

*Merchant & Evans, Inc.*

**1. Product Name**

ZIP-RIB® Structural Standing Seam Metal Roofing Systems

**2. Manufacturer**

Merchant & Evans, Inc.  
 308 Connecticut Dr.  
 Burlington, NJ 08016  
 (800) 257-6215  
 (609) 387-3033  
 Fax: (609) 387-4838  
 E-mail: [marketing@ziprib.com](mailto:marketing@ziprib.com)  
[www.ziprib.com](http://www.ziprib.com)

**3. Product Description**

**BASIC USE**

Merchant & Evans, Inc., has manufactured thousands of top-quality metal roof systems, which protect and beautify structures in some of the world's harshest environments. The ZIP-RIB® structural metal roofing and siding system is engineered to meet virtually any design requirement, and includes the attachment clips, accessories and tools needed for a complete installation. The Customform lines of architectural products include roofing, siding, fascia systems, mansards, soffits, copings, sheet metal trims and cornices to complete a total roofing system package.

**COMPOSITION & MATERIALS**

Products are manufactured from Alum-Zinc coated steel (AZ-50 and AZ-55), galvanized coated G90 steel or aluminum 3004 alloy. To meet specific requirements, panels can also be fabricated of the following:

- Copper and lead-coated copper
- Zinc
- Pre-weathered zinc
- Stainless steel

Other materials or alloys can be used on a project basis if supported by results of strength tests.

**TYPES**

ZIP-RIB Structural Standing Seam Roofing System  
 ZIP-RIB accommodates complex roof configurations and curved surfaces for use on open purlin, metal deck, wood substrate and other applications with slopes as low as 1/4"



ZIP-RIB® Open Canopy System

(6.4 mm) per foot. ZIP-RIB panels are secured to roof purlins or decking by concealed anchor clips. Once the panels are in place, the standing seam is then sealed with an electrically driven "Zipper Tool" seaming machine. These machine sealed "ribs" strengthen the panel structure and provide an impenetrable weather barrier by eliminating penetration of the roofing panels by the anchoring fasteners. The concealed clip attachments allow panel expansion and contraction while remaining resistive to wind uplift.

Factory and onsite roll-formed manufacturing is available.

**ZIP-RIB Canopy Systems**

ZIP-RIB canopy designs greatly reduce or eliminate the need for curved rafters and purlins in certain canopy applications. Free-span canopies can be designed to spans of 16' (5 m) without intermediate purlins. ZIP-RIB can be used on open purlin designs to 10' (3 m), enabling wider canopies with reduced framing requirements.

**Customform BD-1520 System**

Customform BD-1520 architectural roofing systems accommodate both longitudinal and lateral curvature, including domes, hips and barrel vaults, as well as tapered and straight-run projects. The panel side joint features an internal gutter system that provides a sealant-free, weathertight barrier. The joint snaps together for easy installation without exposed fasteners. BD-1520 panels are available for traditionally designed projects, retrofits and historic restoration applications.

**Customform Architectural Roof Systems**

Customform concealed-clip panels offer design flexibility for both new construction and retrofit applications. Snap-fit panels install easily, and a wide range of profiles is available to accommodate complex roof configurations, such as hips, soffits and gambrels. Customform roofing systems are available in 4 profiles:

- B1515R - Suitable for straight runs, conical tapers and barrel vault applications
- 114R - An economy integral batten and pan system
- 305 - An integral standing seam system with snap-fit side joint
- 306 - Narrow seam system suitable for straight runs, conical tapers and barrel vault applications

**SIZES**

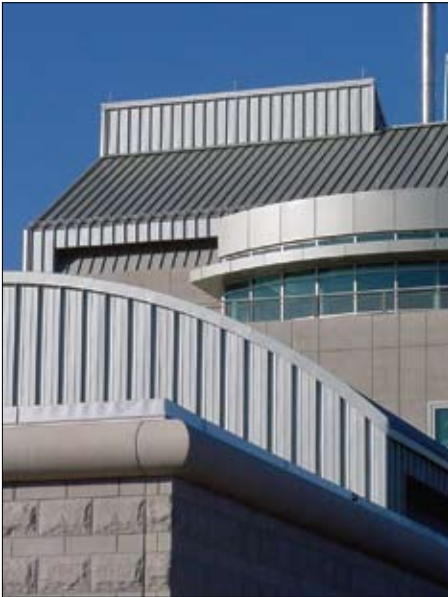
ZIP-RIB panels are furnished in standard 12" and 16" (305 and 406 mm) widths, as well as tapered sizes. Full length, ridge-to-eave manufacturing capability eliminates the need for panel end laps and their associated maintenance requirements. Components can be tailored to satisfy unique requirements.

Customform BD-1520 panels are available in a variety of dimensions. Contact the manufacturer for details.

**COLORS & FINISHES**

ZIP-RIB and Customform products are available in 16 standard colors. Consult manufacturer for color choices.

Products are also offered in custom colors, metallics and a choice of smooth or embossed



ZIP-RIB® Roofing and Siding Systems

textures. High-performance Kynar 500® and Hylar 5000® fluorocarbon resin-based coatings are offered on all systems. Multi-mil fluorocarbon systems are also available to meet project needs in harsh, coastal or corrosive environments. Other finish options include brushed "polished," anodized aluminum and mill finish.

**LIMITATIONS**

Certain projects require a technical review of specifications and architectural plans prior to quoting or supplying materials. These projects are those involving:

- Over 400 squares
- Lengths over 48' (15 m) requiring special shipping or manufacturing
- Spliced or end lapped panels
- Curved or tapered panels
- Export from U.S. (except Alaska and Hawaii)
- Weathertight warranties
- Engineered performance to meet code requirements

Information required for review includes:

- Roof plan - Lengths, hips, valleys, penetrations, knee joints
- Section details - Slopes, perimeter conditions
- Supports - Materials, spacings, insulation (specific type)
- Specifications - Uplift and down load, codes, performance standards, warranty, scope of work
- Special conditions - Snow, snowguards, harsh environment, fumes, delivery dates

Aluminum is the recommended substrate material for projects located in coastal environments. Projects manufactured from steel may have exclusions in the material warranties if exposed to salt spray or highly corrosive environmental conditions. Consult Merchant & Evans for project specific requirements.

Corrosion resistant, zinc plated, fluorocarbon coated or stainless steel fasteners must be used to fasten the panel clips to the building substrate.

ZIP-RIB panels do not require underlayment to maintain weathertightness. However, waterproof underlayments are required for projects with difficult and complex flashing details.

When metal roofing is installed over insulation in cold climates, a good continuous vapor retarder is recommended on the warm side of the insulation. Underlayment on top of insulation should be vapor permeable but water repellent.

In extreme climate areas and where deep snow or ice dams can force water through unsealed metal joints, ice and water shields must be installed at all overhangs and 3' (914 mm) above the point connecting the structure's exterior wall.

When snow guards are utilized, the ZIP-RIB roof panels must be secured against sliding from the structure due to the weight of retained snow.

**4. Technical Data**

**APPLICABLE STANDARDS**

Load span tables are based on physical load tests that simulate actual service conditions. Appropriate safety factors are included in load span tables. All panel tests are supervised and certified by reputable independent testing companies. Copies of test procedures and results are available upon request.

American Architectural Manufacturers Association (AAMA)

- AAMA 501 Methods of Test for Exterior Walls
- AAMA 501.1 (Formerly NAAM TM-1) Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure

ASTM International

- ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus
- ASTM D522 Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
- ASTM D523 Standard Test Method for Specular Gloss
- ASTM D968 Standard Test Methods for



Tapered ZIP-RIB® and Customform Flashings

Abrasion Resistance of Organic Coatings by Falling Abrasive

- ASTM D1308 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
- ASTM D2244 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- ASTM D2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
- ASTM D2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- ASTM D3359 Standard Test Methods for Measuring Adhesion by Tape Test
- ASTM D3361 Standard Practice for Unfiltered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
- ASTM D3363 Standard Test Method for Film Hardness by Pencil Test
- ASTM D4138 Standard Test Methods for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means
- ASTM D4145 Standard Test Method for Coating Flexibility of Prepainted Sheet
- ASTM D4214 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E1592 Standard Test Method for



ZIP-RIB® Concave/Convex Curved Design with Trim

Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference

- ASTM E1646/E331 Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference
- ASTM E1680/E283 Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems
- ASTM E2140 Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head

**APPROVALS**

- FM Global (Factory Mutual) - FM 4471 Approval Standard for Class I Panel Roofs
- New York City Materials, Equipment and Acceptance (MEA) Division - Metal roof covering system classified as Class A
- Miami-Dade County, Florida, Notice of Acceptance
- US Army Corps of Engineers (USACE)

Southern Building Code Congress International - SSTD 10-99 Standard for Hurricane Resistant Construction

Underwriters Laboratories, Inc. (UL)

- UL Class 90 static uplift-pressure resistance rating
- UL Class A fire rating
- ZIP-RIB metal deck roof panel assemblies have been tested and approved under UL category CETW. Contact the manufacturer for a

complete list of UL design and assembly numbers.

Contact Merchant & Evans, Inc., for information about specific approvals by code bodies and other industry entities.

**5. Installation**

ZIP-RIB installation in the United States is completed only by experienced contractor-erectors who have been authorized by ZIP-RIB manufacturers. Training for overseas projects is available on a job-by-job basis.

Panels are manufactured at the factory or can be roll formed at the jobsite. However, several factors must be considered if onsite roll forming is required:

- Roll form equipment schedule
- Jobsite location
- Coil fab mill production schedule
- Weather

Merchant & Evans, Inc., must have a tentative schedule 8 weeks prior to rolling, and this schedule must be confirmed 4 weeks before roll forming begins. Job modifications initiated by the customer after this time may necessitate schedule revisions resulting in delays.

**PREPARATORY WORK**

**Handling**

Upon receipt, confirm that all materials are in manufacturer's original, unopened, undamaged containers with identification labels intact. Check for broken battens and tie-

down damage between battens. Inspect for diesel smoke stain.

**Unloading**

Limit space between lift points to 30' (9 m) and overhangs to 15' (5 m). Use slats under slings, avoid extending forks beyond bundles and take measures to protect bottom panels.

**Storage**

If possible, unload bundles directly onto the installation area of the roof. Bundles must be braced if they will be placed on steep slopes and tied down to prevent wind damage if they will be left overnight.

If ground storage cannot be avoided, place bundles so that panels can be removed in the sequence they are needed. Sharp bends or dips that can pond water must be prevented, with bundles covered and sloped for drainage, and ends vented.

Detailed receiving, inspection, storage and onsite roll forming information is available from the Merchant & Evans website at [www.ziprib.com](http://www.ziprib.com).

**Preinstallation Procedures**

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

**METHODS**

Check installation layout and inspect for uneven surfaces. To install the first panel, start with gable clips. The female hook rib of the first panel must be zipped or hand crimped ahead of time to fit loosely in the gable clip to allow for thermal movement. The gable clips also serve as attachment parts for gable caps of flashing. Flashing must not be fastened to the ZIP-RIB panels because of thermal movement of the panels relative to the roof. Set panels to align with gable clip or previous panel and check benchmarks every 10' - 20' (3 - 6 m). Insert clips over male rib and secure to structure. Zip seams closed, fix panels at the fix point and install flashing for penetrations as adjoining panels are installed. Secure the edge of the last panel installed each evening and do not leave panels unzipped overnight. At a minimum, panels must be hand crimped at each clip.

Detailed installation instructions are available online at [www.ziprib.com](http://www.ziprib.com).

**BUILDING CODES**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions as specified.



BD-1520 Dome System

## 6. Availability & Cost

### AVAILABILITY

Contact the manufacturer for information on local availability. Projects outside of the United States will require a technical review of specifications and architectural plans prior to quoting.

### COST

Cost information may be obtained from the manufacturer.

## 7. Warranty

All Merchant & Evans metal products are warrantable against defects in material and workmanship as delivered to the erector. Panels that are properly installed on an approved project by a certified installer/erector may be warranted for structural integrity, finish performance and weathertightness to meet specific project specifications. Kynar 500® and Hylar 5000® fluorocarbon resin-based coatings are fully warranted against excessive chalking, fading, chipping and blistering when used on qualifying applications. Complete warranty terms and conditions are available from the manufacturer. For details, consult Merchant & Evans, Inc.

## 8. Maintenance

ZIP-RIB is virtually maintenance free. However, Merchant & Evans recommends a yearly inspection to ensure free drainage and proper functioning of flashing.

## 9. Technical Services

Merchant & Evans offers technical assistance on a wide range of and application issues and maintains a network of certified, factory trained installation professionals. Detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision are available by contacting Merchant & Evans, Inc.

## 10. Filing Systems

- Reed First Source®
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.