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Specifications

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SECTION 1. General

1.1 SCOPE

- 1.1.1 These specifications cover the materials and the fabrication of metal buildings.
- 1.1.2 These specifications are a guide for the architect, engineer, building contractor and/or owner to understand the basis for design, manufacture and application of all the manufacturer's metal building systems and components.
- 1.1.3 Specifications in this manual are subject to change without notice.

1.2 BUILDING NOMENCLATURE

- 1.2.1 Roof slope is expressed as inches of rise for each 12" of horizontal run.
- 1.2.2 Building "Width" is measured from outside to outside of sidewall girts.
- 1.2.3 Building "Eave Height" is a nominal dimension measured from the bottom of the base plate on the column to the intersection of the inside of the roof and sidewall sheets.
- 1.2.4 Building "Length" is measured from outside to outside of endwall girts.
- 1.2.5 Bay spacing is distance between frames (except at end bays) in accordance with the length of the building.

1.3 BUILDING TYPE

- 1.3.1 Rigid Frame, (RF) is a clear span building consisting of tapered or optional straight columns and rafters.
- 1.3.2 Rigid Frame, Modular Span (MS) is a continuous frame building consisting of tapered or optional straight columns and rafters and one or more interior columns.
- 1.3.3 Tapered Beam (TB) is a clear span building consisting of tapered beams on uniform depth columns. The bottom flange of the tapered beam is horizontal or sloped.

- 1.3.4 Lean-to (LT) is a building addition with a single slope roof. It usually attaches to an existing structure's columns.
- 1.3.5 Single Slope (SS) is a continuous frame or clear span building with a single roof slope from side to side instead of ridge to side. Building consists of tapered or optional straight columns.
- 1.3.6 All building types can have either a bypass or inset girt system. You also have the choice to mix the girt conditions by sidewall or endwall.

1.4 DESIGN LOADS

- 1.4.1 Design loads shall be as specified and set forth in the contract, and shall be in accordance with Foremost Buildings, standard design practices. Design loads may include dead load, roof live loads, roof snow loads, wind loads, seismic loads, collateral loads, auxiliary equipment loads, and/or other applied or specified loads.
- 1.4.2 Dead Load- the actual weight of the building system supported by a given member.
- 1.4.3 Roof Live Load- loads produced by maintenance activities, rain, erection activities, and other movable or moving loads but not including wind, snow, seismic, crane or dead loads.
- 1.4.4 Roof Snow Loads- gravity load induced by the weight of snow or ice on the roof, assumed to act on the horizontal projection of the roof.
- 1.4.5 Wind Loads- the loads on a structure induced by the forces of wind blowing from any horizontal direction.
- 1.4.6 Collateral Loads- the weight of any non-moving equipment or material, such as ceiling, electrical or mechanical equipment, sprinkler systems, plumbing, or ceilings.
- 1.4.7 Auxiliary Loads- dynamic loads induced by cranes, conveyors or other material handling systems.
- 1.4.8 Seismic Loads- horizontal loads acting in any direction on a structural system due to action of any earthquake.
- 1.4.9 Floor Live Loads- loads induced on a floor system by occupants, furniture, equipment, etc.

1.5 DRAWING AND CERTIFICATIONS

- 1.5.1 Drawings: Foremost Buildings shall furnish complete erection drawings for the proper identification and assembly of all building components. These drawings will show anchor bolt settings, frame reactions, transverse cross-sections, sidewalls, endwalls and roof framing, flashing and sheeting, and accessory details.
- 1.5.2 Certifications: Standard drawings and design analysis shall bear the seal of a registered professional engineer

upon request. Design analysis shall be on file and furnished by Foremost Buildings upon request.

SECTION 2. Steel Design

2.1 GENERAL

- 2.1.1 Foremost Buildings shall use standards, specifications, recommendations, findings and/or interpretations of professionally recognized groups such as LGSI, AISC, AISI, ASTM, MBMA, Federal Specifications, and published research by MBMA as the basis for establishing design, drafting, fabrication, and quality criteria, practices and tolerances. For convenience, one or more sources may be referenced in a particular portion of these specifications. In all instances, however, Foremost's design, drafting, fabrication and quality criteria, practices, and tolerances shall govern, unless specifically countermanded by the contract documents.
- 2.1.2 Cold-formed steel structural members will generally be designed in accordance with latest edition of AISI's "Specification for the Design of Cold-Formed Steel Structural Members". See LGSI Design Manual.
- 2.1.3 Structural mill sections or welded up plate sections will generally be designed in accordance with AISC's Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

SECTION 3. Material Specifications

3.1 PRIMARY FRAMING STEEL

- 3.1.1 Steel for hot rolled shapes shall conform to the requirements of ASTM Specifications A-36; with minimum yield of 36, 42 or 50 psi.
- 3.1.2 Steel for built-up sections shall generally conform to the physical requirements of ASTM D570, ASTM 572 or ASTM A36 as applicable, with minimum yield of 50,000 or 55,000 psi as indicated by the design requirements.

3.2 SECONDARY FRAMING STEEL

- 3.2.1 Steel used to form purlins, girts, eave struts, and "C" sections shall be ASTM 572 or equivalent, comparable to the requirements of ASTM A607 Grade 57. Minimum yield shall be 57 ksi, per requirements of the Light Gauge Structural Institute.

3.3 ROOF AND WALL PANEL MATERIAL

- 3.3.1 Panel material as specified shall be 26 gauge Galvalume conforming to the requirements of ASTM A792 Grade E or Grade D. Minimum yield stress shall be 80,000 ksi for Grade E and 50,000 ksi for Grade D.
- 3.3.2 Panel Material as specified shall be 24 gauge Galvalume, conforming to the requirements of ASTM A792 Grade D. Minimum yield stress shall be 50,000 ksi.

SECTION 4. Structural Framing

- 4.1.1 All framing members shall be shop fabricated for field bolted assembly. The surface of the bolted connections shall be smooth and free from burrs or distortions.
- 4.1.2 All shop connections shall be in accordance with Foremost Buildings standard design practice as specified in Paragraph 2.1.1.
- 4.1.3 All framing members, where necessary, shall carry an easily identifying mark.

4.2 PRIMARY FRAMING

- 4.2.1 Rigid Frame: All rigid frames shall be welded, built-up "I" sections, or hot rolled mill shape. The columns and the rafters may be either uniform depth or tapered. Flanges shall be connected to webs by means of a continuous fillet weld on one side.
- 4.2.2 Endwall Frames: All endwall roof beams and columns shall be mill-rolled sections or built-up "I" sections depending on design requirements.
- 4.2.3 Plates, Stiffeners, etc.: All base plates, splice plates, cap plates, and stiffeners shall be factory welded into place on the structural members.
- 4.2.4 Bolt Holes, etc.: All base plates, splice plates and flanges shall be shop fabricated to include bolt connection holes. Webs shall be shop fabricated to include bracing holes.
- 4.2.5 Connections for light gauge secondary structural members (purlins and girts) shall be by means of factory welded clips.

4.3 SECONDARY FRAMING

- 4.3.1 Purlins and Girts: Purlins and girts shall be cold-formed "Z" or "C" sections with stiffened flanges. They shall be prepunched at the factory to provide for field bolting to the rigid frames. They shall be simple or continuous span as required by design. Connection bolts will install through the webs unless noted otherwise.
 - 4.3.2 Eave Struts: Eave Struts shall be unequal flange cold-formed "C" sections bent to the roof pitch.
 - 4.3.3 Base Angle: A base member will be supplied by which the base of the wall covering may be attached to the perimeter of the slab.
- ### **4.4 BRACING**
- 4.4.1 Diagonal Bracing: Diagonal bracing in the roof and walls shall be used to remove loads (wind, crane, etc.) from the structure. This bracing will be furnished to length and equipped with nuts and beveled washers at each end. It will consist of galvanized cable with suitable threaded end anchors. If load requirements so dictate, bracing may be of rod, structural angle and/or pipe, bolted in place.
 - 4.4.2 Flange Braces: The compression flange of all primary framing shall be braced laterally with angles connected to the webs of purlins or girts so that the flange compressive stress is within allowable limits for any combination of loading.
 - 4.4.3 Special Bracing: When diagonal bracing is not permitted in the sidewall, a rigid frame type portal or fixed base column will be used. Wind bracing in the roof and/or walls need not be furnished where it can be shown that the diaphragm strength of the roof and/or wall covering is adequate to resist the applied wind forces.

SECTION 5. Roof and Wall Covering

5.1 GENERAL

- 5.1.1 Roof panels for buildings shall be any of the following: "PBR", "7.2 Rib" or standing seam. "PBR" panels have an extended purlin bearing leg. For standing seam roofs see section 6.

- 5.1.2 Wall panels may be any of the following, "PBR", "PBU", "A", and 7.2 Rib profiles, Panel profile "A" is considered an architectural panel.
- 5.1.3 Panels "PBR", PBU:, "A", or 7.2 Rib shall either be 26 or 24 gauge bare or pre-coated Galvalume steel, 7.2 Rib panel shall either be 29, 26, 24 or 22 gauge bare or pre-coated Galvalume steel.
- 5.1.4 Agricultural Panel-Stormproof roof or wall panels are specified shall be 29 or 26 gauge bare Galvalume, bare galvanized or pre-painted Galvalume steel.
- 5.1.5 RetroFit Panel- "Retro R" roof or wall panels as specified shall be 29-gauge bare or pre-painted Galvalume steel.
- 5.1.6 Standing Seam Roof Panels-see Section 6
- 5.1.7 Other panel profiles, and gauges and finishes available. Please contact Foremost Buildings for more information.
- 5.2 PANEL DESCRIPTION**
- 5.2.1 "PBU" (purlin bearing leg) Panel shall have ribs 3/4" high spaced 6" on center. Each panel shall provide 36" net coverage in width. All sidelaps shall be at least one rib.
- 5.2.2 "PBR", (purlin bearing leg) "RR" Panel shall have major ribs 1 1/4" high spaced 12" on center. In the flat area between the major ribs are two smaller minor ribs. Each panel shall provide 36" net coverage in width. All sidelaps shall be at least one major rib.
- 5.2.3 Shadow-rib wall panel shall have a configuration 16" wide x 3" deep with a center rib 6" wide x 1 1/2" deep. This design produces a completely hidden fastener panel. Net coverage is 16"
- 5.2.4 Architectural ("A") Panel shall have a configuration consisting of ribs 1 1/8" deep. Major corrugations shall be spaced 12" on center., Panel design produces a decorative smooth shadow line with semi-concealed fasteners. Architectural panels shall provide a 36" net coverage in width. All sidelaps shall be at least one major rib.
- 5.2.5 Stormproof panel shall have major ribs 3/4" high spaced 9" on center. In the flat area between the major ribs are two smaller minor ribs. Each panel shall provide 36" net coverage in width. All sidelaps shall be at least one major rib.
- 5.2.6 "Retro R" (Retrofit) panels shall have major ribs 1" high at 12" centers. Each panel shall provide 36" net coverage in width. All sidelaps shall be at least one major rib. This panel is designed to go over existing "R" panel roofs. The existing roof panels do not have to be removed.
- 5.2.7 7.2 Rib panel shall have 1 1/2" high spaced 7 3/16" on center. Each panel shall provide 36" net coverage in width. All sidelaps shall be at least one rib.
- 5.2.8 Panel Length: All wall panels shall be continuous from sill to roof line and all roof panels shall be continuous from eave to ridge except where lengths become prohibitive for handling purposes. All end laps shall be at least 5" on roof and 3" on walls.
- 5.2.9 Endwall Edge Cuts: All endwall panels for buildings shall be square cut. All endwall panels for buildings with more than 1:12 roof slope shall be bevel cut by the erector in the field.

- 5.2.10 Other panel profiles, and gauges and finishes available. Please contact Foremost Buildings for more information.

SECTION 6. Standing Seam Roofing

6.1 Panel type- Ultra-Dek (Snap-Lock)

Double-Lok (Machine Seamed)

Minimum roof slope- 1/4 :12

- 6.1.1 Panel Description
 - 6.1.1.1 Standing Seam Roof Panels shall be UL-90 rated, roll-formed, 24 gauge Galvalume, whether bare or pre-painted. Galvalume sheet shall have a coating weight of .5 oz/sq. ft. with a minimum yield of 50,000 ksi and conform to ASTM-792. Pre-painted finish shall be a premium Fluoropon coating produced with either Kynar 500 or Hylar 5000 resins and have a full 20-year warranty.
 - 6.1.1.2 Panels shall be 12", 18" or 24" wide with 2 minor ribs in between seams. Panel seam is 3" high.
 - 6.1.1.3 One side of the panel shall be female in configuration, which will have factory applied hot-melt mastic (see 6.4.5) inside the female seam. The female side will snap over the male side. When using Ultra-Dek Standing Seam, this procedure will form a self-locking snap system. If choosing Double-Lok Standing Seam, the male and female seams will be continuously locked together by an electrically powered mechanical seamer, forming a 360-degree seam.
 - 6.1.1.4 The panels shall be factory notched at both ends so that field installation can commence or terminate from either end of the building. Panels cannot start at both ends of the building and work towards each other.
 - 6.1.1.5 Maximum panel length shall be no more than 50'-0".
- 6.1.2 Endlaps
 - 6.1.2.1 Endlaps shall have 16 gauge backup plate and pre-punched holes in the panel for proper placement of fasteners.
 - 6.1.2.2 Mastic (see 6.4.5) shall be applied between the panels and secured with 1/4" -#14 x 1 1/4" self drilling fasteners through the panels, and backup plate to form a compression joint.
 - 6.1.2.3 Endlaps shall be the only place in the roof system where through the roof fasteners can penetrate the building envelope.
- 6.1.3 Fasteners
 - 6.1.3.1 Eave - 1/4" -#14 x 1 1/4" self -drilling with sealing washer.
 - 6.1.3.2 Endlaps- 1/4" - #14 x 1 1/4" self-drilling with sealing washers.
 - 6.1.3.3 Ridge -#14 x 7/8" Lap-Tek self-drilling with sealing washer.
 - 6.1.3.4 Clips/to purlin- 1/4" - # 14 x 1 1/4" Tek self-drilling with 3/8" Hex Washer Head and 5/8" O.D. washer.
 - 6.1.3.5 Clips/floating to bar joists-#12-24 x 1 1/4" IMPAX-45 self-drilling with 3/8" Washer Head and 5/8" O.D. washer.
 - 6.1.3.6 "Zinc" head fasteners, where exposed, are standard when using a bare Galvalume roof panel.

- 6.1.4 Clips- All clips shall have factory-applied mastic and be designed so that movement between the panel and the clip does not occur.
 - 6.1.4.1 Utility clips-shall be 3" in height, to be used when blanket insulation is not required, U-D panel only.
 - 6.1.4.2 Low fixed clips-shall be 3 3/8" in height providing a 3/8" clearance for insulation between the panel and the purlin or joist.
 - 6.1.4.3 High fixed clips-shall be 4 3/8" in height to accommodate a thermal spacer for added insulation at the purlins.
 - 6.1.4.4 High or low floating clips-shall be either 3 3/8" or 4 3/8" in height. Floating clips shall provide a minimum of 2" travel to allow for expansion and contraction.
- 6.1.5 Sealant and Closures
 - 6.1.5.1 Factory applied sealant used in panel sidelaps shall be hot melt, foamable mastic-Q41A.
 - 6.1.5.2 Field applied sealant used at the endlaps, eave, ridge assembly, and gable flashing shall be 100% solids butyl-based elastomeric tape sealant, furnished in roll form. See manual for application.
 - 6.1.5.3 Outside closures shall be manufactured from the same material as the roof panels and are color matched.
- 6.2 Panel type- BattenLok (Machine Seamed)
SuperLok (Machine Seamed)
Minimum roof slope-1/2:12**
 - 6.2.1 Panel Description
 - 6.2.1.1 Standing Seam Roof Panels shall be UL-90 rated, roll-formed, 24 gauge Galvalume, whether bare or pre-painted. Galvalume sheet shall have a coating weight of .5 oz/sq. ft. with a minimum yield of 50,000 ksi and conform to ASTM-792. Pre-painted finish shall be a premium Fluoropon coating produced with either Kynar 500 or Hylar 5000 resins and have a full 20-year warranty.
 - 6.2.1.2 BattenLok panel profile will be 2" high x 3/4" wide x 16" or 12" wide. Panel seam is 2" high. SuperLok panel profile will be 2" high x 7/16" wide x 16" or 12" wide. Panel seam is 2" high.
 - 6.2.1.3 One side of the panel shall be female in configuration, which will have factory applied hot-melt mastic (see 6.5.5.1) inside the female seam. The female side will fit over the male side and be continuously locked together by an electrically powered mechanical seamer.
 - 6.2.1.4 Maximum panel length shall be no more than 50'-0".
 - 6.2.2 Endlaps
 - 6.2.2.1 Endlaps shall have pre-punched holes in panels and a 16 gauge backup plate for proper placement of fasteners.
 - 6.2.2.2 Mastic (see 6.5.5.2) shall be applied between the panels and secured with 1/4-14 x 1 1/4" Zinc (BattenLok) and #14 x 1" Zinc AB (SuperLok) fasteners with sealing washer, through the upper panel, mastic, lower panel and backup plate to form a compression joint.
 - 6.2.2.3 Endlaps shall be the only place in the roof system where through-the-roof exposed fasteners will be used inside the building envelope.
 - 6.2.3 Fasteners
 - 6.2.3.1 Eave- 1/4-14 x 1 1/4" (BattenLok) & #12-14 x 1 (SuperLok) Zinc self-drilling with sealing washers.
 - 6.2.3.2 End laps – 1/4 -14 x 1 1/4" (BattenLok) & 1/4"-14 x 1 AB (SuperLok) Zinc with sealing washer.
 - 6.2.3.3 Ridge- #14 x 7/8" Zinc Lap Tek self-drilling with sealing washer.
 - 6.2.3.4 Clips to purlin (BattenLok), #12 x 1" self-drilling plated with 5/16" hex head without washers. (Superlok) – 1/4 -14x1 1/4 self-drilling plated with 5/16 hex head without washer.
 - 6.2.3.5 Clips to bar joists- 12-24 x 1 1/4 IMPAX-45 self-drilling 5/16" hex head with washer.
 - 6.2.3.6 "Zinc" head fasteners, where exposed, either self-drilling or self-tapping, utilizing corrosion resistant head with an extended long life warranty, are standard. These fasteners are recommended for use when using a bare Galvalume roof panel.
 - 6.2.3.7 Special applications may require the use of other fastener types than what are listed above. Review Erection Manual and contract drawings.
 - 6.2.4 Clips
 - 6.2.4.1 All clips shall have factory-applied mastic.
 - 6.2.4.2 Utility clips-shall be 2" height, to be used when blanket insulation is not required or over a wood application.
 - 6.2.4.3 Fixed clips-shall be either 2 3/8" or 3" in height and are to be used with blanket insulation and thermal spacers.
 - 6.2.4.4 Floating clips- shall be either 2 3/8" or 3" in height and are to be used with blanket insulation and thermal spacers.
 - 6.2.5 Sealant and Closures
 - 6.2.5.1 Factory applied sealant used in panel sidelaps shall be a hot melt, foamable mastic-Q41A.
 - 6.2.5.2 Field applied sealant used the endlaps, eave, ridge assembly and gable flashing shall be 100% solids polyisobutylene tape sealer, furnished in roll form.
 - 6.2.5.3 Outside closures shall be manufactured from the same materials as the roof panels and are color matched.
- 6.3 Panel type- Lokseam(Snap-Lock)
Minimum-roof slope-3:12**
 - 6.3.1 Panel Description
 - 6.3.1.1 Basic Use: for roofing new buildings, reroofing existing buildings, mansards or fascias. Panels shall be attached to the sub-structure with concealed clips that allow for thermal movement of the panels. Panels shall have a Class 90 UL uplift rating.
 - 6.3.1.2 Standing Seam Roof Panels shall be roll-formed, 24 gauge Galvalume, whether bare or pre-painted. Galvalume sheet shall have a coating weight of .5 oz/sq. ft. with a minimum yield of 50,000 ksi and conform to ASTM-792. Pre-painted finish shall be a premium Fluoropon coating produced with either Kynar 500 or Hylar 5000 resins and have a full 20-year warranty.
 - 6.3.1.3 The panels shall be 12", 16" or 18" in width, with 1 3/4" high major ribs 12", 16", or 18" on center, respectively. The panel shall have striations between the ribs.
 - 6.3.1.4 One side of the panel shall be female in configuration, which will have factory-applied mastic inside the female seam. The female side will fit over the male side and continuously seamed (snapped) together.

- 6.3.1.5 Maximum panel length shall be no more than 40'-0".
- 6.3.2 Fasteners
 - 6.3.2.1 Fasteners for connecting clips to wood shall be #10 x 1" # 2 Phillips pancake head (2 per clip).
 - 6.3.2.2 Fasteners for connecting clips to purlin shall be #10 x 1" # 2 Phillips head self-drillers (2 per clip)
- 6.3.3 Clips
 - 6.3.3.1 The clips shall be die-formed 18 gauge galvanized steel. The clip base shall have two holes to accommodate attachment to the substrate.
- 6.3.4 Sealant and Closures
 - 6.3.4.1 Panel endlaps, ridge, gable and eave sealers shall be butyl-based pressure sensitive 7/8" x 3/16" tape mastic that is non-staining, non-corrosive, non-volatile and non-toxic. The tape shall be 100% polyisobutyleneisoprene (butyl rubber) meeting the performance requirements of Federal Specification TT-C-1796A. Service temperature shall be from -40 degrees to +180 degrees F.
 - 6.3.4.2 Panel sidelaps shall have a factory applied non-drying permanently ductile sealant based on polyisobutylene rubber which meets the requirements of Federal specification #FS-1150, and is USDA approved. Service temperature shall be from -0 degrees to +180 degrees F.
 - 6.3.4.3 All gutter joints, downspout joints, rake, eave and ridge flashing laps shall be sealed with Schnee-Morhead SM7100 or equivalent, meeting or exceeding the test requirements of TT-S-00230C, Type II, Class A.

**6.4 Panel type- Snap-On Batten (Small)
Minimum roof slope-3:12**

- 6.4.1 Panel Description
 - 6.4.1.1 Basic Use: for roofing new buildings, mansards fascias or re-roofing existing buildings, that have a solid substrate for panel attachment. Panels shall be attached to the sub-structure with concealed clips.
 - 6.4.1.2 Standing Seam Roof Panels shall be roll-formed, 24 gauge Galvalume, whether bare or pre-painted. Galvalume sheet shall have a coating weight of .5 oz/sq. ft. with a minimum yield of 50,000 ksi and conform to ASTM-792. Pre-painted finish shall be a premium Fluoropon coating produced with either Kynar 5000 or Hylar 5000 resins and have a full 20-year warranty.
 - 6.4.1.3 The panels shall have a separate 1" high x 1/4" wide snap on rib batten.
 - 6.4.1.4 The panels shall be either 12" or 16 1/2" wide.
 - 6.4.1.5 Maximum panel length shall be no more than 40'-0".
- 6.4.2 Fasteners
 - 6.4.2.1 Fasteners for connecting clips to wood shall be #10 x 1" Type A #2 Phillips pancake head (1 per clip.)
- 6.4.3 Clips
 - 6.4.3.1 The clips shall be die-formed 26 gauge galvanized steel. The clip base shall have three holes to accommodate attachment to a solid substrate.
- 6.4.4 Sealant and Closures
 - 6.4.4.1 Panel endlaps, ridge, gable, and eave sealers shall be butyl-based pressure sensitive 7/8" x 3/16" tape mastic that is non-staining, non-corrosive, non-volatile and non-toxic. The tape shall be 100% polyisobutylene-

isoprene (butyl rubber) meeting the performance requirements of Federal Specification TT-C 1796A. Service temperature shall be from -40 degrees to +180 degrees F.

- 6.4.5 Installation
 - 6.4.5.1 The panels shall be attached to the solid substrate by means of the clips which shall be located at a maximum of 2'-0' on center. The clip spacing may decrease due to high wind loading. Panels shall be joined at the sidelaps with a snap-on batten, which creates a seam standing 1" above the roof plane.
 - 6.4.5.2 The system shall be snapped together without the use of a seaming tool.

**6.5 Panel-type-Snap-on Batten (Large)
Minimum roof slope-3:12**

- 6.5.1 Panel Description
 - 6.5.1.1 Basic Use: for roofing new buildings, mansards, fascias, or reroofing existing buildings, that have a solid substrate for panel attachment. Panels shall be attached to the sub-structure with concealed clips. Panels shall have a Class 90 UL uplift rating.
 - 6.5.1.2 Standing Seam Roof Panels shall be roll-formed, 24 Gauge Galvalume, whether bare or pre-painted. Galvalume sheet shall have a coating weight of .5 oz/sq. ft. with minimum yield of 50,000 ksi and conform to ASTM-792. Pre-painted finish shall be a premium Fluoropon coating produced with either Kynar 500 or Hylar 5000 resins and have a full 20-year warranty.
 - 6.5.1.3 The panels shall have a 1 7/8" high x 1 5/8' wide broad rib batten.
 - 6.5.1.4 The panels shall be either 12" or 16 1/2" in width.
 - 6.5.1.5 Maximum panel length shall be no more than 40'-0".
- 6.5.2 Fasteners
 - 6.5.2.1 Fasteners for connecting clips to wood shall be # 10 x 1" Type A #2 Phillips pancake head (1 per clip).
- 6.5.3 Clips
 - 6.5.3.1 The clips shall be die-formed 26 gauge galvanized steel. The clip base shall have three holes to accommodate attachment to a solid substrate.
- 6.5.4 Sealant and Closures
 - 6.5.4.1 Panel endlaps, ridge, gable, and eave sealers shall be butyl-based pressure sensitive 7/8" x 3/16" tape mastic that is non-staining, non-corrosive, non-volatile and non-toxic. The tape shall be 100% polyisobutylene-isoprene (butyl rubber) meeting the performance requirements of Federal Specification TT-C 1796A. Service temperature shall be from -40 degrees to +180 degrees F.
- 6.5.5 Installation
 - 6.5.5.1 The panels shall be attached to the solid substrate by means of the clips which shall be located at maximum of 2'-0' on center. The clip spacing may decrease due to high wind loading. Panels shall be joined at the sidelaps with a snap-on batten, which creates a seam standing 1 7/8" above the roof plane.
 - 6.5.5.2 The system shall be snapped together without the use of a seaming tool.

SECTION 7. *Painting*

7.1 PRIMARY FRAMING STEEL PAINTING

- 7.1.1 All primary framing steel shall be cleaned of all foreign matter and loose scale in accordance with SSPC-2 and given a one-mil coat of red oxide or optional gray primer. Primer shall be applied by the use of airless handguns. Primer generally meets or exceeds the requirements of SSPC-Paint 15.
- 7.1.2 Abrasions caused by handling after painting are to be expected. Primer is available to touch-up or for field painting.

7.2 LIGHT GAUGE SECONDARY STEEL PAINTING

- 7.2.1 All uncoated light gauge steel shall be cleaned of all foreign matter and loose scale in accordance with SSPC-2 and given a one-mil coat of red oxide or optional gray primer. Primer shall be applied by the use of airless handguns. Primer generally meets or exceeds the performance requirements of Federal Specification TT-P-636D.
- 7.2.2 All pre-coated light gauge steel members shall be pre-coated with one coat of red oxide primer. Some hand spraying touch-up may be required.
- 7.2.3 Abrasions caused by handling after painting are to be expected. Primer is available to touch-up or for field painting.

7.3 PAINTED STEEL PANELS

- 7.3.1 Base metal shall be 29, 26, or 24 gauge shall be Galvalume steel.
- 7.3.2 Prime Coat: the base metal shall be pre-treated and then primed with an epoxy type primer for superior adhesion and superior resistance to corrosion.
- 7.3.3 Finish coat shall be either standard, premium thermoset silicone polyester (20 year warranty) or optional, premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin (20 year warranty.)

SECTION 8. *Accessories*

8.1 WINDOWS

- 8.1.1 Standard Windows shall be horizontal slide units, in either white or bronze finish. Sizes are 3030, 4030, 5030, 6030, or 4040.
- 8.1.2 Frames shall be thermal broken.
- 8.1.3 Glass shall be clear, tinted or low-e, insulating as required.
- 8.1.4 Windows shall be factory mounted to a galvanized sub-frame that matches the girt depth.
- 8.1.5 Windows shall be certified by the Architectural Aluminum Manufacturers Association for performance requirements of ANSI/AAMA 101-93 window type.

8.2 WALK DOORS

- 8.2.1 Standard doors shall be 3'-0" x 7'-0" x 1 3/4" thick and manufactured from Ga. galvanized steel.
- 8.2.2 Doors shall be factory assembled and squared.
- 8.2.3 Doors shall have a factory baked on white-smoked prime coat.
- 8.2.4 Doors shall be pre-hung and have a galvanized sub frame already assembled to door frame. Insulated
- 8.2.5 Doors shall be insulated with a polyurethane core (R14.5).

- 8.2.6 Doors shall be reinforced for all applicable hardware.
- 8.2.7 Doors shall be solid, half-glass or narrow-lite. Glass provided in either insulated, wire or tempered.
- 8.2.8 Door frames shall be 16 Ga. galvanized, pre-painted white with frame depth to match building girt depth.
- 8.2.9 Doors shall be provided with 4 1/2" x 4 1/2" ball bearing hinges with non-removable pins.
- 8.2.10 Door lockset shall be a lever lock-handle on both sides, which meets ADA requirements.
- 8.2.11 Doors shall have an aluminum threshold ADA approved.
- 8.2.12 Doors shall be packed in heavy-duty wood crate, to avoid any damage during shipment.

8.3 OVERHEAD DOOR FRAMING

- 8.3.1 Overhead door support framing shall be designed to resist applicable wind loads and shall consist of channel jambs with a header at the top of the opening. Twenty-six gauge galvalume steel flashing, color coordinated, will be provided to conceal panel edges around the opening unless otherwise specified.

8.4 GRAVITY RIDGE VENTILATORS

- 8.4.1 Gravity ridge ventilators shall be manufactured from galvanized steel painted white. The ventilator body shall be 26 gauge and the skirt shall match the roof slope. Chain operated damper will be furnished when specified. Ventilators shall be equipped with standard bird screens and riveted end caps. Ventilators shall be 10' long and have 9" throat. Twelve-inch throat ventilators are available as an option.

8.5 LOUVERS

- 8.5.1 Louver frames shall be 18 gauge galvanized steel frame, painted white with 20 gauge blades, and shall be self-framing and self-flashing. They shall be equipped with adjustable or fixed blades as specified. Nominal sizes shall be 3'-0", 2'-0", 3'-0" x 3'-0" and 3'-0" x 4'-0".

8.6 SKYLIGHTS

- 8.6.1 Translucent panels are glass fiber reinforced polyester, high strength and may be either:
 - a. Type I, structural (general purpose) conforming to commercial standard CS-214-57 or
 - b. Type II, having a burning rate of 2" per minute or less when tested in accordance with ULR3780A.
- 8.6.2 High strength translucent panels match standard profiles, are 1/16" thick, weight 8 ounces per square foot, and are white with granitized top surface.
- 8.6.3 Insulated translucent panels are available in Type I, R or "U" panel and Standing Seam panel profiles only. Please inquire.

SECTION 9. *Miscellaneous Material Specifications*

9.1 FASTENERS

- 9.1.1 Structural Bolts: All bolts used in connections of secondary framing to primary framing shall be zinc plated Grade 5 or ASTM A325 as required by design
- 9.1.2 Fasteners for Roof Panels: All panels shall be attached to the secondary framing members by means of:
 - a. Standard Self-drilling structural screws shall be carbon steel #12-14 x 1 1/2" Hex Washer Head, cadmium or zinc plated, with or without painted head,

assembled with EPDM washer. These fasteners are applicable for use with fiberglass blanket insulation from 1" to 6" thick.

b. Option # 1. Optional corrosion resistant head of zinc alloy equal to CF, Inc., "ZINC CAPPED" fasteners, in either self-tapping or self-drilling fasteners. Recommended when using bare Galvalume panels.

9.1.3 Fasteners for Roof Panel Sidelaps are as follows:

a. Standard: Self-drilling -#14 x 7/8" Lap Tek zinc plated, painted or plain head assembled with sealing washer.

b. Option # 1: Above fasteners in a Zinc Capped head finish, in self-drilling or self-tapping. Corrosion resistant head with a long life extended warranty. These fasteners are recommended when using bare Galvalume panels.

9.1.4 Fasteners for the Standing Seam Roof Panels and clips: See section 6.4 & 6.5

9.1.5 Fasteners for Wall Panels: All "PBR", "A", "RR", "U" Panels shall be attached to the secondary framing members by means of:

a. Standard: Self-drilling structural screws shall be carbon steel #12-14 x 1 1/2" Hex Washer Head, cadmium or zinc plated, with or without painted head, assembled with EPDM washer. These fasteners are applicable for use with fiberglass blanket insulation from 1" to 6" thick.

b. Option # 1: Optional corrosion resistant head of zinc alloy equal to CF, Inc., "ZINC CAPPED" fasteners, or self-drilling fasteners. Recommended when using bare Galvalume panels.

9.1.6 Fasteners for Wall Panel Sidelaps:

a. Standard: Self-drilling-#14 x 7/8" carbon steel screws as herein described.

b. Option # 1: Corrosion resistant type Zinc Capped head fasteners with sealing washers, self-drilling, as herein described.

9.1.7 Blind Rivets: All blind rivets shall be 1/8" diameter, high strength aluminum pull rivet Type ADH

9.1.8 Fasteners for Retro R Panel are as follows: Roof & wall sidelaps- self-tapping fasteners shall be #14 x 3/4" Type "A", Zinc Capped long-life corrosion resistant plain or painted head with a bonded EPDM washer. Also available is a 3/16" TLR rivet, plain or painted, with a bonded EPDM washer. Pre-drilling of panel sidelaps will be required. These will also be used at the roof eave, endlap, and ridge and an intermediate rib locations. If being used as a wall panel, the fasteners would be used at wall base, eave, endlap, and intermediate ribs. See Erection manual for locations.

9.2 SEALANTS AND CLOSURES

9.2.1 Closure Strips: the corrugations of the roof panels shall be filled, at the eave, with solid or closed-cell, performed rubber, neoprene or polyethylene closures. Wall closures under the eave trim, under the rake trim or at the base are optional.

9.2.2 Standing Seam Roof Closures: See Section 6.4.

9.2.3 Sealant: Roof panels shall be sealed with 3/32" x 1" wide tape sealant. The material shall be a Butyl base elastic compound with a minimum solid content of

99%. The sealant shall have good adhesion to metal and be non-staining, non-corrosive, non-shrinking, non-oxidizing, non-toxic and non-volatile. The service temperature shall be from -60 degrees F to +300 degrees F.

9.2.4 Standing Seam Sealant: See Sections 6.4 & 6.5

9.2.5 Caulk: All gutter and downspout joints, rake flashing laps, ridge flashing laps, doors, windows, and louvers shall be sealed white, or clear pigmented caulk of Butyl rubber base.

9.3 GUTTER, FLASHING AND DOWNSPOUTS

9.3.1 Gutters and Flashing: All standard exterior gutters are 26-gauge bare Galvalume steel or with painted finish in standard colors. Standard rake flashing is 26-gauge bare Galvalume steel or with painted finish in standard colors.

9.3.2 Downspouts: All downspouts shall be 26 gauge Galvalume steel with color coordinated finish, rectangular in shape.

9.4 FLASHING AND TRIM

9.4.1 Flashing at the rake (parallel to roof panels) and high eave shall not compromise the integrity of the roof system by constricting movement due to thermal expansion and contraction.

9.4.2 All flashing shall be manufactured from Galvalume steel whether pre-painted or bare.

SECTION 10. Erection and Installation

10.1 A qualified erector, using proper tools and equipment shall perform the erection of the metal building components. Erector shall follow good, sound, safe procedures and guidelines and in accordance with any applicable federal, state and local laws.

10.2 Erection of the roof system shall be in complete accordance with the Foremost Buildings, Inc. Erection Manual. Any deviation from this manual could result in damage to the roof system, for which Foremost will not be liable for repair or replacement.

10.3 The erection manual shall include procedures and trim design variations to accommodate the out-of square and out-of plumb conditions that sometimes occur during the erection and construction process.

NOTE:

Foremost Buildings reserves the right to change or alter specifications, products, or details to fit the proper requirements required to fulfill the contractual agreement.