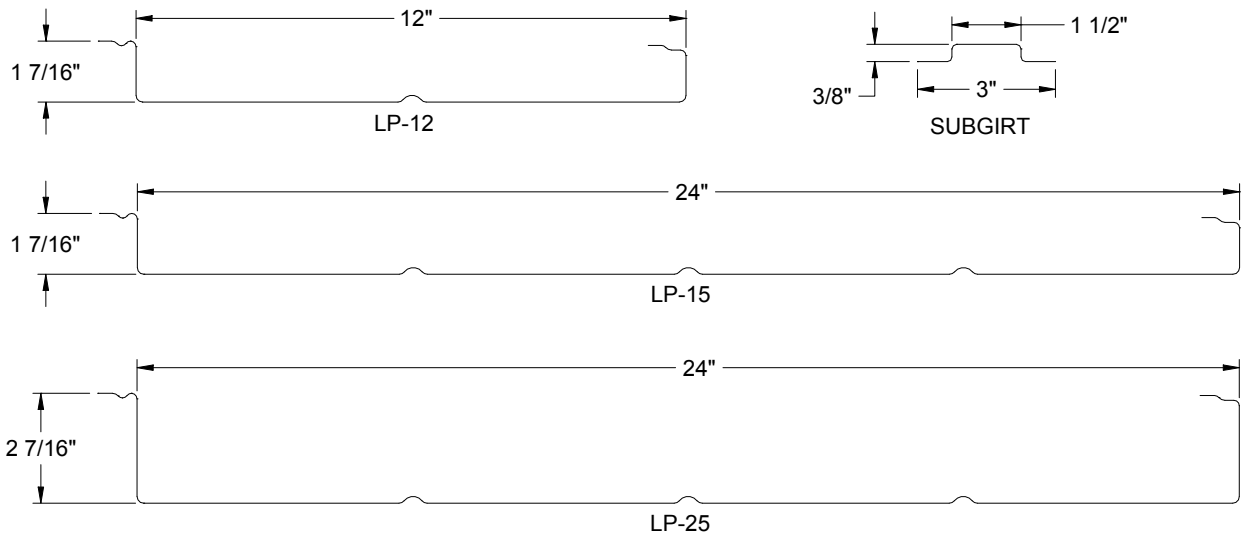


Liner Panel

INSULATED LINER SYSTEM



Effective September 2007



COMPONENT	GALVANIZED STEEL			ALUMINUM-ZINC ALLOY COATED STEEL			ALUMINUM		
	THICKNESS	WT./SQ. PLAIN	WT./SQ. PAINTED	THICKNESS	WT./SQ. PLAIN	WT./SQ. PAINTED	THICKNESS	WT./SQ. PLAIN	WT./SQ. PAINTED
LP-12	24 ga.	154.2 lb.	155.9 lb.	24 ga.	149.1 lb.	150.9 lb.	.032"	60.2 lb.	61.6 lb.
	22 ga.	187.5 lb.	189.3 lb.	22 ga.	182.6 lb.	184.4 lb.	.040"	75.3 lb.	76.6 lb.
	20 ga.	220.8 lb.	222.6 lb.	20 ga.	216.0 lb.	217.8 lb.	.050"	94.1 lb.	95.4 lb.
	18 ga.	287.5 lb.	289.3 lb.	18 ga.	282.9 lb.	284.7 lb.			
LP-15	24 ga.	134.9 lb.	136.4 lb.	24 ga.	130.5 lb.	132.0 lb.	.032"	52.7 lb.	53.9 lb.
	22 ga.	164.1 lb.	165.6 lb.	22 ga.	159.8 lb.	161.3 lb.	.040"	65.9 lb.	67.0 lb.
	20 ga.	193.2 lb.	194.8 lb.	20 ga.	189.0 lb.	190.6 lb.	.050"	82.3 lb.	83.5 lb.
	18 ga.	251.6 lb.	253.1 lb.	18 ga.	247.6 lb.	249.1 lb.			
LP-25	24 ga.	145.1 lb.	146.8 lb.	24 ga.	140.4 lb.	142.1 lb.	.032"	56.9 lb.	58.2 lb.
	22 ga.	176.5 lb.	178.2 lb.	22 ga.	171.9 lb.	173.5 lb.	.040"	71.2 lb.	72.4 lb.
	20 ga.	207.9 lb.	209.6 lb.	20 ga.	203.4 lb.	205.0 lb.	.050"	88.9 lb.	90.2 lb.
	18 ga.	270.7 lb.	272.3 lb.	18 ga.	266.4 lb.	268.0 lb.			
SUBGIRT	18 ga.	0.73 plf	----	----	----	----	----	----	
METAL SPECIFICATION	Grade 50 (50 ksi. yield strength) (18ga Grade 40-40 ksi yield strength) structural steel with G90 coating, both conforming to ASTM A 653			Grade 50 (50 ksi yield strength) (18ga Grade 40-40 ksi yield strength) structural steel with AZ55 coating (for plain) or AZ50 (if painted), both conforming to ASTM A 792			3004-H36 or equivalent (28 ksi yield strength) aluminum alloy conforming to ASTM B 209		

Oil canning is an inherent trait of light gauge metal products, particularly those with wide flat areas. Many of Fabral panels come standard with stiffening ribs, pencil beads, or shadow lines as these help minimize the appearance of oil-canning. However, due to the limitations of commercially available metals, some oil-canning should be anticipated. Oil-canning in any of Fabral's products will not be cause for rejection of material.

Jackson, GA (800) 884-4484
 Grapevine, TX (800) 477-9066
 Salem, OR (800) 477-8028
 Headquarters - Lancaster, PA (800) 477-2741

Note: For load tables using these liner panels and Fabral's exterior panels, contact the Fabral Engineering Department in Lancaster, PA.

INSULATED LINER SYSTEM SPECIFICATIONS

Part I GENERAL

1.01 WORK INCLUDED

Furnish all material, labor, and equipment to complete installation of (LP-12) (LP-15) (LP-25) liner panel system as shown on the drawings and herein specified. Include all copings and flashings contiguous with the roofing or siding.

1.02 SYSTEM DESCRIPTION

- The metal liner panel system including required trim members shall meet the specified requirements for snow loads and wind loads.
- The panels shall have a (1 7/16") (2 7/16") high ribs at (12") (24") o.c. The pan shall have (1) (3) stiffening bead(s). The overlapping rib of each panel shall have a factory-applied butyl sealant of sufficient depth to insure a sealed joint when erected.

1.03 QUALITY ASSURANCE

- Manufacturer Qualifications**
Minimum of 10 years experience in manufacturing of industrial metal roofing/siding systems.
- Installer Qualifications**
Minimum of 5 years experience in installation of metal roofing/siding of similar size and scope.
- Inspections**
 - The substrate shall be inspected before panel installation to verify that it complies with shop drawings and specified tolerances.
 - The final inspection shall be conducted to verify that the installation complies with the shop drawings.

1.04 REFERENCES

- AAMA E 605-2 Finish Standards
- ASTM 84-70 Flame Spreading Rating
- SMACNA (Sheet Metal and Air Conditioning Contractors' National Association) Architectural Sheet Metal Manual Specifications.
- 1973 ASHRAE Handbook of Fundamentals.

1.05 SUBMITTALS

- Complete shop drawings, including roof plan and/or elevations and sections of each condition, shall be submitted for approval prior to fabrication. Such drawings shall also include material type, metal thickness, finish, and manufacturer's installation procedures.
- Submit a sample and selected finish and color for architect/owner approval.

1.06 DELIVERY, STORAGE, AND HANDLING

- Store the panels properly to protect from damage on jobsite.
- Protect panels from adverse job conditions (i.e., moisture) prior to installation.
- Protect roofing/siding from other trades after installation.

1.07 WARRANTY

- Paint finish shall have the manufacturer's standard 20-year warranty.
- The installation contractor shall issue a separate two-year warranty against defects in installed materials and workmanship. Warranty shall begin from date of substantial completion and acceptance of the project.

Part II PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

Fabral -- (LP-12) (LP-15) (LP-25)
Lancaster, PA (717) 397-2741

2.02 MATERIALS

- Panels**
 - Panels shall be custom fabricated from:
 - 24, 22, or 20 Grade 50 (50 ksi yield strength), or 18 gauge Grade 40 (40 ksi yield strength) structural steel with G90 (0.90 oz./ft²) hot dipped galvanized coating, both conforming to ASTM A 653.
 - 24, 22, or 20 Grade 50 (50 ksi yield strength), or 18 gauge Grade 40 (40 ksi yield strength) structural steel with AZ55 (for plain) or AZ50 (for painted) aluminum-zinc alloy coating, both conforming to ASTM A 792.
 - 0.032", 0.040", or 0.050" 3004-H36 or equivalent (28 ksi yield strength) aluminum alloy conforming to ASTM B 209.
 - The main ribs of the (LP-12) (LP-15) (LP-25) panels shall be (12") (24") o.c. and (1 7/16") (2 7/16") high. Panel coverage shall be (12") (24"). The panels shall have an overlapping sidelap feature.
- Screws**
 - Liner panels to girts: zinc-plated (#12-14 x 1" self-drilling, self-tapping screws) (#14 x 1" A-point self-tapping screws) (#14 x 1" AB-point self-tapping screws) (#14 x 1" B-point self-tapping screws).
 - Subgirts to liner panels: zinc-plated (#12-14 x 1" self-drilling, self-tapping screws) (#14 x 1" A-point self-tapping screws) (#14 x 1" AB-point self-tapping screws) (#14 x 1" B-point self-tapping screws).
 - Wall panels to subgirts: (zinc plated) (300 series stainless steel) (#12-14 x 1" self-drilling, self-tapping screws) (#14 x 1" A-point self-tapping screws) (#14 x 1" AB-point self-tapping screws) (#14 x 1" B-point self-tapping screws).
 - Flashings and wall panel sidelaps: (zinc plated) (300 series stainless steel) (#14 HHA x 3/4" self-tapping screws) (#14 MP x 3/4"

self-drilling, self-tapping screws).

- All exposed fasteners shall have a combination metal and neoprene washer. For pre-painted exterior panels, all exposed fasteners shall be pre-painted to match the color of the wall panel to which there are installed.
- Flashings shall be fabricated from material that is the same thickness and finish as the wall panels to which they are attached. Where practicable, flashings shall be furnished in maximum 10' lengths. Exposed flashings shall be lapped 6".
- Caulking shall be a polyurethane where it is exposed. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces.
- Caulking shall be non-skinning, non-hardening gun grade butyl sealant or butyl sealant tape with a minimum thickness of 1/8" where thermal it is concealed. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces.
- Insulation shall be glass-fiber batts, (1 1/2") (2 1/2") thick x (12") (24") wide with a minimum density of 1.65 pcf. When installed, the field-assembled wall system shall provide a minimum "R" value of (7) (11).

2.03 FABRICATION

- Maximum allowable fabrication tolerances shall be as follows:
 - Panel coverage: (12") (24").
 - Main rib height: (1 7/16" ± 1/8") (2 7/16" ± 1/8").
 - Panel shearing length: ± 1/4" maximum.
- Accessories and trim components shall be factory fabricated or field formed in finish and metal thickness, same as the panels, except as otherwise noted on the drawings.

2.04 FINISHES

All panels shall receive a factory-applied coating conforming to the following:

- Metal preparation:** all metal shall have the surfaces carefully prepared for painting on a continuous process coil coating line by alkali cleaning, hot water rinsing, application of chemical conversion coating, cold water rinsing, sealing with an acid rinse, and thorough drying.
- Prime coating:** a base coat, specifically formulated to interact with the top-coat, shall be applied to the prepared surfaces by roll coating to a dry film thickness of 0.20 ± 0.05 mils. This prime coat shall be oven cured prior to application of finish coat.
- Interior finish coating:** a siliconized polyester finish coating shall be applied over the primer by roll coating to a dry film thickness of 0.80 ± 0.05 mils for a total dry film thickness of 1.00 ± 0.10 mils. This finish coating shall be oven-cured. This finish is on the panel side that is on the inside of the building.
- Exterior finish coating:** a washcoat shall be applied on the reverse side over the primer by roll coating to a dry film thickness of 0.30 ± 0.05 mils for a total dry film thickness of 0.50 ± 0.10 mils. The washcoat shall be oven-cured. This finish is on the panel side where the insulation is placed.
- Color:** the color of the liner panel finish shall be Fabral's standard white.
- Physical properties:** the coating shall conform to the manufacturer's standard performance criteria as listed by certified test reports for fade, chalk, abrasion, humidity, adhesion, pollution resistance, and others as required and standard within the industry.

Part III EXECUTION

3.01 PREPARATION

Installer shall:

- Verify that substrate layout complies with shop drawing layout.
- Report any variations and potential problems to the general contractor.
- Not start work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- The roofing/siding system shall be installed plumb, straight, and true to adjacent work.
- Neoprene profile closures shall be provided and used as needed.
- No perforations shall be made in roofing/siding by fasteners except as shown on the drawings.
- All panels shall be erected with the ribs of the panels running vertically and shall be secured to the structure with the specified fasteners.
- Subgirts shall be installed horizontally at 4'-0" maximum vertical spacing and shall be attached to the ribs of the interior wall panel with the specified fasteners. Subgirts are required over each main girt. At least one subgirt is required between each main girt.
- Insulation is to be protected from the elements. No insulation shall be installed in the liner panel that cannot be covered with exterior panels during the same work day.