

MANUFACTURER
CUSTOM-BILT METALS
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TITAN CAP SEAM Guide Specifications

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 076100-Sheet Metal Standing Seam Roofing-TITAN CAP SEAM

Note to Designer: This product is designed for roof slopes as low as 3:12. Please consult a Custom-Bilt Metals representative for slope design restrictions.

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 2004; revise if numbers differ from those used in Project Manual.

- A. Structural Metal Framing: Section 051000
- B. Structural Metal Roof and Floor Decking: Section 053000
- C. Metal fabrications: Section 055000
- D. Wood framing: Section 061000
- E. Glued- Laminated construction: Section 061800
- F. Thermal Protection: Section 072000
- G. Fire and Smoke Protection: Section 078000
- H. Sheet metal Gutters and Downspouts: Section 077123
- I. Joint Protection not specified herein: Section 079000
- J. Painting and coating not specified herein: Section 099000

1.03 PERFORMANCE REQUIREMENTS

A. TESTING AND CERTIFICATION

- 1. Wind Uplift: UL 580 test, Class 90 rated per
 - a. Minimum 24 gauge steel panels when installed over 5/8" plywood, with roof fastener clips 18" on center maximum.

Note: UL certification does not indicate panel suitability for actual project conditions. Custom-Bilt Metals recommends the application of Titan CAP SEAM over a solid substrate. See Section 1.04, Item D.1 for actual project uplift conditions.

Note: 12" or 20" panel widths meet the UL 580 requirements

1.04 SUBMITTALS

A. PRODUCT DATA

- 1. Submit manufacturer's technical product data, installation instructions and recommendations for each type of roofing required.

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B. SAMPLES

1. Submit Manufacturer's standard color Samples for Architect's/Engineer's selection.
2. Submit (2) 12" long full width Panel Samples showing shape and a representative color chip for Architect's/Engineer's acceptance.

C. SHOP DRAWINGS

1. Installer to submit complete shop drawings indicating thickness and dimensions of parts, fastenings and anchoring methods, details and locations of seams, transitions, and other provisions necessary to accommodate thermal expansion and contraction.
2. Shop drawings show methods of erection, elevations and plans of roof and wall panels, sections and details, anticipated loads, flashings, roof curbs, vents, sealants, substrates, underlayment materials and products (# 30 felt, as recommended by Custom-Bilt Metals, self-adhering rubberized membrane for barrel applications) interfaces with all materials not supplied and proposed identification of parts and their finishes.

D. DESIGN CRITERIA

1. Wind Uplift: Custom-Bilt Metals (manufacturer) shall provide an attachment schedule or supporting calculations to resist the following uplift loads:
 - a. Uplift loads as calculated using the 19____ Edition of the UBC with a _____ MPH basic wind speed, Exposure Factor _____, and importance Factor _____.
2. Drag Loading: The roof panel manufacturer shall provide an attachment schedule 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 metal roofs of comparable size and complexity, which reflect a quality installation.
 - b. Have been in business for a minimum period of three 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. 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.

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.

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 and distortion.
- 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 35-year coating performance warranty, as available for specified installation and environmental conditions. (Contact a Custom-Bilt Metals representative to determine actual warranty criteria.)

B. CONTRACTOR'S WARRANTY

1. 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.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Custom-Bilt Metals, 13940 Magnolia Ave., Chino, Ca. 91710, 800-886-2458, fax 909-664-1520. info@custombiltmetals.com
- B. PANEL DESIGNATION: Titan Cap Seam.
- 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: (Choose one)
 - a. Prefinished Zincalume/ Galvalume sheet made up of 55% aluminum, 1.6% silicon, and the balance zinc, or G-90 galvanized steel in 24 gauge, or 22gauge (non-standard) as described in ASTM specification A792.
 - b. Bare Zincalume/Galvalume conforming to ASTM A792, A250
 - c. Copper conforming to ASTM B370, [choose one] 16 oz. (standard), 20 oz. (non-standard).
 - d. Prefinished Aluminum made up of Alloy 3105/5005, Hardness (H14) in thickness .032 ASTM B 209. (non-standard)
2. Exterior Finish:
 - a. Ultra-Cool[®] (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 .
 - b. Finish to have a minimum solar reflectance of 25%.
 - c. Must meet the ENERGY STAR rating criteria for cool roofs.
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. Off-white backer.
 - b. Total Interior Dry Film Thickness: 0.50 mils.
4. Color: (choose one)
 - a. Manufacturer's standard selection of not less than 21 colors. All must meet Energy Star rating for Cool Roofs. Custom and premium colors available upon request at additional costs.

5. Configuration:
 - a. Narrow Batten Seam: Roof panels shall consist of snap on batten seams 1" high spaced 18 1/2" or 22 1/2" on center (choose one). (Other widths available as non-standard. Please contact Custom-Bilt Metals for details)
 - b. Provide panels in full length from ridge to eave when practical.

Note: A waviness commonly referred to as "oil canning" appears on flat metal surfaces. This is caused by steel mill tolerances and is a characteristic, not a defect, of panels manufactured from a light gauge metal "Oil canning" will not be accepted as cause for panel rejection.

B. ACCESSORIES

1. Clip:
 - a. Provide clips designed to allow panels to thermally expand and contract.
2. Fasteners:
 - a. Per manufacturer's recommendation
3. Sealant:
 - a. Gunnable Grade Caulking: Single component polyurethane caulk or Gunnable grade butyl.
 - b. Tape sealant: Butyl
4. Bearing Plate:
 - a. 22 gauge 4"x6" galvanized coated steel bearing plate. (Where required)

C. FLASHING

1. Material, gauge and finish to match panels. Do not use lead or copper.

D. FABRICATION

1. Fabricate panels in continuous one-piece lengths and fabricate flashings and accessories in longest practical lengths.
2. Roofing panels shall be factory or field formed as required.

PART 3 – EXECUTION

3.01 EXAMINATION

A. EXISTING CONDITIONS

1. Verify that members 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 any 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, any 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. Comply with roof panel manufacturer's instructions for assembly and installation.
2. Install in accordance with approved shop drawings.
3. Do not stretch or compress panel side-lap.
4. Secure panels without warp or deflection.
5. Fully engage interlocking seams.
6. Remove strippable protective film, if used, immediately preceding panel installation.

B. ALLOWABLE ERECTION TOLERANCE

1. Maximum substrate Variation: 1/4 inch in 20 feet.

C. FLASHING

1. Install in compliance with Manufacturer's installation instructions and Architect approved Shop Drawings.
2. Install flashings to allow for thermal movement.
3. Remove strippable protective film, if used, immediately preceding flashing installation.

D. CUTTING AND FITTING

1. Neat, square and true. Torch or saw cutting is prohibited.
2. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.

3.04 CLEAN UP AND CLOSE OUT

A. PANEL DAMAGE AND FINISH SCRATCHES

1. Touch-up paint should not be applied to damaged paint areas that involve minor scratches or abrasions.
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: Custom-Bilt Metals does not recommend using touch-up paint on damaged surfaces (minor scratches, etc.) due to the fading and weathering differences of the touch-up paints in comparison to factory applied paint systems.

B. CLEANING AND REPAIRING

1. At completion of each day's work, sweep the 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