excess adhesive and sealant from panels and moldings. Adhesive and sealant should not be visible in completed system.

I. Protect installed panels from subsequent construction activities.

END OF SECTION