SECTION 07 42 13

ROOFING AND SIDING PANELS

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\*\* NOTE TO SPECIFIER \*\* Flexospan; Metal roof and wall panels, standing seam roof panels. 1 and 2 hour firewall metal panel construction, acoustical metal panels, explosion relief metal panels, roof retrofit metal panel systems, pre-engineered metal buildings and self storage buildings.  
  
 This section is based on the products of Flexospan, which is located at:  
253 Railroad St. P. O. Box 515  
Sandy Lake, PA 16145  
Toll Free Tel: 800-245-0396  
Tel: 724-376-7221  
Fax: 724-376-3864  
Email: [request info (sales@flexospan.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Flexospan&coid=32547&rep=&fax=724-376-3864&message=RE:%20Spec%20Question%20(07410fle):%20%20&mf=)  
Web: <http://www.flexospan.com>   
  
 [ Click [Here](http://www.arcat.com/arcatcos/cos32/arc32547.html) ] for additional information.  
   
 Flexospan is an integrated manufacturer of metal roofing and siding panels and light-gauge, cold-formed structural members. We also supply accessories required to complete your project as well as retrofit products. Our standard offerings are supplemented by our ability to provide customized products, from materials of construction to paint colors and finishes to custom panels and accessories, with minimum quantity requirements.  
   
 We offer specialty products from acoustical, firewall and explosion-relief panels to radius-curved corrugated. Since 1969, we've understood the custom requirements of steel building erection. We know that you want products that fit your project requirements, not off-the-shelf materials. That's why we encourage you to call us. We'll develop panel systems and provide the accessories to meet your needs.  
  
See our SpecWizard: [Click Here](http://www.arcat.com/specwizard/07410fle/index.htm)

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Through-fastened metal roof panels.
    2. Standing seam metal roof panels.
    3. Through-fastened metal wall panels.
    4. Architectural metal wall panels.
    5. Metal liner panels.
    6. Acoustical panels.
  1. RELATED SECTIONS

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

* + 1. Section 05 12 16 - Fabricated Fireproofed Steel Columns.
    2. Section 05 30 00 - Metal Decking.
    3. Section 05 44 00 - Cold-Formed Metal Trusses.
    4. Section 05 44 00 - Cold-Formed Metal Trusses.
    5. Section 06 10 00 - Rough Carpentry.
    6. Section 06 15 00 - Wood Decking.
    7. Section 07 21 16 - Blanket Insulation :Fiberglass Rolled Metal Building Insulation with VRR+ backer or semi-rigid unfaced fiberglass batt insulation at insulated walls and roof decks.
    8. Section 07 62 00 - Sheet Metal Flashing and Trim.
    9. Section 07 71 23 - Manufactured Gutters and Downspouts.
    10. Section 07 91 26 - Joint Fillers.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. Building Design Codes: International Building Code (IBC) with revisions for Local Codes
    2. American Iron and Steel Institute (AISI): North American Specification for the Design of Cold-Formed Steel Structural Members.
    3. American Institute of Steel Construction (AISC): Manual of Steel Construction.
    4. ASTM International (ASTM):
       1. ASTM D 659: Method of Evaluating Degree of Chalking of Exterior Paints.
       2. ASTM D 822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
       3. ASTM D 3361 - Standard Practice for Unfiltered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
       4. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
       5. ASTM D 4587 - Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings.
       6. ASTM G 23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.

\*\* NOTE TO SPECIFIER \*\* Delete if no roof system required.

* 1. PERFORMANCE REQUIREMENTS FOR ROOF SYSTEMS
     1. Design Requirements:
        1. The metal roof system as designed by the manufacturer shall be a complete system. All components of the system shall be supplied by the same manufacturer.
        2. Roof Panels: Steel panels shall be designed in accordance with the AISI Cold-Formed Steel Design Manual.
        3. Deflection requirements shall be in accordance with the applicable building code, or as a minimum, L/180 for roof snow load, but not less than 20 psf (98 kg/sq m).
        4. Accessories and Fasteners: Accessories and fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the roof panel system. Exposed fasteners shall not restrict free movement of the roof panel system resulting from thermal forces, except at designed points of roof panel fixity.
        5. Design Loads: Design load application shall be in accordance with local building code.
        6. Dead Loads: The dead load shall be the weight of the metal roof system.

\*\* NOTE TO SPECIFIER \*\* Collateral Loads consist of Sprinklers, Mechanical and Electrical Systems, and Ceilings, and shall not be attached to the roof panels.

* + - 1. Collateral Loads: Shall not be applied to the roof panels.
      2. Live Loads: The panels and fasteners shall be capable of supporting a minimum uniform live load of 20 psf (98 kg/sq m).
      3. Snow Loads: The design ground snow loads shall be as defined in accordance with local building code.
      4. Wind Loads: The design wind loads shall be based on the wind criteria defined in accordance with local building code.
      5. Thermal Effects: Roof panels shall be free to move in response to the expansion and contraction forces resulting from temperature variation, as specified in the MBMA Metal Roofing Systems Design Manual.

\*\* NOTE TO SPECIFIER \*\* Delete if no wall system required.

* 1. PERFORMANCE REQUIREMENTS FOR WALL SYSTEMS
     1. Design Requirements for Wall Systems:
        1. System Design: Metal wall system as designed by the manufacturer shall be a complete system. All components of the system shall be supplied by the same manufacturer.
        2. Wall Panels: Steel panels shall be designed in accordance with the AISI Cold-Formed Steel Design Manual.
        3. Design Loads: Design load application shall be in accordance with local building code.
        4. Wind Loads: The design wind loads shall be based on the wind criteria in accordance with local building code.
        5. Deflection: Deflection requirements shall be in accordance with the applicable building code, or as a minimum, L/180 for wind load (but not less than 10 psf (49 kg/sq m).
        6. Accessories and Fasteners: Accessories and fasteners shall be capable of resisting the specified design wind suction forces in accordance with local building code.
     2. Framing Members Supporting the Metal Panel System:
        1. Additions/revisions to framing members supporting the metal panel system to accommodate the manufacturer/fabricator's design shall be the Contractor's responsibility, and shall be submitted for review and approval by the Engineer of Record.
        2. Framing members and their connections shall be designed in accordance with AISC, AISI, and LGSI design specifications as applicable. Deflection requirements shall be in accordance with the applicable building code, or as a minimum, the provisions of the AISC Steel Design Guide Series 3 - Serviceability Design Considerations for Low-Rise-Buildings.
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00.
        1. Product Data: Manufacturer's data sheets on each product to be used.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     2. Shop Drawings:
        1. Show methods of erection, elevations, and plans of roof panels, sections and details, anticipated loads, flashings, roof curbs, vents, sealants, interfaces with all materials not supplied and proposed identification of component parts and their finishes.
        2. Submit complete shop drawings and erection details to Architect for review. Do not proceed with manufacture prior to review of shop drawings and approval of shop drawings. Do not use drawings prepared by Architect for shop or erection drawings.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, color charts representing manufacturer's full range of standard colors and patterns. For non standard colors or finishes color samples must be submitted to manufacturer for matching if quantity of custom materials is sufficient.
    2. Verification Samples: For each product specified, two samples, minimum size 12 inches (305 mm) x full panel width, representing actual product configuration.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications:
        1. Panels specified in this section shall be produced in a permanent factory environment with fixed-base roll-forming equipment. Standing seam roofing may be roll formed at the jobsite if the design lengths of the panels are longer than shipping capabilities. Roll forming of the profiled panels, curving of all panels, factory mitering of corners, and fabricating of all curved flashings shall be performed by the manufacturer.
        2. Manufacturer shall submit names and addresses of five previous projects of equal size and scope at the request of the Architect.
        3. Specified system shall have been in use in the United States for a minimum of ten years.
        4. Manufacturer with a minimum of five years experience in manufacturing panels of this nature in a permanent, stationary, indoor production facility utilizing industrial equipment.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Installer Qualifications:
       1. Installer shall have completed five projects of similar scope and magnitude that have been in service for a minimum of five years with satisfactory performance of the panel system.
       2. Installer shall submit names and addresses of five previous projects of equal size and scope at the request of the Architect.
       3. Installer's foreman shall be trained in the proper installation of the specified system, and present at all times when material is being installed.
    2. Regulatory Requirements: Comply with specified performance and local building code requirements. In the event of conflict, comply with the higher performing or more restrictive requirement.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver panels to job site properly packaged to provide protection against transportation damage.
     2. Exercise extreme care in unloading, storing, and erecting panels to prevent bending, warping, twisting, end and surface damage.
     3. Store all material and accessories above ground on well skidded platforms.
     4. Store inside or under breathable waterproof covering. Provide proper ventilation to panels to prevent condensation buildup between each panel. Elevate one end of bundles while being stored.
     5. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

\*\* NOTE TO SPECIFIER \*\*\* Delete the warranties for finishes not required. Polyester finish on the Flexospan FL-24 panel is not siliconized polyester.

* 1. WARRANTY
     1. Finish Warranty: Manufacturer warrants that under normal atmospheric conditions the metal panels will meet the following requirements after shipment from manufacturer's mill:
        1. Kynar 500 / Hylar5000 - Fluorocarbon (PVDF).
           1. The paint will not crack, check or peel for a period of 20 years.
           2. The paint will not chalk in excess of number 8 rating for a period of 20 years.
           3. The paint will not change color more than 5 NBS units for a period of 20 years.
        2. FLEXSHIELD (Vinyl Plastisol): 4 mils thick good both sides of the metal, for sidewalls.
           1. The paint will not crack, check or peel for a period of 20 years.
           2. The paint will not chalk in excess of number 6 rating for a period of 20 years.
           3. The paint will not change color more than 6 NBS units for a period of 20 years.
        3. FLEXSHIELD (Vinyl Plastisol): 4 mils thick good both sides of the metal, for roofing.
           1. The paint will not crack, check or peel for a period of 20 years.
           2. The paint will not chalk in excess of number 4 rating for a period of 10 years.
           3. The paint will not change color more than 7 NBS units for a period of 10 years.
        4. Siliconized Polyester (SP):
           1. The paint will not crack, check or peel for a period of 20 years.
           2. The paint will not chalk in excess of number 8 rating on sidewalls, or number 6 on roofing for a period of 20 years.
           3. The paint will not change color more than 5 NBS units on sidewalls, and 7 NBS units on roofing for a period of 20 years.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Flexospan, which is located at: 253 Railroad St. P. O. Box 515; Sandy Lake, PA 16145; Toll Free Tel: 800-245-0396; Tel: 724-376-7221; Fax: 724-376-3864; Email: [request info (sales@flexospan.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Flexospan&coid=32547&rep=&fax=724-376-3864&message=RE:%20Spec%20Question%20(07410fle):%20%20&mf=); Web: <http://www.flexospan.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.
  1. THROUGH-FASTENED METAL ROOF PANELS

\*\* NOTE TO SPECIFIER \*\* Flexospan's Flexbeam metal roof panel is economical, strong and aesthetically pleasing for facility maintenance projects. It has a trapezoidal profile, important for many architectural applications. The standard Flexbeam panel is 38-7/8 inches (987 mm) overall, with a 36 inches (914 mm) roof coverage. Not available in 26 gauge. Delete if not required.

* + 1. Metal Roof Panels: Flexbeam Metal Roof Panel as manufactured by Flexospan. Profile has 7.2 inches (183 mm) on center rib spacing by 1-1/2 inch (38 mm) deep. Overall panel width of 38.875 inches (987 mm) with a roofing coverage of 36 inches (914 mm).

\*\* NOTE TO SPECIFIER \*\* Flexospan's Flexrib metal roof panel combines strength with a deep, wide panel for a clean, bold look. It's easy to install and lasts for years. Flexrib has an anti-siphon design on the side lap, to assist in preventing sidelap leakage. Delete if not required.

* + 1. Metal Roof Panels: Flexrib Metal Roof Panel as manufactured by Flexospan. Profile is 1-1/4 inches (32 mm) deep with three major projecting ribs and two stiffening ribs between the major ribs, 39 inches (991 mm) wide overall with 36 inches (914 mm) roof cover, with anti-siphon design at sidelap.

\*\* NOTE TO SPECIFIER \*\* The Flexospan 1/2 inch (13 mm) corrugated metal roof panel is our most economical. Coil for Flexospan Corrugated Roofing & Corrugated metal roof panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Roof Panels: Corrugated Metal Roof Panel as manufactured by Flexospan; 2.67 inches (68 mm) rib spacing by 1/2 inch (13 mm) deep. Overall panel width of 41.25 inches (1048 mm) with a roofing coverage of 37.334 inches (948 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 3/4 inches (19 mm) corrugated metal roof panel where cost containment is important. Coil for Flexospan Corrugated metal roof panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Roof Panels: Corrugated Metal Roof Panel as manufactured by Flexospan; 2.67 inches (68 mm) rib spacing by 3/4 inch (19 mm) deep. Overall panel width 36.5 inches (927 mm) with a roofing coverage of 32 inches (813 mm) and a siding coverage of 34.67 (881 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 7/8 inches (22 mm) corrugated metal roof panel is the best choice for projects with large spans, where cost containment is important. Coil for Flexospan Corrugated metal roof panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Roof Panels: Corrugated Metal Roof Panel as manufactured by Flexospan; 2.67 inches (68 mm) rib spacing by 7/8 inch (22 mm) deep. Overall panel width of 36 inches (914 mm) with a roofing coverage of 32 inches (813 mm).

\*\* NOTE TO SPECIFIER \*\* For an innovative approach to building design, many architects are increasingly including radius-curved panels in their plans. For commercial applications, these panels add a dimension or originality to roof and wall systems. Radius-curved products are also useful for industrial applications, such as arched walkways and conveyor hoods. At Flexospan, we can create radius-curved profiles from corrugated products. The Flexospan Radius Curved 1/2 inch (13 mm) Corrugated Metal Roof Panel. Coil for Flexospan Corrugated Radius Curved Corrugated Metal Roof Panel is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Roof Panels: Radius Curved Corrugated Metal Roof Panel as manufactured by Flexospan; 2.67 inches (68 mm) rib spacing by 1/2 inch (13 mm) deep. Panel Width: Overall panel width of 41.25 inches (1048 mm) with a roofing coverage of 37.334 inches (948 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan Radius Curved 7/8 inches (22 mm) Corrugated Metal Roof Panel is the best choice for projects with large spans, where cost containment is important. Coil for Flexospan Radius Curved corrugated metal roof panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Roof Panels: Radius Curved Corrugated Metal Roof Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 7/8 inch (22 mm) deep. Panel Width: Overall panel width of 36 inches (914 mm) with a roofing coverage of 32 inches (813 mm).
    2. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Painted Steel with G-90 Galvanizing or Galvalume Coated:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

\*\* NOTE TO SPECIFIER \*\* Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. The coatings are available in our standard colors, or in custom colors as a special order. Siliconized polyester and Kynar 500/Hylar 5000 -type fluorocarbon coatings are stocked in a smooth finish. Flexshield (vinyl plastisol) has a ripple finish as standard, with 4 mils of color on the exterior and four mils of standard white on the reverse. Flexshield is available with up to 8-mils-thick coating on both sides or in a striated finish as a special order. The siliconized polyester and fluorocarbon coatings are available with stucco embossing as a special order. All special orders are subject to minimum requirements. Delete finish not required.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finishes not required.

Kynar 500 / Hylar5000:

Kynar 500 and Hylar 5000, 70 percent content fluorocarbon coatings.

Top Side Finish: Primer, dry = 0.2 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Reverse Side Finish: Primer, dry = 0.2 mil; pigmented polyester backer = 0.35 mil to 0.45 mil.

Accelerated Weathering: Per ASTM D 3361, 2000 hours, maximum color change of 2AE Hunter units; a chalk rating of no less than #8 per ASTM D 659.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214-89.

Siliconized Polyester:

Film Thickness: Primer, dry = 0.20 mil to 0.25 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Panel Backside. Standard panel interior finish shall be off-white polyester over primer, 0.5 mil dry-film thickness.

Accelerated Weathering: Per ASTM D 822/ASTM G 23 (Weatherometer), no checking, blistering or adhesion loss of external coating system after 2,000-hour test, no chalking greater than #8 rating on walls, and #6 rate on roofing per ASTM D 4214.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - * 1. Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

Flexospan Standard Color.

Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Unpainted Acrylic-Coated G-90 Galvanized Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

* + - 1. Unpainted Acrylic-Coated Galvalume Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

* + - 1. Type 304 - 2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 316-2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 3003 Painted Aluminum:
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

\*\* NOTE TO SPECIFIER \*\* Manufacturer offers custom finish types and colors special ordered with a minimum quantity requirement. Delete if not required. Must call manufacturer for special order price quote, warranty and availability

* + - * 1. Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Type 3003 Unpainted Aluminum:
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

* + 1. Accessories:
       1. Metal Components:
          1. Provide accessories and other items essential to a complete roof panel installation including trim, flashing, fascia, metal closures, caps, gutters, downspouts, soffits and similar metal components.
          2. Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.
       2. Flashing:
          1. Flashing shall have the same gauge and finish as the exterior panel, unless otherwise noted.
          2. Fabricate trim with clear protective coating.
       3. Fasteners:
          1. Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.
          2. Exposed stainless steel rivets shall match color finish of panel.
       4. Closure Strips:
          1. Polyethylene to match configuration of the covering.
       5. Sealants:
          1. Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.
          2. Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.
    2. Fabrication:
       1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
       2. Metal panels shall be factory formed on a stationary industrial type rolling mill.
       3. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
       4. Length: Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

* + - * 1. Panel Length: Factory formed standard lengths to 40 feet (12 m).
        2. Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + 1. Insulation: Use insulation designed to be installed with through fastened metal roof panels.

\*\* NOTE TO SPECIFIER \*\* Delete insulation thicknesses not required.

* + - 1. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 2-3/4 inches (70 mm).
      2. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 3 inches (76 mm).
      3. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 4 inches (102 mm).
      4. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 6 inches (152 mm).
  1. STANDING SEAM METAL ROOF PANELS

\*\* NOTE TO SPECIFIER \*\* The Flexospan FSS-18 Standing Seam metal roof panel is designed for both new and retrofit projects. With a seam of 2-5/8 inches (67 mm), an overall coverage area of 18 inches (457 mm) and stiffening ribs as standard, the FSS 18 is especially useful where strength over open purlins is required or where there are long runs with limited openings. Job Site Field Roll Forming for long lengths eliminating end lapping available. Delete if not required.   
 \*\* NOTE TO SPECIFIER \*\* The Flexospan FSS-18 Standing Seam metal roof panel is only available in 24 ga. and 22 ga steel thickness. Stainless steel type finishes 304-2B and 316-2B are only available in 24 gauge.

* + 1. Metal Roof Panels: FSS-18 Standing Seam Metal Roof Panel as manufactured by Flexospan Profile: Depth of 2-5/8 inches (67 mm) and overall coverage of 18 inches (457 mm). The design shall be UL 90 rated. Follow tested assembly construction details.

\*\* NOTE TO SPECIFIER \*\* The Flexospan FSS-316 Standing Seam metal roof panel is a straight-sided, non-trapezoidal panel that's simple to install and flash. It's best suited to roofs with continuous transitions or mansards and for light industrial and commercial-grade applications. The FSS-316 can also be roll formed on the job site, eliminating end lapping and shipping problems. The Flexospan FSS-316 Standing Seam metal roof panel is available in 24 ga., 22 ga and 20 ga. steel thickness, and is not available in stainless steel type 304-2B or 316-2B finish. Delete if not required.

* + 1. Metal Roof Panels: FSS-316 Standing Seam Metal Roof Panel as manufactured by Flexospan Profile: Depth of 3.0 inches (152 mm) and overall coverage of 16 inches (406 mm).The design shall be UL 90 rated. Follow tested assembly construction details to achieve rating.

\*\* NOTE TO SPECIFIER \*\* FSS-1.5 Standing Seam metal roof panel The flat-pan profile and 1.5 inches (38 mm) deep seam on the Flexospan Standing Seam 1.5 Series roof panel makes it ideal for highly architectural projects which have varying elevations and transitions, and for projects over decking or wood and felt substrate. Stiffening ribs are standard but are removable upon specific request. FSS-1.5 Standing Seam metal roof panel only available in 24 ga. steel thickness, and is not available in stainless steel type 304-2B or 316-2B finish. Delete if not required.

* + 1. Metal Roof Panels: FSS-1.5 Standing Seam Metal Roof Panel as manufactured by Flexospan Depth of 1.5 inches (38 mm) and overall coverage of 20 inches (508 mm).
    2. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Painted Steel with G-90 Galvanizing or Galvalume coated.
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. The coatings are available in our standard colors, or in custom colors as a special order. Siliconized polyester and Kynar 500/Hylar 5000 -type fluorocarbon coatings are stocked in a smooth finish. Flexshield (vinyl plastisol) has a ripple finish as standard, with 4 mils of color on the exterior and four mils of standard white on the reverse. Flexshield is available with up to 8-mils-thick coating on both sides or in a striated finish as a special order. The siliconized polyester and fluorocarbon coatings are available with stucco embossing as a special order. All special orders are subject to minimum requirements. Delete finish not required.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finishes not required.

Kynar 500 / Hylar5000:

Kynar 500 and Hylar 5000, 70 percent content fluorocarbon coatings.

Top Side Finish: Primer, dry = 0.2 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Reverse Side Finish: Primer, dry = 0.2 mil; pigmented polyester backer = 0.35 mil to 0.45 mil.

Accelerated Weathering: Per ASTM D 3361, 2000 hours, maximum color change of 2AE Hunter units; a chalk rating of no less than #8 per ASTM D 659.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214.

Siliconized Polyester:

Film Thickness: Primer, dry = 0.20 mil to 0.25 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Panel Backside. Standard panel interior finish shall be off-white polyester over primer, 0.5 mil dry-film thickness.

Accelerated Weathering: Per ASTM D 822/ASTM G 23 (Weatherometer), no checking, blistering or adhesion loss of external coating system after 2,000-hour test, no chalking greater than #8 rating on walls, and #6 rate on roofing per ASTM D 4214.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - * 1. Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

Flexospan Standard Color.

Custom Color:

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Acrylic-coated Galvalume (Acrylume) steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Note that FSS-1.5 and FSS-316 Standing Seam Metal Roof Panels are not available in stainless steel.

* + - 1. Type 304-2B Stainless Steel: 24 gauge.

\*\* NOTE TO SPECIFIER \*\* Note that FSS-1.5 and FSS-316 Standing Seam Metal Roof Panels are not available in stainless steel.

* + - 1. Type 316-2B Stainless Steel: 24 gauge.
    1. Accessories:
       1. End lap plates shall be provided by the manufacturer.
       2. The panel clip shall allow for the thermal expansion of the roof system.
       3. Metal Components:
          1. Provide accessories and other items essential to a complete roof panel installation including trim, flashing, fascia, metal closures, caps, gutters, downspouts, soffits and similar metal components.
          2. Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.
       4. Flashing: All flashing shall be manufactured from the same material as the roof panel and shall be designed to allow the panel system to expand.
       5. Fasteners:
          1. Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.
          2. Exposed stainless steel rivets shall match color finish of panel.
          3. Concealed Fasteners: Zinc-coated steel or stainless steel.
       6. Closure Strips: Polyethylene to match configuration of the covering.
       7. Sealants:
          1. Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.
          2. Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.
    2. Fabrication:
       1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
       2. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
       3. Length: Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

* + - * 1. Panel Length: Factory formed standard lengths to 40 feet (12 m).
        2. Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.
        3. Panel Length: Field formed lengths when greater than 60 feet (18 m).

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + 1. Insulation: Use insulation designed to be installed with standing seam metal roof panels.

\*\* NOTE TO SPECIFIER \*\* Delete insulation thicknesses not required.

* + - 1. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 2-3/4 inches (70 mm).
      2. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 3 inches (76 mm).
      3. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 4 inches (102 mm).
      4. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 6 inches (152 mm).
  1. THROUGH-FASTENED METAL WALL PANELS

\*\* NOTE TO SPECIFIER \*\* Flexospan's Flexbeam metal wall panel is economical, strong and aesthetically pleasing for facility maintenance projects. It has a trapezoidal profile, important for many architectural applications. The standard Flexbeam panel is 38-7/8 inches (987 mm) overall, with a 36 inches (914 mm) coverage. Not available in 26 gauge. Delete if not required.

* + 1. Metal Wall Panels: Flexbeam Metal Wall Panel as manufactured by Flexospan 7.2 inches (183 mm) on center rib spacing by 1-1/2 inch (38 mm) deep. Overall panel width of 38.875 inches (987 mm) with wall coverage of 36 inches (914 mm).

\*\* NOTE TO SPECIFIER \*\* Flexospan's Flexrib metal wall panel combines strength with a deep, wide panel for a clean, bold look. It's easy to install and lasts for years. Flexrib has an anti-siphon design on the side lap, to assist in preventing sidelap leakage. Delete if not required.

* + 1. Metal Wall Panels: Flexrib Metal Wall Panel as manufactured by Flexospan Profile: 1-1/4 inches (32 mm) deep with three major projecting ribs and two stiffening ribs between the major ribs, 39 inches (991 mm) wide overall with 36 inches (914 mm) wall coverage, with anti-siphon design at sidelap.

\*\* NOTE TO SPECIFIER \*\* Flexospan's Vertarib metal wall panel combines form and function. The recessed channels on this wall panel house semi-concealed fasteners, creating a smooth, flat appearance. Delete if not required.

* + 1. Metal Wall Panels: Vertarib Semi-Concealed Fasteners Metal Wall Panel as manufactured by Flexospan Profile: 1-1/4 inches (32 mm) deep with three major inverted ribs and two stiffening ribs between the major ribs, 39 inches (991 mm) wide overall with 36 inches (914 mm) wall coverage.

\*\* NOTE TO SPECIFIER \*\* The Flexospan 1/2 inch (13 mm) corrugated metal wall panel is our most economical. Coil for Flexospan Corrugated Roofing & Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Wall Panels: Corrugated Metal Wall Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 1/2 inch (13 mm) deep. Overall panel width of 41.25 inches (1048 mm) with a wall coverage of 40 inches (1016 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 3 /4 inches (19 mm) corrugated metal wall panel where cost containment is important. Coil for Flexospan Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Wall Panels: Corrugated Metal Wall Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 3/4 inch (19 mm) deep. Overall panel width 36.5 inches (927 mm) with wall coverage of 34.67 inches (881 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 7/8 inches (22 mm) corrugated metal wall panel is the best choice for projects with large spans, where cost containment is important. Coil for Flexospan Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Wall Panels: Corrugated Metal Wall Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 7/8 inch (22 mm) deep. Overall panel width of 36 inches (914 mm) with wall coverage of 34.67 inches (881 mm).

\*\* NOTE TO SPECIFIER \*\* For an innovative approach to building design, many architects are increasingly including radius-curved panels in their plans. For commercial applications, these panels add a dimension or originality to roof and wall systems. Radius-curved products are also useful for industrial applications, such as arched walkways and conveyor hoods. At Flexospan, we can create radius-curved profiles from corrugated products. The Flexospan 1/2 inch (13 mm) Radius Curved Corrugated Metal Wall Panel is our most economical. Coil for Flexospan Corrugated Radius Curved Corrugated Metal Wall Panel is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Wall Panels: Radius Curved Corrugated Metal Wall Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 1/2 inch (13 mm) deep. Overall panel width of 41.25 inches (1048 mm) with wall coverage of 40 inches (1016 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 7/8 inches (22 mm) Radius Curved Corrugated Metal Wall Panel is the best choice for projects with large spans, where cost containment is important. Coil for Flexospan Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Wall Panels: Radius Curved Corrugated Metal Wall Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 7/8 inch (22 mm) deep. Overall panel width of 36 inches (914 mm) with wall coverage of 34.67 inches (881 mm).
    2. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Painted Steel with G-90 Galvanizing or Galvalume coated.
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

\*\* NOTE TO SPECIFIER \*\* Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. The coatings are available in our standard colors, or in custom colors as a special order. Siliconized polyester and Kynar 500/Hylar 5000 -type fluorocarbon coatings are stocked in a smooth finish. Flexshield (vinyl plastisol) has a ripple finish as standard, with 4 mils of color on the exterior and four mils of standard white on the reverse. Flexshield is available with up to 8-mils-thick coating on both sides or in a striated finish as a special order. The siliconized polyester and fluorocarbon coatings are available with stucco embossing as a special order. All special orders are subject to minimum requirements. Delete finish not required.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finishes not required.

Kynar 500 / Hylar5000:

Kynar 500 and Hylar 5000, 70 percent content fluorocarbon coatings.

Top Side Finish: Primer, dry = 0.2 mil; Top coat, dry = 0.7 mil to 0.9 mil.

Reverse Side Finish: Primer, dry = 0.2 mil; pigmented polyester backer = 0.35 mil to 0.45 mil.

Accelerated Weathering: Per ASTM D 3361, 2000 hours, maximum color change of 2AE Hunter units; a chalk rating of no less than #8 per ASTM D 659.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214.

Siliconized Polyester:

Film Thickness: Primer, dry = 0.20 mil to 0.25 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Panel Backside. Standard panel interior finish shall be off-white polyester over primer, 0.5 mil dry-film thickness.

Accelerated Weathering: Per ASTM D 822 / ASTM G 23 (Weatherometer), no checking, blistering or adhesion loss of external coating system after 2,000-hour test, no chalking greater than #8 rating on walls, and #6 rate on roofing per ASTM D 4214.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - * 1. Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

Flexospan Standard Color.

Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Unpainted Acrylic-Coated G-90 Galvanized Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

* + - 1. Unpainted Acrylic-Coated Galvalume Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

\*\* NOTE TO SPECIFIER \*\* Gauge below not available for Flexbeam.

26 gauge.

* + - 1. Type 304 - 2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 316-2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 3003 Painted Aluminum:
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

\*\* NOTE TO SPECIFIER \*\* Manufacturer offers custom finish types and colors special ordered with a minimum quantity requirement. Delete if not required. Must call manufacturer for special order price quote, warranty and availability

* + - * 1. Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Type 3003 Unpainted Aluminum.
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

* + 1. Accessories:
       1. Metal Components:
          1. Provide accessories and other items essential to a complete roof panel installation including trim, flashing, fascia, metal closures, caps, gutters, downspouts, soffits and similar metal components.
          2. Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.
       2. Flashing: Flashing shall have the same gauge and finish as the exterior panel, unless otherwise noted.
       3. Fasteners:
          1. Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.
          2. Exposed stainless steel rivets shall match color finish of panel.
       4. Closure Strips: Polyethylene to match configuration of the covering.
       5. Sealants:
          1. Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.
          2. Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.
    2. Fabrication:
       1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
       2. Metal panels shall be factory formed on a stationary industrial type rolling mill.
       3. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
       4. Length: Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

* + - * 1. Panel Length: Factory formed standard lengths to 40 feet (12 m).
        2. Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + 1. Insulation: Use insulation designed to be installed with through fastened metal wall panel.

\*\* NOTE TO SPECIFIER \*\* Delete insulation thicknesses not required.

* + - 1. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 2 3/4 inches (70 mm).
      2. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 3 inches (76 mm).
      3. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 4 inches (102 mm).
      4. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 6 inches (152 mm).
  1. ARCHITECTURAL METAL WALL PANELS

\*\* NOTE TO SPECIFIER \*\* The FE 66 is 12 inches (305 mm) wide metal wall panel, recessed every six inches (152 mm) to provide a shadow effect. Delete if not required.

* + 1. Metal Wall Panels: FE-66 Metal Wall Panel as manufactured by Flexospan Profile: 1-1/2 inches (38 mm) deep by 12 inches (305 mm) wide panel coverage, recessed every six inches (152 mm) to provide a shadow effect.

\*\* NOTE TO SPECIFIER \*\* FE-12 12 inches (305 mm) wide, flush metal wall panel, with stiffener ribs. (It is available without the stiffener ribs if specified in 18 or 20 gauges only).) It has a clean, flat appearance. The Flexospan FE-12 panels are only available in 22 ga.,20 ga. and 18 ga. steel thickness. Delete if not required.

* + 1. Metal Wall Panels: FE-12 with stiffener ribs Metal Wall Panel as manufactured by Flexospan Profile: 1-1/2 inches (38 mm) deep by 12 inches (305 mm) wide panel coverage, flush panel, with stiffener ribs.

\*\* NOTE TO SPECIFIER \*\* FE-12 12 inches (305 mm) wide, flush metal wall panel, with no stiffener ribs. It is available without the stiffener ribs and has a clean flat appearance. Delete if not required. The Flexospan FE-12 panels without the stiffener ribs are only available in 20 ga. and 18 ga steel thickness. Delete if not required.

* + 1. Metal Wall Panels: FE-12 with no stiffener ribs Metal Wall Panel as manufactured by Flexospan Profile: 1-1/2 inches (38 mm) deep by 12 inches (305 mm) wide panel coverage, flush panel, with no stiffener ribs.
    2. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Painted Steel with G-90 Galvanizing or Galvalume coated.
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

\*\* NOTE TO SPECIFIER \*\* Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. The coatings are available in our standard colors, or in custom colors as a special order. Siliconized polyester and Kynar 500/Hylar 5000 -type fluorocarbon coatings are stocked in a smooth finish. Flexshield (vinyl plastisol) has a ripple finish as standard, with 4 mils of color on the exterior and four mils of standard white on the reverse. Flexshield is available with up to 8-mils-thick coating on both sides or in a striated finish as a special order. The siliconized polyester and fluorocarbon coatings are available with stucco embossing as a special order. All special orders are subject to minimum requirements. Delete finish not required.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finishes not required.

Kynar 500 / Hylar5000:

Kynar 500 and Hylar 5000, 70 percent content fluorocarbon coatings.

Top Side Finish: Primer, dry = 0.2 mil; Top coat, dry = 0.7 mil to 0.9 mil.

Reverse Side Finish: Primer, dry = 0.2 mil; pigmented polyester backer = 0.35 mil to 0.45 mil.

Accelerated Weathering: Per ASTM D 3361, 2000 hours, maximum color change of 2AE Hunter units; a chalk rating of no less than #8 per ASTM D 659.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214.

Siliconized Polyester:

Film Thickness: Primer, dry = 0.20 mil to 0.25 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Panel Backside. Standard panel interior finish shall be off-white polyester over primer, 0.5 mil dry-film thickness.

Accelerated Weathering: Per ASTM D 822 / ASTM G 23 (Weatherometer), no checking, blistering or adhesion loss of external coating system after 2,000-hour test, no chalking greater than #8 rating on walls, and #6 rate on roofing per ASTM D 4214.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - * 1. Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

Flexospan Standard Color.

Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Unpainted Acrylic-Coated G-90 Galvanized Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

* + - 1. Unpainted Acrylic-Coated Galvalume Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

* + - 1. Type 304 - 2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 316-2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 3003 Painted Aluminum:
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

\*\* NOTE TO SPECIFIER \*\* Manufacturer offers custom finish types and colors special ordered with a minimum quantity requirement. Delete if not required. Must call manufacturer for special order price quote, warranty and availability

* + - * 1. Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Type 3003 Unpainted Aluminum.
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

* + 1. Accessories:
       1. Metal Components:
          1. Provide accessories and other items essential to a complete roof panel installation including trim, flashing, fascia, metal closures, caps, gutters, downspouts, soffits and similar metal components.
          2. Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.
       2. Flashing: Flashing shall have the same gauge and finish as the exterior panel, unless otherwise noted.
       3. Fasteners:
          1. Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.
          2. Exposed stainless steel rivets shall match color finish of panel.
       4. Closure Strips: Polyethylene to match configuration of the covering.
       5. Sealants:
          1. Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.
          2. Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.
    2. Fabrication:
       1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
       2. Metal panels shall be factory formed on a stationary industrial type rolling mill.
       3. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
       4. Length: Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

* + - * 1. Panel Length: Factory formed standard lengths to 40 feet (12 m).
        2. Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + 1. Insulation: Use insulation designed to be installed with architectural metal wall panel.

\*\* NOTE TO SPECIFIER \*\* Delete insulation thicknesses not required.

* + - 1. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 2 3/4 inches (70 mm).
      2. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 3 inches (76 mm).
      3. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 4 inches (102 mm).
      4. Insulation shall be Fiberglass-type blanket faced with VRR+ vinyl of the following thickness: 6 inches (152 mm).
  1. METAL LINER PANELS

\*\* NOTE TO SPECIFIER \*\* The Flexospan FL-24 is an interior metal liner panel that is installed on the outside of the structural steel. Subgirts are attached to the outside of the panel and the exterior roof or wall panel is attached to the subgirts. It's useful as a flat liner sandwich panel for both roofing and siding applications where additional insulation or strength is required. It provides 24 inches (610 mm) of coverage and comes standard with three stiffening ribs. Delete if not required.

* + 1. Metal Liner Panels: FL-24 Metal Liner Panel as manufactured by Flexospan Profile: FL-24 Liner panel shall have three stiffening ribs placed 6 inches (152 mm) on center and shall have an overall width of 24 inches (610 mm), and depth of 1-1/2 inch (38 mm). The Flexospan FL-24 must be erected prior to exterior panel and on the outside of the purlin or girt line. See installation instructions or Flexospan standard details.
       1. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - * 1. Painted Steel with G-90 Galvanizing or Galvalume coated.

Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

Finish:

Polyester.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214.

Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

White.

Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability

* + - * 1. Unpainted Acrylic-Coated G-90 Galvanized Steel:

Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - * 1. Unpainted Acrylic-Coated Galvalume Steel.

Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - * 1. Type 304 - 2B Stainless Steel.

Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

22 gauge.

24 gauge.

* + - * 1. Type 3003 Unpainted Aluminum.

Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete Thickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

* + - 1. Accessories:
         1. Metal Components:

Provide accessories and other items essential to a complete wall panel installation including trim, flashing and similar metal components.

Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.

Sub-Girts shall be 1/2 inch (13 mm) or 3/4 inch (19 mm) as indicated and manufactured from 16 or 18 gauge (1.519 mm or 1.214 mm) galvanized steel.

* + - * 1. Flashing:

Flashing shall have the same gauge and finish as the FL-24 panel, unless otherwise noted.

* + - * 1. Fasteners:

Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.

* + - * 1. Sealants:

Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.

Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.

* + - 1. Fabrication:
         1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
         2. Metal panels shall be factory formed on a stationary industrial type rolling mill.
         3. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
      2. Length:
         1. Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

Panel Length: Factory formed standard lengths to 40 feet (12 m).

Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + - 1. Insulation:

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

* + - * 1. Sandwich Panel Insulation shall be 1-1/2 inches (38 mm) thick, R6 unfaced semi-rigid board. Insulation shall be friction fit and compressed behind the sub-girt.
      1. Installation- Field constructed metal wall sandwich panel:
         1. The Flexospan FL-24 must be erected prior to exterior panel and on the outside of the purlin or girt line. See installation instructions or Flexospan standard details. Sub-Girts shall be 1/2 inch (13 mm) or 3/4 inch (19 mm) as indicated and manufactured from 16 or 18 gauge (1.519 mm or 1.214 mm) galvanized steel and shall be attached to the liner panel at a maximum of 4 feet (1219 mm) on center. Sub-girts shall be attached to the liner panel with No. 14 by 3/4 inch (19 mm) sheet-metal screws with hex heads.

\*\* NOTE TO SPECIFIER \*\* Flexospan's Vertarib metal wall interior liner panel combines form and function. The recessed channels on this wall panel house semi-concealed fasteners, creating a smooth, flat appearance. Delete if not required.

* + 1. Metal Liner Panels: Vertarib Semi-Concealed Fasteners Metal Wall Liner Panel as manufactured by Flexospan Profile: 1-1/4 inches (32 mm) deep with three major inverted ribs and two stiffening ribs between the major ribs, 39 inches (991 mm) wide overall with 36 inches (914 mm) wall coverage.

\*\* NOTE TO SPECIFIER \*\* The Flexospan 1/2 inch (13 mm) corrugated metal liner panel is our most economical. Panel coil is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Liner Panels: Corrugated Metal Liner Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 1/2 inch (13 mm) deep. Overall panel width of 41.25 inches (1048 mm) with coverage of 40 inches (1016 mm).

\*\* NOTE TO SPECIFIER \*\* The Flexospan 3/4 inches (19 mm) corrugated metal roof and wall interior liner panel where cost containment is important. Coil for Flexospan Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Liner Panels: Corrugated Metal Liner Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 3/4 inch (19 mm) deep. Overall panel width 36.5" with coverage of 34.67".

\*\* NOTE TO SPECIFIER \*\* The Flexospan 7/8 inches (22 mm) corrugated metal roof and wall interior liner panel is the best choice for projects with large spans, where cost containment is important. Coil for Flexospan Corrugated steel Siding panels is stocked in four different metal materials. Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. Delete if not required.

* + 1. Metal Liner Panels: Corrugated Metal Liner Panel as manufactured by Flexospan 2.67 inches (68 mm) rib spacing by 7/8 inch (22 mm) deep. Overall panel width of 36 inches (914 mm) with coverage of 34.67 inches (881 mm).
    2. Material:

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Painted Steel with G-90 Galvanizing or Galvalume coated.
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

\*\* NOTE TO SPECIFIER \*\* Flexospan offers three standard coatings, each providing a different level of protection, as well as a mill finish. The coatings are available in our standard colors, or in custom colors as a special order. Siliconized polyester and Kynar 500/Hylar 5000 -type fluorocarbon coatings are stocked in a smooth finish. Flexshield (vinyl plastisol) has a ripple finish as standard, with 4 mils of color on the exterior and four mils of standard white on the reverse. Flexshield is available with up to 8-mils-thick coating on both sides or in a striated finish as a special order. The siliconized polyester and fluorocarbon coatings are available with stucco embossing as a special order. All special orders are subject to minimum requirements. Delete finish not required.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finishes not required.

Kynar 500 / Hylar5000:

Kynar 500 and Hylar 5000, 70 percent content fluorocarbon coatings.

Top Side Finish: Primer, dry = 0.2 mil; Top coat, dry = 0.7 mil to 0.9 mil.

Reverse Side Finish: Primer, dry = 0.2 mil; pigmented polyester backer = 0.35 mil to 0.45 mil.

Accelerated Weathering: Per ASTM D 3361, 2000 hours, maximum color change of 2AE Hunter units; a chalk rating of no less than #8 per ASTM D 659.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

Vinyl Plastisol (FLEXSHIELD):

Volatile Organic Content: 0 percent.

Top Side Finish: Primer, dry = 0.15 mil to 0.25 mil; Top coat, dry = 4.0 mil, minimum.

Reverse Side Finish: Primer, dry = 0.15 to 0.25 mil; top coat, dry = 4.0 mil, minimum.

Accelerated Weathering: Per ASTM D 4587, no cracking, peeling, crazing or adhesion loss of external coating system after 2000 hours accelerated weathering; no chalking greater than #6 rating on walls and #4 rating on roof per ASTM D 4214.

Siliconized Polyester:

Film Thickness: Primer, dry = 0.20 mil to 0.25 mil; Top coat, dry = 0.7 mil to 0.8 mil.

Panel Backside. Standard panel interior finish shall be off-white polyester over primer, 0.5 mil dry-film thickness.

Accelerated Weathering: Per ASTM D 822 / ASTM G 23 (Weatherometer), no checking, blistering or adhesion loss of external coating system after 2,000-hour test, no chalking greater than #8 rating on walls, and #6 rate on roofing per ASTM D 4214.

Where the panel backside is exposed to view, the color may vary from panel to panel. If an exact match is required, material shall be special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - * 1. Color:

\*\* NOTE TO SPECIFIER \*\* Flexospan offers many standard colors and also offers custom colors special ordered with a minimum quantity requirement. Delete if not required.

Flexospan Standard Color.

Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Unpainted Acrylic-Coated G-90 Galvanized Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

* + - 1. Unpainted Acrylic-Coated Galvalume Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

26 gauge.

* + - 1. Type 304 - 2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 316-2B Stainless Steel:
         1. Steel Thickness:

\*\* NOTE TO SPECIFIER \*\* Delete gauges not required.

18 gauge.

20 gauge.

22 gauge.

24 gauge.

* + - 1. Type 3003 Painted Aluminum:
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* DeleteThickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

\*\* NOTE TO SPECIFIER \*\* Manufacturer offers custom finish types and colors special ordered with a minimum quantity requirement. Delete if not required. Must call manufacturer for special order price quote, warranty and availability

* + - * 1. Custom Color.

Special ordered with a minimum quantity requirement. Must call manufacturer for special order price quote, warranty and availability.

* + - 1. Type 3003 Unpainted Aluminum.
         1. Aluminum Thickness:

\*\* NOTE TO SPECIFIER \*\* DeleteThickness not required.

.032 inch (0.8 mm).

.040 inch (1 mm).

* + 1. Accessories:
       1. Metal Components:
          1. Provide accessories and other items essential to a complete roof panel installation including trim, flashing, fascia, metal closures, caps, gutters, downspouts, soffits and similar metal components.
          2. Metal components to be fabricated from same gauge and finish as metal panels, unless otherwise noted.
       2. Flashing: Flashing shall have the same gauge and finish as the exterior panel, unless otherwise noted.
       3. Fasteners:
          1. Exposed fasteners shall be hex head self-drilling screws with bonded washers and color finished to match panels. Screws may be either plated carbon steel or stainless steel as noted on the drawings.
          2. Exposed stainless steel rivets shall match color finish of panel.
       4. Closure Strips: Polyethylene to match configuration of the covering.
       5. Sealants:
          1. Exposed Sealants: Shall be one component silicone based as recommended by panel manufacturer: field applied.
          2. Concealed Sealants: Non-curing, non-skinning butyl, polyisobutylene or polybutane tape as recommended by panel manufacturer; field applied.
    2. Fabrication:
       1. Form and fabricate components of the system to the profiles and patterns as determined by Architect.
       2. Metal panels shall be factory formed on a stationary industrial type rolling mill.
       3. Panel Orientation: Panels with custom metallic finishes are directional and shall be erected so as to produce a consistent visual effect.
       4. Length: Unless otherwise shown on Drawings or specified herein, panels shall be full length. Fabricate flashings in 10 ft (3 m) lengths.

\*\* NOTE TO SPECIFIER \*\* Delete panel length not required.

* + - * 1. Panel Length: Factory formed standard lengths to 40 feet (12 m).
        2. Panel Length: Factory formed custom lengths of 40 feet to 60 feet (12 m to 18 m) with special packaging and shipping.

\*\* NOTE TO SPECIFIER \*\* Flexospan's acoustical panels offer economical solutions to meet noise reduction requirements and building code regulations in industrial areas. Acoustical panels reduce noise levels by absorbing sound and by slowing the rate of sound-wave transmissions. Our acoustical panel is field assembled. It can be produced in a variety of panel profiles, with complementary flashings. Delete if not required.

* 1. ACOUSTICAL PANELS
     1. Acoustical Panels: Perforated metal profile panel as manufactured by Flexospan.
        1. Refer to Drawings for profiles, material requirements and assembly application.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Tolerance Requirements: No panels shall be erected if the structural steel does not meet the tolerances of the AISC Code, Section 7. It is the responsibility of the Contractor to examine this alignment before the panels are erected. The Contractor is responsible for properly installing the roof system and ensuring that all purlins or sub-framing members are properly installed.
      3. If structural steel erection is the responsibility of another installer, notify Architect of unsatisfactory conditions before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

\*\* NOTE TO SPECIFIER \*\* Through Fastened Metal Roof Panels. Delete if not required.

* 1. INSTALLATION - THROUGH FASTENED METAL ROOF PANELS
     1. Install in accordance with manufacturer's instructions.
     2. Fastening of Exterior Wall Panels: Exposed fastener profiles shall be attached with No. 14, self-tapping screws when attached to a sub-girt with a No. 14 by 3/4 inch (19 mm) sheet metal screw, or 12/14 by 1 inch (25 mm) self-drilling screws with sealing washers. When used with color-coated exterior panels, fastener heads shall be the same color as the panel. Fasteners used for attaching aluminum, stainless steel, or Galvalume/Acrylume, shall be of an approved type.
     3. Polyethylene Ridge Closures: Closed cell polyethylene ridge closures are required on all ridges and eave conditions.
     4. Tape: Sealer tape required on all through fastened roofs under 4:12 pitch at the end and side laps .

\*\* NOTE TO SPECIFIER \*\* Standing Seam Metal Roof Panels. Delete if not required.

* 1. INSTALLATION - STANDING SEAM METAL ROOF PANELS
     1. Install in accordance with manufacturer's instructions.
     2. Sealant: Panels shall be properly sealed at the side and end joints with sealants provided by the manufacturer. Sealant shall be applied over and under the clip as described in the instructions and standard details.
     3. Polyethylene Ridge Closures: Closed cell polyethylene ridge closures are required on all ridges and high eave conditions and are to be friction fit and caulked in panned ends of panels per the instructions and standard details.

\*\* NOTE TO SPECIFIER \*\* FSS-18 eave closures plugs are also available. FSS-316 metal ridge closures are also available. Delete if not required.

* + - 1. Metal Ridge End Closures. Formed metal ridge end closures with butyl tape as supplied by the manufacturer are to be used for all ridge or high-eave conditions.

\*\* NOTE TO SPECIFIER \*\* FSS 1.5 panels only. Delete if not required.

* + 1. Field Panning: The FSS-1.5 panels shall be field panned in accordance with the instructions and standard details.
    2. Side Laps: Side laps shall be fully seamed, either by hand seaming or with an electric seaming machine, to ensure the integrity of the total roof system.
    3. Appearance: Due to the inherent tolerances of base metal, any flat surface panels have the potential of "oil canning". This will not be a basis for panel rejection.
  1. INSTALLATION - METAL PANELS
     1. Install in accordance with manufacturer's instructions.
     2. Fastening of Exterior Wall Panels:

\*\* NOTE TO SPECIFIER \*\* Through Fastened Wall Panels. Delete if not required.

* + - 1. Exposed fastener profiles shall be attached with No. 14, self-tapping screws when attached to a sub-girt with a No. 14 by 3/4 inch (19 mm) sheet metal screw, or 12/14 by 1 inch (25 mm) self-drilling screws with sealing washers. When used with color-coated exterior panels, fastener heads shall be the same color as the panel. Fasteners used for attaching aluminum, stainless steel, or Galvalume/Acrylume, shall be of an approved type.

\*\* NOTE TO SPECIFIER \*\* Concealed Fastener Wall Panels. Delete if not required.

* + - 1. Concealed fastener exterior panels shall be positive fastened only, no clip-type fastening shall be permitted. When fastened directly to structural steel, panels shall be attached with No. 14 by 1 inch (25 mm) self-tapping screws. When used in conjunction with a FL-24 liner panel and sub-girt, the exterior panel shall be attached using No. 14 by 3/4 inch (19 mm) sheet metal screws, or 12/14 by 1 inch (15 mm) TEK 3 self-drilling screws.

\*\* NOTE TO SPECIFIER \*\* FL-24 Panels only. Delete if not required.

* 1. INSTALLATION - METAL WALL SANDWICH PANEL
     1. Install in accordance with manufacturer's instructions.
     2. The Flexospan FL-24 must be erected prior to exterior panel and on the outside of the purlin or girt line. See installation instructions or Flexospan standard details Sub-Girts shall be 1/2 inch (13 mm) or 3/4 inch (19 mm) as indicated and manufactured from 16 or 18 gauge (1.519 mm or 1.214 mm) galvanized steel and shall be attached to the liner panel at a maximum of 4 feet (1219 mm) on center. Sub-girts shall be attached to the liner panel with No. 14 by 3/4 inch (19 mm) sheet-metal screws with hex heads.

\*\* NOTE TO SPECIFIER \*\* Through Fastened Liner Panels. Delete if not required.

* 1. INSTALLATION - THROUGH FASTENED LINER PANELS
     1. Install in accordance with manufacturer's instructions.
     2. When through fastened liner panel is used inside the purlin or grit line, subgirts are only necessary when spacing of purlins or girts is extreme.
     3. Fastening Through Fastened Liner Panels: Exposed fastener profiles shall be attached with No. 14, self-tapping screws when attached to a sub-girt with a No. 14 by 3/4 inch (19 mm) sheet metal screw, or 12/14 by 1 inch (25 mm) self-drilling screws with sealing washers. When used with color-coated exterior panels, fastener heads shall be the same color as the panel. Fasteners used for attaching aluminum, stainless steel, or Galvalume/Acrylume, shall be of an approved type.
  2. PROTECTION
     1. Protect installed products until completion of project.
     2. Remove strippable film immediately upon erection of panels or flashings.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. On standing seam roofing panels complete the seaming first and then immediately remove strippable plastic film.
    2. Exercise extreme care in unloading, storing, and erecting panels to prevent bending, warping, twisting, end and surface damage.
    3. Remove all metal filings from panel surface as part of the cleanup procedure.
    4. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION