

Specification Guide

Notice: Due to ongoing product improvement, all information herein is subject to change without notice.

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Section 1. General

1.1. Scope

- 1.1.1. These specifications are an outline of performance to ensure that the architect, engineer, builder, buyer and/or buyers agent understands the basis for design, manufacture, and application of all Canam Steel Building Corporation metal building systems.
- 1.1.2. Due to ongoing product improvement, all information herein is subject to change without notice.
- 1.1.3. The building shall consist of all primary and secondary structural members, connection bolts, canopies, roof extensions, sheeting, trim, flashing, doors, fasteners, gutters, downspouts, and other miscellaneous items and accessories as specified, shown, or called for in Canam Steel Building Corporations' order documents or drawings. Refer to the 2006 Edition of the Metal Building Systems Manual section entitled 'Common Industry Practices' for the standards in which this guide will be used. CSBC will not provide items not specifically called for in the CSBC order documents.

1.2. Dimensional Terminology

- 1.2.1. Width – The building 'width' shall be the distance from outside face of sidewall girt to outside face of sidewall girt (steel line to steel line).
- 1.2.2. Length – The building 'length' shall be the distance from outside face of endwall girt to outside face of endwall girt (steel line to steel line).
- 1.2.3. Eave Height – The building 'eave height' shall be the distance from finished floor to top of eave strut or eave purlin at the steel line. For buildings which are to be placed atop concrete curbs or stem walls, or where column base plates are to be recessed below finished floor, eave height shall still be measured from the finished-floor elevation.
- 1.2.4. Bay Spacing – The 'bay spacing' shall be the distance from centerline of primary frame to centerline of primary frame for interior bays. End bay spacing shall be the distance from outside face of endwall girt (steel line) to centerline of first interior primary frame.

- 1.2.5. Module Spacing – The ‘module spacing’ on multi-span buildings shall be the distance from outside face of sidewall girt (steel line) to centerline of first interior column. It is also the distance from centerline of interior column to centerline of interior column for interior spans.
- 1.2.6. Roof Slope – The ‘roof slope’ shall be based on an order-specified vertical rise for each 12" horizontal run unless otherwise stated.

1.3. Building Types

- 1.3.1. Solid web framing consists of members fabricated from shop-welded, hot-rolled steel sheets or plates and hot-rolled flat bars.
 - 1.3.1.1. Rigid Frame (RF) buildings are clearspan buildings with tapered sidewall columns. They are commonly used for clear spans from 30 feet to over 300 feet (9.14 m to 91.4 m) wide.
 - 1.3.1.2. Tapered Beam (TB) buildings are clearspan buildings with straight sidewall columns and horizontal bottom-flange rafters. TB buildings are suitable for smaller clearspan buildings from 20 feet to 60 feet (6.1 m to 18.29 m) wide.
 - 1.3.1.3. Rigid Frame with interior columns (RF-MS) buildings are multi-span buildings with interior columns. RF-MS buildings provide an economical advantage on buildings from 80 feet to over 500 feet (24.38 m to 152.4 m) wide.
 - 1.3.1.4. Single slope clearspan (SS) or multi-span (SS-MS) buildings are available in width ranges similar to RF and RF-MS as previously listed. Roof slope is in a single direction to the low sidewall.
 - 1.3.1.5. Lean-to (LT) or Lean-to with interior columns (LT-MS) buildings are similar to the SS building but with the high-side column being eliminated. The LT rafter is supported by the parent building frame, sidewall, or endwall column.

Section 2. Structural Design

2.1. Design Criteria

- 2.1.1. All structural steel sections and welded plate members shall be designed in accordance with the Manual of Steel Construction, 13th Edition, American Institute of Steel Construction, Chicago, IL; and the latest edition of the Structural Welding Code – Steel, ANSI/AWS D1.1, American Welding Society
- 2.1.2. All light gage cold-formed structural members and exterior covering shall be designed in accordance with the Cold-Formed Steel Design Manual, 2002 Edition, American Iron and Steel Institute. All standards for the welding of cold-formed members are based upon the latest edition of the Structural Welding Code – Sheet Steel, ANSI/AWS D1.3, American Welding Society.
- 2.1.3. The primary and secondary framing and covering shall be designed for all applicable loads and combinations of loads as set forth in:
 - 2.1.3.1. The specified governing building code for the order under consideration. This may be any of the standard model building codes currently published, such as: the International Code Council’s International Building Code (IBC) or the National Research Council Canada’s National Building Code (NBC). Additionally, many orders may be within states, municipalities or provinces that have their own amendments to the governing model code or that have their own independent code. In this case, loads, deflection criteria, and load combinations will be determined in accordance with this governing local code. Specification of loads and codes and design responsibility shall be as stated in Article IV, ‘Common Industry Practices’, of the 2006 Edition of the Metal Building Systems Manual from MBMA. These ‘common industry practices’ will apply regardless of the state, local, province or model code chosen.
 - 2.1.3.2. In lieu of appropriate state, local, province or model codes, Article I., ‘Load Application’ of

the 2006 Edition of the Metal Building Systems Manual from MBMA shall be used to determine loads and load combinations.

2.1.3.3. Design loads shall not be less than those specified in Article IX entitled 'Wind, Snow and Rain Data By County', of the Metal Building Systems Manual, MBMA, 2006 Edition, if there is not a controlling state or local code. If the controlling state or local code specifies values that are less than those found in Article IX, the state or local code takes precedence.

2.1.3.4. The appropriate governing code shall be specified at the time of the building quotation.

2.2. Engineering Certifications

2.2.1. All buildings shall be designed by or under the direct supervision of registered professional engineers in accordance with the information specified to Canam Steel Building Corporation in the order documentation in compliance with Article IV, Common Industry Practices', of the 2006 Edition of the MBMA Metal Building Systems Manual. The sealing engineer is not the 'Engineer of Record' for the project and cannot be construed as such.

2.2.2. Design calculations, certified by a professional engineer, may be purchased with the order, if requested.

2.2.3. A letter of certification, certified by a professional engineer, may be supplied with the building quote proposal, if requested. A letter of certification shall be provided with the order at the time the anchor rod plans are complete.

2.2.4. All permit drawings shall bear the sealed of a registered professional engineer licensed to practice in the state or province where the building is to be located. Approval drawings will not be sealed. Erection drawings will be sealed only if specifically requested by the customer.

2.3. Auxiliary Design Loads

2.3.1. Crane and impact loads shall be applied in accordance with the Manual of Steel Construction, 13th Edition, American Institute of Steel Construction, Chicago, IL, Article II, of the 2006 Edition of the MBMA Metal Building Systems Manual; and the appropriate code specified in the CSBC order documents.

2.3.2. Seismic loads, for buildings in areas subject to earthquakes, shall be derived using the procedure set forth by appropriate building codes specified in the CSBC order documents.

2.4. Load Combinations

2.4.1. Load combinations shall be per the appropriate building code. In lieu of any specified code, loads shall be combined per Article I, Section 1.3.7 of the 2006 Edition of the MBMA Metal Building Systems Manual.

Section 3. Anchorage and Foundations

3.1. Anchor Rods

3.1.1. Anchor rods and base plates shall be designed to resist all column reactions. Sizes used shall be as those shown on Manufacturers drawings. The length and embedment anchorage of all anchor rods shall be the responsibility of the foundation engineer.

3.1.2. Anchor rods shall not be supplied by Canam Steel Building Corporation and shall be the responsibility of the contractor or erector to furnish, unless specifically noted otherwise in the CSBC order documents.

3.1.3. Leveling plates shall not be supplied by Canam Steel Building Corporation unless specifically called for in the CSBC order documents.

3.2. Foundations

- 3.2.1. Foundations shall be designed by a qualified registered professional engineer to accommodate the local soil conditions and meet building reaction requirements in addition to other loads imposed by building use or occupancy. It shall be the responsibility of the Engineer of Record to verify that the loading criteria defined on the Order Documents is adequate for the location of the project in question.
- 3.2.2. Neither the foundation design nor the reinforcing steel shall be supplied by Canam Steel Building Corporation. It shall be the responsibility of the customer, contractor, or erector to obtain these items.

Section 4. Submittals

4.1. General

- 4.1.1. Canam Steel Building Corporation shall supply on all orders three sets of anchor rod drawings and reactions. Additional sets of anchor rod drawing and reactions may be purchased at additional cost.
- 4.1.2. Canam Steel Building Corporation shall supply on all orders three sets of final erection drawings. Additional sets of final erections drawings may be purchased at additional cost.
- 4.1.3. When called for in the order documents, Canam Steel Building Corporation shall supply three sets of permit drawings showing engineering design details, critical clearances, key connection details, material specifications, and lateral load resisting elements such as bracing, diaphragm, and shearwall layouts.
- 4.1.4. When called for in the order documents, Canam Steel Building Corporation shall supply three sets of approval drawings. Approval drawings shall show building layout, critical clearances, critical details, and may include permit drawing information if requested. Final fabrication will not begin until approval drawings have been returned with appropriate release signatures or appropriate instruction has been given to CSBC to release the project using a Change Order.
- 4.1.5. Canam Steel Building Corporation does not supply shop fabrication drawings for review or approval. As-built drawings are not provided by CSBC.
- 4.1.6. Unless specifically called for in the Canam Steel Building Corporation order documents, all drawings shall be issued either electronically or on 11" x 17" paper stock. Larger size drawings may be available at an additional cost.

Section 5. Structural Framing

5.1. General

- 5.1.1. The terms 'primary structural' or 'primary framing' shall refer to any built-up, hot-rolled, or cold-form columns or framing systems which transfer their loads directly to the structure's foundation.
- 5.1.2. The terms 'secondary structural' or 'secondary framing' shall refer to any cold-form, hot-rolled, or built-up purlins, girts, struts, bracing, or beams which transfer their loads from the cladding to the primary structural member or framing to which they attach.
- 5.1.3. Unless otherwise specified in the Canam Steel Building Corporation order documents, the minimum standard design thickness of structural framing members shall be as follows:
- Webs of welded built-up members 0.125" (3.175 mm)
 - Flanges of welded built-up members 0.175" (4.445 mm)
 - Cold-formed secondary framing members 0.060" (1.524 mm)
 - Cable bracing 0.250" (6.35 mm) / Rod bracing 0.625" (15.875 mm)
 - Angle bracing 0.1875" (4.762 mm)
- 5.1.4. All hot-rolled sheet, plate, and strip steel used in webs from 0.125" to 0.175" (3.175 to 4.445 mm) thick shall conform to the provisions of ASTM A-1011 SS Grade 55 (55,000 psi minimum yield strength). All thicknesses greater than 0.175" (3.175 mm) shall conform to

- ASTM A572 Grade 55 (55,000 ksi minimum yield).
- 5.1.5. All hot-rolled flat bars used in flanges shall conform to the provisions of ASTM A-572 Grade 55, with minimum yield of 55,000 psi.
 - 5.1.6. All wide-flange, channel, and 'S' shapes shall conform to the provisions of ASTM A-36, ASTM A-572 or ASTM A-992 ("W" shape only). All tube and pipe shapes shall conform to ASTM A-500, Grade B.
 - 5.1.7. All hot-rolled or cold-rolled sheet and strip steel less than 0.150" (3.81 mm) thick used in fabrication of cold-formed structural members shall be of ASTM A-1011, Grade 55 (55,000 psi minimum yield stress) or Grade 55 Mod 57 (57,000 psi minimum yield stress).
 - 5.1.8. Cable used for diagonal bracing shall conform to ASTM A-475; coating Class A, Grade-Extra High Strength 7 wire. Threaded rod shall meet ASTM A-529, Grade 50 requirements. Angle sections shall meet minimum A-36 requirements.
 - 5.1.9. Structural steel members shall be sheared, formed, punched, welded, and painted by the manufacturer. All shop connections shall be welded in conformance with standards based upon the current edition of ANSI/AWS D1.1 referenced previously in this guide in Paragraph 2.1.1. Welders and welding operators are qualified as provided in this same code.
 - 5.1.10. All field connections of primary structural members shall be bolted with high strength bolts and nuts (ASTM A325) and shall be fully tensioned unless otherwise specified. Secondary structural members shall be field bolted with ASTM A307 or A325 bolt assemblies as called for in design.
 - 5.1.11. Light gage cold-formed sections shall be manufactured by roll or brake-forming. All dimensions shall be fabricated to MBMA tolerances.
 - 5.1.12. All structural-framing members that are not galvanized shall be given one shop coat of a red primer. Gray primer may be available at an additional cost and, if available, must be called for in the Canam Steel Building Corporation order documents. All surfaces are cleaned of loose rust, loose mill scale, and other foreign matter by using, as a minimum, the hand tool cleaning method SSPC-SP21 prior to painting. All painted surfaces are to be reasonably free of excessive drips, runs, sags, and cracking. Reference MBMA2 and AISC3 for intended primer protection, proper care, erection, and function of shop prime coat.
 - 5.1.13. All framing members shall have identifying marks to aid the erector in the erection of the building.

5.2. Primary Framing Members

- 5.2.1. Rigid frame, sidewall columns, rafter beams, and canopy beams shall be shop-welded, built up 'I' shapes. Members shall be of constant depth or tapered, having base plates, necessary clips, and splice plates for completely field-bolted assembly and attachment of secondary members.
- 5.2.2. Rafter beams and endwall columns shall be either built-up 'I' shapes, 'WF' shapes, or roll-formed 'C' sections as required to satisfy load and span requirements.
- 5.2.3. Interior columns shall be round pipe sections, Built-up 'I' shapes, hot-rolled 'WF' or tube sections as required to satisfy load and order requirements.

5.3. Secondary Framing Members

- 5.3.1. Purlins and girts shall be roll-formed ZEE or CEE sections of adequate size and thickness as determined by the design criteria. Purlins and girts shall be either simple-span or continuous members.
- 5.3.2. Purlins for 'long-bay' building layouts shall typically consist of bar joists designed under Steel Joist Institute specifications for the prescribed loads. Field welding of joist bridging and seats is the standard method for connection of joists to supporting primary structural

- members.
- 5.3.3. Eave struts shall be roll-formed or brake-formed CEE sections.
 - 5.3.4. Wind bracing shall consist of diagonal cable, rod, or angle bracing. Adjustment to cable braces shall be made by an eyebolt assembly. Adjustment to rod bracing may be by threaded assembly. Angle bracing is not adjustable and may require final field welding.
 - 5.3.5. Flange bracing shall consist of angle bracing connected to the web of the purlin or girt and to the compression flange of the primary structural member. Flange braces shall be attached to bar joists via field welding.
 - 5.3.6. Base support for wall panels shall consist of a continuous base angle, base angle flash, base channel or base girt which shall be securely attached to concrete by the contractor using powder actuated drive pins, expansion anchors, or other similar anchorage.

Section 6. Roof Covering - PBR-panel

6.1. General

- 6.1.1. Minimum recommended roof slope for PBR-panel is 1/2" in 12".
- 6.1.2. Maximum recommended building width is 240 feet (73.15 m) (gable) or 120 feet (36.58 m) (single slope) for zee purlin roofs. PBR-panel shall be used in conjunction with zee or cee purlins as supports. Joists or roof beams are not acceptable support members unless specifically agreed to by the Engineering Manager.
- 6.1.3. PBR-panel in 26 gauge material qualifies for a UL 580 Class 90® uplift rating (Construction #161) when fixed to roof purlins which are spaced at 5'-0" (1.52 m) on center or less.
- 6.1.4. PBR-panel in 26 gauge material qualifies for a FM1-120 uplift rating when fixed to roof purlins which are spaced at 5'-0" (1.52 m) on center or less.

6.2. Panel Material

- 6.2.1. PBR-Panel profile shall be precision roll-formed from 26 gauge steel sheeting. 24 gauge may be available at additional cost.
- 6.2.2. Galvanized steel sheeting shall be processed in accordance with ASTM A-653. Consult your specific plant for minimum yield strength and grade of material. The galvanized coating shall be .90 oz per square foot (Class G90) in accordance with ASTM A-653. The spangle for galvanized panel is bright flat spangle in accordance with ASTM A-653.
- 6.2.3. Galvalume® steel sheeting shall be aluminum-zinc alloy coated steel sheet in accordance with ASTM A-792. Consult your specific plant for minimum yield strength and grade of material. It has a coating thickness of .55 oz per square foot.
- 6.2.4. Roof panels provided by Canam Steel Building Corporation for exterior use are precision roll-formed from pre-painted G90 galvanized or Galvalume® coils. Coils to receive finish paints are subjected to a strenuous cleaning process prior to coating. Next, the coils are primer coated and oven cured. The finish coat is then applied and monitored for proper oven-cure temperature and color uniformity. Finished material is subjected to stringent quality control tests including: physical bend and impact resistance, film thickness, hardness, gloss, and color. This process is time tested and uses the industry proven modified Siliconized Modified Polyester paint system. A 70% Kynar 500® finish is available at an additional cost upon request.

6.3. Panel Configuration

- 6.3.1. PBR-Panel panel provides a 36" (915 mm) net coverage and consists of major ribs 1 ¼" (32 mm) deep spaced at 12" (305 mm) on center with an extended purlin bearing sidelap to allow for additional sidelap support. Minor ribs reinforce the flat area between major ribs to minimize oil-canning.

6.4. Fasteners

- 6.4.1. Roof panel to secondary framing fastener shall be a #12-14 x 1 1/4" (32mm) self-drilling carbon steel screw, hex washer head with sealing washer. Fastener shall have a 20-year corrosion resistant coating. Fastener shall have a painted head to match panel and/or trim color when used with painted material.
- 6.4.2. Panel to panel, flashing to flashing, (stitch) fastener for roof shall be a #12 x 3/4" (19mm) sharp-point carbon steel screw, hex washer head with sealing washer. Fastener shall have a 20-year corrosion resistant coating. Fastener shall have a painted head to match panel and/or trim color when used with painted materials.

6.5. Trim and Flashing

- 6.5.1. Color-coated trim and flashing shall be 26 gauge. Trim shall be provided at eave, ridge, rake, and wherever necessary to ensure a properly constructed building, as defined on the Canam Steel Building Corporation order documents.
- 6.5.2. Neither counter-flashing for parapet conditions nor tie-in flashing to existing buildings shall be provided by Canam Steel Building Corporation.
- 6.5.3. All exposed trim and flashing material shall be manufactured from galvanized or Galvalume® steel strip.
- 6.5.4. Exterior gutters and gable flash shall be manufactured in 20' (6.1 m) lengths wherever possible.

6.6. Sealants

- 6.6.1. Mastic for sidelaps, endlaps, and flashing shall be an isobutylene tripolymer rubber pressure sensitive tape mastic.
- 6.6.2. Tape mastic for sidelaps shall be 3/32" (2.38 mm) thick X 1/2" (12.7 mm) wide and mastic for endlaps shall be 1/8" (3.18 mm) thick X 3/4" (19.05 mm) wide.
- 6.6.3. Tube sealants shall be of the non-hardening elastomeric type. This sealant is to be used at all trim and flashing endlaps.

6.7. Closures

- 6.7.1. Closures shall be closed cell polyethylene foam to match the panel configuration.
- 6.7.2. Closures shall be provided at the eave end for roof panels.

6.8. Installation of Panels

- 6.8.1. Storage and installation of the roofing system shall be in accordance with Canam Steel Building Corporations printed instructions.
- 6.8.2. All endlaps and sidelaps on roof panels shall be sealed with a continuous row of tape mastic to prevent air and water from infiltrating the building.
- 6.8.3. Standard maximum panel length shall be 30' (9.14 m). If required, lengths of up to 45' (13.72 m) may be provided.
- 6.8.4. Use of cutting tools that damage the panel finish shall not be allowed.
- 6.8.5. Panels shall not be marked with any graphite or lead markers.

6.9. Clean-up

- 6.9.1. Roof surface should be cleaned daily during construction of all filings, cuttings, screws, pencil markings, and debris to prevent damage due to oxidation of foreign materials.

- 6.9.2. Contractor shall thoroughly clean all panels, trim, and gutters of all foreign material upon completion of construction.

6.10. Field-Cutting of Panels

- 6.10.1. When field-cutting or mitering PBR-Panels, non-abrasive cutting tools such as nibblers or snips shall be used. Abrasive cutting tools such as mechanical grinders, saws, shears, or scissors can damage the Galvalume® or painted finish and create excess metal shavings that can corrode the panels. The use of non-approved cutting devices may void your manufacturer's warranty.

Section 7. Roof Covering - Standing Seam Roof System, Trapezoidal

7.1. General

- 7.1.1. Specifically included are panels, panel clips, flashing, panel splices, ridge material, and all necessary fasteners.
- 7.1.2. Minimum roof slope is 1/4" in 12".
- 7.1.3. Panels are rated for UL90® uplift rating UL580 when installed to roof support members spaced as listed in UL Construction Listing #552, supported by either purlins or joists which are spaced at 5'-0" (1.52 m) on center or less.
- 7.1.4. Panels have an FM1-120 uplift rating when supported by either purlins or joists which are spaced at 5'-0" (1.52 m) on center or less.

7.2. Panel Material

- 7.2.1. Trapezoidal SSR profile shall be precision roll-formed from 24 gage steel. Galvalume® steel sheeting is aluminum-zinc coated steel alloy coated steel sheet with a minimum yield strength of 50 ksi in accordance with ASTM A-792, Grade 50. It has a coating thickness of .55 oz. per square foot.
- 7.2.2. Roof panels provided by Canam Steel Building Corporation for exterior use are precision roll-formed from pre-painted Galvalume® coils. Coils to receive finish paints are subjected to a strenuous cleaning process prior to coating. Next, the coils are prime coated and oven cured. The finish coat is then applied and monitored for proper oven-cure temperature and color uniformity. Finished material is subjected to stringent quality control tests including: physical bend and impact resistance, film thickness, hardness, gloss, and color. This process is time tested and uses the industry proven modified Siliconized Modified Polyester paint system. A 70% Kynar 500® finish is available at additional cost upon request. Trapezoidal SSR roof accessories (end dams, cinch straps, gutter brackets) are provided as unpainted.
- 7.2.3. Panel shall be factory-punched and notched at ridge, high side, and lap locations.
- 7.2.4. Panel sidelaps shall have factory-applied non-skinning Butyl mastic.

7.3. Panel Configuration

- 7.3.1. Panels shall have 3" (76.2 mm) trapezoidal ribs spaced 24" (609.6 mm) on center. Minor ribs reinforce the flat area between major ribs to minimize oil-canning.

7.4. Panel Clip & Fasteners

- 7.4.1. Fixed panel clips shall only be used with panel runs of less than 120' (36.58 m). Floating panel clips shall be used up to a 250' (76.2 m) panel run and shall be self-centering and allow for up to 1 1/2" (38.1 mm) expansion and/or contraction of total movement from the centered position. The clip design shall insure that movement does not occur between the panel and clip.
- 7.4.2. The panel clips shall have factory-applied mastic to insure a weather-tight installation.

- 7.4.3. Each clip shall be attached to the joist or purlin with two fasteners. Size and type will be recommended by Canam Steel Building Corporation for the specific application. Clip fasteners for retrofit applications are not by CSBC and must be specified by the Buyer or Buyers Agent.
- 7.4.4. Panel endlap fasteners shall be a #17 x 1 1/4" (32mm) self-tapping carbon steel screw, hex washer head. Fastener shall have a 20-year corrosion resistant coating.

7.5. Trim and Flashing

- 7.5.1. Color-coated trim and flashing shall be 26 gauge. Trim shall be provided at eave, ridge, rake, and where necessary to ensure a properly constructed building.
- 7.5.2. High eave flashing and flashing parallel to the roof panels shall accommodate the thermal expansion and contraction of the roof without damage to the roof panels or flashing. Counter-flashing for parapet conditions and flash to existing buildings are not provided by Canam Steel Building Corporation.
- 7.5.3. All exposed trim and flashing material shall be manufactured from galvanized or Galvalume® steel strip.
- 7.5.4. Exterior gutters and gable flash shall typically be manufactured in 20' (6.07 m) lengths where possible.

7.6. Installation

- 7.6.1. Storage and installation of the roofing system shall be in accordance with Canam Steel Building Corporation's printed instructions.
- 7.6.2. The Trapezoidal SSR hand crimper is specially designed for use with the Trapezoidal SSR roof. Under no circumstances shall the hand crimper be used on any other manufacturer's roof system. Additionally, under no circumstances is another manufacturer's crimper to be used on the Trapezoidal SSR roof even if panels appear to be the same. Permanent damage to the seam and/or the panel finish may occur if the Trapezoidal SSR crimping tool is not used and shall void all warranties.
- 7.6.3. The panel splice shall have a 0.060" galvanized steel back-up plate and a 0.090" aluminum cinch strap.
- 7.6.4. The back-up plate and cinch strap shall be factory-punched to ensure proper fit.
- 7.6.5. Panel splice shall be sealed with tape mastic.
- 7.6.6. Standard maximum panel length shall be 55'-0" (16.76 m).
- 7.6.7. The use of cutting tools that damage the panel finish shall not be allowed.
- 7.6.8. Panels shall not be marked with any graphite or lead markers.

7.7. Clean-up

- 7.7.1. Roof surface should be cleaned daily during construction of all filings, cuttings, screws, pencil markings, and debris to prevent damage due to oxidation of foreign materials.
- 7.7.2. Contractor shall thoroughly clean all panels, trim, and gutters of all foreign material upon completion of construction.

7.8. Maintenance

- 7.8.1. The owner shall keep the roof free and clean of debris and corrosive materials at all times.
- 7.8.2. Gutters and downspouts shall be cleaned periodically and kept free-flowing at all times.

- 7.8.3. Flashing and sheeting interfaces shall be inspected yearly to ensure proper connection and water-tightness.
- 7.8.4. Endlaps, eaves, ridges, curbs, translucent panels, and other interfaces shall be inspected and maintained yearly. Normal adjustments or tightening of fasteners may be required.
- 7.8.5. The use of tar and other topical applied products shall not be permitted unless specified by the manufacturer.
- 7.8.6. Copper, lead flashing, exposed iron, or debris shall not be permitted on the roof.
- 7.8.7. Pipes to and supports for roof-supported units shall be of a non-corrosive or rust-free material. Field painting of pipes and supports may be required to resist corrosion. Condensation from roof-top units shall be piped to interior or exterior locations. Damage due to condensate water is not covered under manufacturer's warranty.

7.9. Erection Sequence

- 7.9.1. The Trapezoidal SSR roof system is designed to be erected starting from either end of the building. In some cases, due to the building layout, it may be required to start erection from a specified end. In such cases, it will be noted as such on the erection drawings.
- 7.9.2. Sequencing of steel shall be clearly marked on the order documents at the time of order entry.

7.10. Coordination with Other Trades

- 7.10.1 Supports for the Trapezoidal SSR roof system shall be provided and are required as shown in the drawings and as noted in these specifications. All necessary clearance dimensions for proper elevations relative to the roof panels have been shown. The customer shall be responsible for coordinating these dimensional requirements with other trades associated with the building roof system.

7.11. Erection Care

- 7.11.1. The erector must be skilled in the erection of metal building systems and is responsible for complying with all applicable local, federal, and state construction and safety regulations including OSHA regulations as well as any applicable requirements of local, national, or international union rules or practices. The Erector remains solely responsible for the safety and appropriateness of all techniques and methods utilized by its crews in the erection of the metal building system and/or the Trapezoidal SSR roof system. The Erector is also responsible for supplying any safety devices such as scaffolds, runways, nets, etc., which may be required by the governing codes to safely erect the metal building system and/or Trapezoidal SSR roof system.
- 7.11.2. Anchorage for safety devices may be added at an additional cost provided specific connections are designed and clearly noted in Canam Steel Building Corporation order documents. All anchorage points must be noted with exact location, magnitude, and direction of force for a fully-braced structure.
- 7.11.3. The erector of the Trapezoidal SSR roof system shall exercise great care and attention to the details as shown on the erection drawings and in the erection manual to insure a secure and proper fit of all components. Canam Steel Building Corporation shall not be responsible for supervising and/or coordinating the erection of the Trapezoidal SSR roof system with other trades. Erection drawings shall govern when a situation differs from that shown in the erection manual.
- 7.11.4. Due consideration must be given by the erector to the effects of thermal expansion and contraction when erecting a roof tie-in to an existing structure to insure a safe, secure, weather-tight condition. Flashing for tie-ins to existing buildings is typically not included as part of the material provided by Canam Steel Building Corporation. Refer to the sections and details for specific materials provided by CSBC.

- 7.11.5. The erector acknowledges that all details for all conditions can be noted on the plans and that due care and judgment are required to make a safe and watertight condition. Sealants and caulks may be required based upon actual conditions encountered.

7.12. Field Cutting of Panels

- 7.12.1. When field-cutting or mitering Trapezoidal SSR roof panels, non-abrasive cutting tools such as nibblers or tin-snips shall be used. Abrasive cutting tools such as mechanical grinders, saws, shears, or scissors can damage the Galvalume® or painted finish and create excess metal shavings that can corrode the panels. The use of non-approved cutting devices may void your manufacturer's warranty.

Section 8. Wall Covering

8.1. General

- 8.1.1. Wall covering shall be PBR-panel, Reverse Roll PBR-Panel, or PBA-Panel, precision roll-formed from 26 gauge steel.
- 8.1.2. ASTM E283 is an Air infiltration specification.
- 8.1.3. ASTM E331 is a Water penetration specification.
- 8.1.4. All Canam Steel Building Corporation wall panels can meet ASTM E283 & E331 specifications with the requirements listed below.
- Wall panel material must be 80 KSI
 - Add ½" x 3/32" tape mastic to ALL sidelap seams.
 - Sidelap fastener spacing is 24" O.C. Maximum
 - Minimum panel gauge: 26 (24 gauge may be available at additional cost)

8.2. Panel Material

- 8.2.1. Galvanized steel sheeting shall be processed in accordance with ASTM A-653. Consult your specific plant for minimum yield strength and grade of material. The galvanized coating shall be .90 oz per square foot (Class G90) in accordance with ASTM A-653. The spangle for galvanized panel is bright flat spangle in accordance with ASTM A-653.
- 8.2.2. Galvalume® steel sheeting shall be aluminum-zinc alloy coated steel sheet in accordance with ASTM A-792. Consult your specific plant for minimum yield strength and grade of material. It has a coating thickness of .55 oz per square foot.
- 8.2.3. Wall panels provided by Canam Steel Building Corporation for exterior use are precision roll-formed from pre-painted G90 galvanized or Galvalume® coils. Coils to receive finish paints are subjected to a strenuous cleaning process prior to coating. Next, the coils are prime coated and oven cured. The finish coat is then applied and monitored for proper oven-cure temperature and color uniformity. Finished material is subjected to stringent quality control tests including: physical bend and impact resistance, film thickness, hardness, gloss, and color. This process is time tested and uses the industry proven Siliconized Modified Polyester paint system. A 70% Kynar 500® finish is available at an additional cost upon request.

8.3. Panel Configuration

- 8.3.1. Canam Steel Building Corporation PBR-panel provides a 36" (915 mm) net coverage and consists of major ribs 1 1/4" (32 mm) high spaced at 12" (305 mm) on center with an extended purlin bearing sidelap to allow for additional sidelap support. Minor ribs reinforce the flat area between major ribs to minimize oil-canning.
- 8.3.2. Canam Steel Building Corporation reverse roll PBR-panel in a recessed fastener panel which provides a 36" (915 mm) net coverage and consists of major ribs 1-1/4" (32 mm) deep spaced at 12" (305 mm) on center with an extended purlin bearing sidelap to allow for additional sidelap support. Minor ribs reinforce the flat area between major ribs to minimize oil-canning..
- 8.3.3. Canam Steel Building Corporation PBA-panel is an architectural recessed fastener panel

which provides a 36" net coverage and consists of 1-1/4" (32 mm) deep major ribs spaced at 12" (305 mm) on center with an extended purlin bearing sidelap to allow for additional sidelap support. A shallow v-valley occurs between the major ribs.

8.4. Trim and Flashing

- 8.4.1. Color-coated trim and flashing shall be supplied in 26 gauge. Trim shall be provided at eave, base, corners, framed openings, and where necessary to insure a properly constructed building.
- 8.4.2. All exposed trim and flashing material shall be manufactured from Galvalume®, galvanized, or painted steel strip.

8.5. Fasteners

- 8.5.1. Panel to secondary framing fasteners for all wall panels shall be a #12 x 1 1/4" (32 mm) long self-drilling carbon steel screw, hex head. Fastener shall have a painted head to match panel and/or trim color.
- 8.5.2. Panel to panel, stitch fastener for all wall panels shall be a #12 x 3/4" (19 mm) long sharp point carbon steel screw, hex head. Fastener shall have a painted head to match panel and/or trim color.
- 8.5.3. Fasteners required for securing trim to masonry or concrete are not supplied by Canam Steel Building Corporation.

8.6. Sealants

- 8.6.1. Tube sealants shall be used at all trim endlaps, and shall be a polyurethane sealant.
- 8.6.2. Sealants not provided by Canam Steel Building Corporation shall not be used without specific approval from CSBC.

8.7. Closures

- 8.7.1. Closures shall be manufactured of closed-cell polyethylene foam to match the panel configuration.
- 8.7.2. Closures shall be supplied as required to provide a closed wall panel profile at the rake condition.

8.8. Installation of Panels

- 8.8.1. All sidelaps shall be lapped a minimum of one full rib. Panel endlaps shall be a minimum of 4" (101.6 mm) long on wall panels.
- 8.8.2. All wall panels shall be fabricated in one piece providing the length does not exceed practical limits for shipment or construction.
- 8.8.3. Storage and installation of the wall system shall be in accordance with Nucor's printed instructions.
- 8.8.4. Standard maximum panel length shall be 30' (9.14 m). If required, lengths of up to 45' (13.72) may be provided.

8.9. Clean-up

- 8.9.1. All dirt, oil, grease, fingerprints, or other contaminants shall be removed after installation to insure proper service life of the paint surface.

Section 9. Accessories

9.1. Walk Doors

- 9.1.1. Walk Doors provided by Canam Steel Building Corporation are commercial grade, welded construction. Door leafs are 1 3/4" (44.45 mm) thickness, 20 gauge galvanized face sheets, flush top and bottom channels with polystyrene insulated core. Hinge and lock jambs are reinforced with 10 gauge and 14 gauge material respectively. Doors are factory finished baked enamel finish. 16 gauge galvanized sub-jambs are included for ease of installation. Walk doors are provided K-D (knock down) for field assembly. Pre-assembled walk doors are available at additional cost.

9.2. Windows

- 9.1.2. Windows provided by Canam Steel Building Corporation are factory-assembled and are self-flashing for application with all CSBC standard wall panel profiles. Unless otherwise specified in the CSBC order documents, windows are insulated, clear-glass. Galvanized jamb stiffeners are supplied for rigidity of installation.

9.3. Framed Openings

- 9.3.1. Framing members for overhead doors shall typically be the same depth as the girts to which they attach. Wall panel edge shall be trimmed and flashed at all openings.
- 9.3.2. Framing for overhead doors shall be prime-coated or galvanized, as required per the Canam Steel Building Corporation order documents.

9.4. Light Transmitting Panels

- 9.4.1. Translucent light panels shall be glass fiber reinforced composite panel of ACRYLIT, containing 100% Acrylic resin monomers.
- 9.4.2. Panels shall be produced to match the roof/wall panel configuration.
- 9.4.3. Panels shall weigh eight ounces per square foot.
- 9.4.4. Nominal length of panels shall be 5'-0", 10'-0", or 11'-0".
- 9.4.5. Panels shall have 55-60% 'Light Transmission' per ASTM D-1494.
- 9.4.6. Panels shall have a 'Burn Rate' of less than 2 1/2" per minute per ASTM D-635.
- 9.4.7. Metal panels above and below the translucent section along the same run shall not be shorter than the length of three purlin spaces. Roof translucent panels shall not be located at the eave or ridge. Light Transmitting panels shall be placed such that there are four metal panels minimum between each LTP.
- 9.4.8. The buyer shall advise all parties and the owner that Light Transmitting Panels not designed nor intended for foot traffic.
- 9.4.9. PBR-panel Light Transmitting Panels have a UL and Florida approval rating at 5'-0" maximum purlin space.

9.5. Rake and Eave Extensions / Canopies

- 9.5.1. Rake and eave extensions shall be comprised of cantilevered extension beams or roof purlins, 1'-0" (0.3 m) to 6'-0" (1.83 m) beyond steel line, complete with all necessary trim, closures, and flashing to provide a weather-tight roof continuation of the roof line. Other dimensions may be available.
- 9.5.2. Canopies shall consist of roof panels supported by cantilevered canopy beams and purlins for 2'-0" (0.61 m) to 15'-0" (4.57 m) projection, complete with all necessary trim, closures, and flashing to provide a weather-tight extension.

9.6. Liner Panel

- 9.6.1. Liner panel for a walls or roof is produced from 29 or 28 gauge material with a white

straight polyester finish or unpainted galvalume plus as called for in the Canam Steel Building Corporation order documents. Liner panel is not intended to be exposed to the effects of weather, sunlight, moisture, or corrosive environments.

Section 10. Standard Serviceability Criteria

The most commonly addressed criteria in pre-engineered steel building systems are deflections and thermal expansion/contraction. Most building codes are silent on serviceability requirements, leaving them up to the project Engineer of Record or project architect. However, in most cases with pre-engineered buildings, deflection limits are based upon 'rules of thumb' or past experience by the building manufacturer. Canam Steel Building Corporation standards are based upon the American Institute of Steel Construction design guide, 'Serviceability Design Considerations for Low-Rise Buildings'. Any building order will meet or exceed the following criteria unless specifically specified otherwise in the order documents.

STRUCTURAL ELEMENTS	LIMIT	LOADING
WALL GIRTS SUPPORTING:		
Metal Wall Panels	Bay / 90 Horizontal	10 Year Wind
Masonry or Concrete Walls	Bay / 240 Horizontal	10 Year Wind
Dryvit, Wood, Sheetrock, Etc.	As specified by Buyer	10 Year Wind
PURLINS:		
Roof Slopes greater than 1/4:12	Bay / 150 Vertical	Collateral + Live / Snow Load
WALL PANELS:		
Metal, by CSBC	No special consideration	
Material by Others	Not by CSBC	
ROOF PANELS:		
Roof Slopes greater than 1/4:12	Purlin Spacing / 180 Vertical Purlin Spacing / 180 Vertical	Collateral + Live / Snow Load 200 lb. Load on One Panel
FRAMES SUPPORTING:		
Roof Slopes greater than 1/4:12	Rafter Span / 150 Vertical	Collateral + Live / Snow Load
Metal Wall Panels	Eave Height / 60 Horizontal	10 Year Wind
Tilt-up, Precast or Masonry Walls	Wall Height / 100 Horizontal	10 Year Wind

Section 11. Execution

11.1. Erection RECTION of the building system shall be in accordance with the appropriate erection drawings, erection guides and/or other documents furnished with the materials. It shall be the responsibility of the erector to comply with all appropriate legal and safety requirements. The erector shall determining and provide any and all temporary bracing, shoring, blocking, bridging, and/or securing of components, Etc., as required during erection of the building.