



Klip Rib[®]
Guide Specifications
conforming to C.S.I. standards

Klip Rib® Guide Specifications

MANUFACTURER - AEP SPAN

5100 East Grand Avenue, Dallas, TX 75223, 800-527-2503

1140 West Mountain Street, Kernersville, NC 27284, 800-527-2503

2141 Milwaukee Way, Tacoma, WA 98421, 800-733-4955

10905 Beech Avenue, Fontana, CA 92337, 800-272-2466

This Guide Specification is to be used to develop an office master specification or specifications for a project. In either case, this Guide Specification must be edited to fit the conditions of use. Particular attention should be given to the deletion of inapplicable provisions. Include necessary items related to a particular project. Include appropriate requirements where blank spaces have been provided.

SECTION 07411 – Preformed (Manufactured) Roof Panels

PART 1 – GENERAL

1.01 SECTION INCLUDES

The work includes, but is not necessarily limited to, furnishing and installation of all preformed metal roofing, and accessories as indicated on the drawings and specified herein.

1.02 RELATED SECTIONS

Edit for project conditions. Section Numbers indicated are those recommended by CSI Masterformat; revise if numbers differ from those used in Project Manual.

- A. Structural Steel Supports: Section 05100
- B. Structural Metal Roof and Floor Decking: Section 05300
- C. Miscellaneous Fabricated Steel: Section 05500
- D. Structural Lumber Supports: Section 06100
- E. Structural Glue Laminated Lumber Supports: Section 06181
- F. Thermal Insulation: Section 07200
- G. Fireproofing: Section 07250
- H. Sheetmetal Gutters and Downspouts: Section 07600
- I. Joint Sealants not specified herein: Section 07900
- J. Finish Painting not specified herein: Section 09900

1.03 PERFORMANCE REQUIREMENTS

A. TESTING AND CERTIFICATION

1. Wind Uplift: UL 580 test, 24 and 22 gauge panels rated Class 90 (Construction #170), when installed over minimum 14 gauge steel purlins spaced 5'0" on center maximum.

Note: UL certification does not indicate panel suitability for actual project conditions. See Section 1.04, item E.1. for actual project uplift conditions.

2. Structural Performance: The wind uplift resistance of the roof assembly shall be established in accordance with ASTM E-1592 or the previous Corps of Engineers Test Method for Structural Performance SSSMRS by Uniform Static Air Pressure Difference CEGS-07416.
3. Air Infiltration: Panel (without insulation) to meet the following standard when tested in accordance with ASTM 1680-95:
 - a. With Sidelap Sealant: 0.006 CFM/lineal ft. of panel seam at 1.57 psf positive pressure, and;
 - b. 0.02 CFM/lineal ft. of panel seam at 1.57 psf negative pressure.
4. Water Penetration: Panel to meet the following standard when tested in accordance with ASTM E1646-95:
 - a. With Sidelap Sealant: No leakage at 6.24 psf.

1.04 SUBMITTALS

A. PRODUCT DATA

1. Submit Manufacturer's technical product data, installation instructions and recommendations for each type of roofing required. Include data substantiating that materials comply with requirements.

B. SAMPLES

1. Prior to ordering products, submit Manufacturer's standard color samples for Architect's/Engineer's selection.
2. Prior to starting work, submit (quantity) 12" long panel samples showing shape and a representative color chip for Architect's/Engineer's acceptance.

C. SHOP DRAWINGS

1. Submit complete shop drawings detailing all perimeter and joint flashings that comply with Manufacturer's standard recommendations.
2. Describe all proposed details that deviate from what is shown on the plans.
3. Details to allow for expansion and contraction.

D. SITE CONDITIONS

1. Provide completed site condition form for environmental conditions excluded in the Standard Warranty.

E. DESIGN CRITERIA

1. Wind Uplift: The roof system manufacturer shall provide an attachment schedule signed by a professional Engineer licensed in the area where the work will be performed and supporting calculations to resist the following uplift loads:
 - a. Uplift loads as calculated using the ____ Edition of the UBC with a _____ mph basic wind speed, Exposure Factor _____, and importance Factor _____.
On more complex roofs, the width of discontinuity (perimeter & corner zones) should be provided by the Engineer of Record. [Item 2 is for snow load applications only]
2. Drag Loading: The roof system manufacturer shall provide an attachment schedule signed by a licensed professional Engineer and supporting calculations to resist drag loads induced by a snow load of _____ psf.

1.05 QUALITY ASSURANCE

A. INSTALLER'S QUALIFICATIONS

1. Installer must be approved by the Panel Manufacturer in writing prior to work commencing.
2. Installer shall meet the following:
 - a. Successfully applied five metal roofs of comparable size and complexity which reflects a quality weathertight installation in the region where the work will be performed.
 - b. Have been in business for a minimum period of five (5) years in the region where the work will be performed.

B. MANUFACTURER'S QUALIFICATIONS

1. Manufacturer shall have a minimum of 10 years experience supplying metal roofing to the region where the work is to be done.
2. Comply with current independent testing and certification as specified.
3. Manufacturer shall provide proof of \$2,000,000 liability insurance for their metal roof system and comply with current independent testing and certification as specified.
4. The roof panel manufacturer must also subscribe to Underwriters Laboratories' "Follow Up Service" assuring continuing product compliance with UL requirements. Shipment packaging of panels and attachment clips must bear UL classification markings.
5. Panel Manufacturers without full supporting literature; Flashings & Details Guides, Guide Specifications and Technical Support, shall not be considered equal to the specified product.

C. REGULATORY AGENCY REQUIREMENTS

1. Comply with UBC and local Building Code requirements if more restrictive than those specified herein.
2. Compliance with certification must be submitted with bid.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Protect against damage and discoloration.
- B. Handle panels with non-marring slings.
- C. Do not bend panels.
- D. Store panels above ground, with one end elevated for drainage.
- E. Protect panels against standing water and condensation between adjacent surfaces.
- F. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and allow to air dry.
- G. Painted panels shall be shipped with a protective plastic sheeting or a strippable film coating between all panels. Remove any strippable film coating prior to installation and in any case, do not allow the strippable film coating to remain on the panels in extreme heat, cold, or in direct sunlight or other UV source.

1.07 PROJECT CONDITIONS

- A. Examine the conditions and substrates in which metal roofing work is to be installed. Substrate shall be installed level, flat and true to avoid panel stresses.
- B. Field measurements shall be taken prior to fabrication of panels.
- C. Proceed with roofing installation only after satisfactory conditions are met.

1.08 WARRANTY

A. MANUFACTURER'S PRODUCT WARRANTY

1. Manufacturer's standard coating performance warranty, as available for specified installation and environmental conditions. (Contact an AEP Span representative to determine actual warranty criteria.)

B. CONTRACTOR'S WARRANTY

Warrant panels, flashings, sealants, fasteners and accessories against defective materials and/or workmanship, to remain watertight and weatherproof with normal usage for two (2) years following Project Substantial Completion date.

C. MANUFACTURER'S WATERTIGHTNESS WARRANTY

1. Contact AEP Span's sales department for watertightness warranty information.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

AEP Span, A Division of ASC Profiles Inc, 2110 Enterprise Boulevard, West Sacramento, California 95691-3493, 800-726-2727, 916-372-0933 (Corporate Office)

SALES AND MANUFACTURING LOCATIONS:

Los Angeles: 10905 Beech Avenue, Fontana, California 92335, 909-823-0401

Tacoma: 2141 Milwaukee Way, Tacoma, Washington 98421, 253-383-4955.

Dallas: 5100 East Grand Avenue, Dallas, TX 75223, 214-827-1740.

Kernersville, 1140 West Mountain Street, Kernersville, NC 27284, 214-827-1740

B. PANEL DESIGNATION: Klip-Rib®

- C: ALTERNATES: Approval of substitute systems is required prior to bid. The Architect will be the sole judge of what qualifies as an "equal" system. To be approved as an equal system, submit or respond to all items in "Quality Assurance", "Performance Requirements" and "Submittal " sections of this specification. All submittals must be received in the Architect's office a minimum of ten (10) working days prior to bid.

2.02 MATERIALS

A. PANELS

1. Base Metal:
 - a. Material: Steel conforming to (choose one)
 - (1) ASTM A792 Zincalume®/ Galvalume®, minimum yield strength of 50,000 psi, thickness 24 gauge and 22 gauge, 80,000 psi 26 gauge.
 - (2) [For primers thicker than 0.5 mil] ASTM A653 (formerly ASTM A446). Galvanized, minimum yield 50,000 psi, thickness 24 and 22 gauge.
 - b. Protective Coating:
 - (3) Conform to ASTM A792. AZ50 (Zincalume/ Galvalume).
 - (4) [For primers thicker than 0.5 mil] Conform to ASTM A924 (formerly ASTM A525) G-90 Galvanized.
2. Exterior Finish: (choose one)
 - a. DuraTech® 5000 (polyvinylidene Fluoride), full 70% Kynar® 500/Hylar 5000® consisting of a baked-on 0.2 mil corrosion resistant primer and a baked-on 0.8 mil finish coat for a total of 1.0 mil dry film thickness, with a specular gloss of 10-30% when tested in accordance with ASTM D-523-89 at 60°.
 - b. Zincalume® Plus or Galvalume® Plus protective coating.
 - c. DuraTech® mx metallic finish, consisting of a baked-on acrylic primer (0.2 mil.) and a baked-on Polyvinylidene Fluoride finish coat (0.8 mil.) totaling a nominal 1.0 mil. dry film thickness, with a specular gloss of 20-35% when tested in accordance with ASTM D-523-89 at 60°.
3. Interior Finish:
 - a. Primer Coat Material: Corrosion-resistant primer; primer coat dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
 - b. Total Interior Dry Film Thickness: 0.50 mils.
 - c. Color: Off-White.
4. Color: (choose one)
 - e. Manufacturer's standard selection of not less than 22 colors.
 - f. Custom color as selected by Architect to be _____.
5. Configuration: Roof panels shall consist of integral self-locking standing seams with a rib height of 1-5/8 inches spaced 8 inches on center, nominal panel width 16 inches.

B. ACCESSORIES

1. Fastener Clip:

KL-65 21 gauge steel clip coated with Zincalume®, UL-90 rated (Construction #170). [For direct application over rigid insulation over metal or wood deck, a modified clip (KL-65 Mod) is required.]
2. Fasteners
 - a. Per manufacturer's recommendation.
3. End Closures:
 - a. Material: Weatherproof, laminated, semi-rigid, cross-linked polyethylene foam, tightly fit to panel configurations.
4. Sealant:
 - a. Gunnable grade caulking: Single component urethane and butyl rubber caulk.
 - b. Tape sealant: Butyl-type mastic.

C. FLASHING

1. Protective metallic coating, material, gauge and finish to match panels. Do not use lead or copper. Remove any strippable film prior to installation.
2. Material, gauge and finish to match panels. Do not use lead or copper.

D. FABRICATION

1. Unless otherwise shown on drawings panels shall be full length. Flashings and accessories shall be fabricated in longest practical lengths.

2. Roofing panels shall be factory formed. Field formed panels are not acceptable.

PART 3 – EXECUTION

3.01 EXAMINATION

A. EXISTING CONDITIONS

1. Verify that members and/or substrate to receive panels are complete, accurately sized and located, in true plane, secure and otherwise properly prepared.
2. Prior to starting work, notify General Contractor about defects requiring correction.
3. Do not start work until conditions are satisfactory.

3.02 PREPARATION

A. FIELD MEASUREMENTS

1. Verify prior to fabrication.
2. If field measurements differ from drawing dimensions, notify Architect/Engineer prior to fabrication.

B. PROTECTION

1. Treat, or isolate with protective material, and contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
2. Require workmen who will be walking on Roofing panels to wear clean, soft-soled work shoes that will not pick up stones or other abrasive material, which could cause damage or discoloration.
3. Protect Work of other Trades against damage and discoloration.

C. SURFACE PREPARATION

1. Clean and dry surfaces prior to applying sealant.

3.03 INSTALLATION

A. PANELS

1. Follow roof panel manufacturer's directions.
2. Install panel seams vertically.
3. Lap panels away from prevailing wind direction.
4. Do not stretch or compress panel side-lap interlocks.
5. Secure panels without warp or deflection.
6. Fully engage attachment clips and interlocking seams.
7. Extend roof panels over gutter openings or eave trim 2 inches, but do not restrict opportunity to clean gutters.
8. Remove any strippable protective film preceding panel installation.

Erection tolerance: panels shall be installed in a true and straight alignment.

B. ALLOWABLE ERECTION TOLERANCE

1. Maximum alignment variation: 1/4 inch in 40 feet.

C. FLASHING

1. Follow manufacturer's directions and architect approved shop drawings.
2. Overlap roof panels at least 6 inches.
3. Install flashings to allow for thermal movement.

D. CUTTING AND FITTING

1. Neat, square and true. Torch cutting is prohibited.
2. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.
3. Where necessary to saw-cut panels, debur and treat with galvanic paint.

3.04 CLEAN UP AND CLOSE OUT

A. PANEL DAMAGE AND FINISH SCRATCHES

1. Do not apply touch-up paint to damaged paint areas that involve minor scratches.
2. Panels or flashings that have severe paint and/or substrate damage shall be replaced as directed by the Architect's or Owner's representative.

Note: AEP Span does not recommend touch-up painting of damaged surfaces (minor scratches, etc.) due to fading and weathering differences of the touch-up paints in comparison to factory applied paint system.

B. CLEANING AND REPAIRING

1. At completion of each day's work and at work completion, sweep Panels, Flashings and Gutters clean. Do not allow fasteners, cuttings, filings or scraps to accumulate.
2. Remove debris from Project Site upon work completion or sooner, if directed.

END OF SECTION

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