*Specifiers: Click on the ¶ icon in the WORD toolbar to reveal detailed instructions*

*(****Specifier Note****: The purpose of this guide specification is to assist the specifier in correctly specifying aluminum siding products and execution. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact a Ply Gem Siding Group Product Representative to assist in appropriate product selections. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file.*

References have been made within the text of the specification to MasterFormat Section numbers and titles, specifier needs to coordinate these numbers and titles with sections included for the specific project. Brackets [ ]; “AND/OR”; and “OR” have been used to indicate when a selection is required.

**SECTION 07 71 23**

**MANUFACTURED GUTTERS AND DOWNSPOUTS**

Variform Gutters and Downspouts

by Ply Gem

1. GENERAL
	* + 1. SECTION INCLUDES
				1. Aluminum gutters
				2. Aluminum downspouts
				3. Accessories
			2. SUBMITTALS

*(****Specifier Note****: DELETE Submittal Procedures paragraph when not required. Coordinate requirements with Division 01, Section 01 33 00 – Submittal Procedures.)*

* + - * 1. Refer to Section [01 33 00 Submittal Procedures] [insert section number and title].
				2. Product Data: Submit manufacturer current technical literature for each type of product.
				3. Samples: Provide nominal 3 x 5 inch sample of each color indicated for aluminum gutters, downspouts and accessories.

*(****Specifier Note****: DELETE LEED submittal requirements when project is not pursuing LEED certification. Credits are for LEED for Homes version 2008. Recycled content products must contain a minimum of 25% postconsumer recycled content. Veriform Aluminum Gutters, and downspouts contain more than 25% postconsumer recycled content.)*

* + - * 1. LEED Submittals:

Material and Resources (MR)

Product Certificates for Credit MR 2.2: For Environmentally Preferable Products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content.

* + - * 1. Quality Assurance Submittals

Manufacturer Instructions: Provide manufacturer’s written instructions including proper material storage, material handling, installation sequence, and attachment methods.

* + - 1. QUALITY ASSURANCE
				1. Manufacturer Qualifications: Manufacturer shall have a minimum of five (5) years experience in the production of aluminum gutters and downspouts.
			2. DELIVERY, STORAGE AND HANDLING

*(****Specifier Note****: DELETE Product Requirement paragraph when not required. Coordinate requirements with Division 01, Section 01 60 00 – Product Requirements.)*

* + - * 1. Refer to Section [01 60 00 Product Requirements] [insert section number and title].
				2. Deliver materials and components in manufacturer’s original, unopened, undamaged packaging with identification labels intact.
				3. Store siding materials on dry, level, firm, and clean surface.
			1. WARRANTY
				1. [Limited Warranty – Sectional Gutters and Downspouts:

*(****Specifier Note****: Limited warranty is transferable one time between property owners for properties owned by an individual.)*

*(****Specifier Note****: Warranty period for properties owned by an individual is “Lifetime”. For properties owned by a corporation, condominium co-operative, unincorporated association, school, church, government, or public entity warranty period is 50 years.)*

Manufacturing Defects: Standard form in which manufacturer agrees to repair or replace items that fail by blistering, checks, crazes, flakes, peels or weathers unevenly due to a defect in manufacturing within warranty period from date of original installation.

Warranty Period: [Lifetime] [50 years].]

*[OR]*

* + - * 1. [Limited Warranty – Gutter Coil:

Manufacturing Defects: Standard form in which manufacturer agrees to repair or replace items that fail by blistering, checks, crazes, flakes, peels or weathers unevenly due to a defect in manufacturing within warranty period from date of original installation.

Warranty Period: 20 years.]

* + - * 1. Gutter Protection Warranty (Leaf Relief Warranty): Standard form in which the manufacturer warrants to the end user that gutter and downspouts, when installed in the manner specified by the manufacturer, will not clog and overflow as a result of the interior of the gutter or downspout filling with debris, such as leaves, twigs, needles or seeds.

Warranty Period: Ten (10) years from date of Substantial Completion.

1. PRODUCTS
	* + 1. MANUFACTURER
				1. Variform; Ply Gem Siding Group (800-788-1964) (www.Variform.com); 2600 Grand Boulevard, Suite 900; Kansas City, Missouri 64108.

Product: Variform “Rainware” Aluminum Gutters and Downspouts.

*(****Specifier Note****: DELETE or COORDINATE Substitution Limitations paragraph if substitutions, are addressed in Division 01, Section 01 25 00 – Substitution Procedures.)*

* + - * 1. Substitutions:

[Not Permitted.]

*[OR]*

[Requests for substitutions will be considered in accordance with provisions of [Section 01 60 00 – Product Requirements] [insert section number and title].]

* + - 1. MATERIALS
				1. General:

Formed and coated aluminum coil stock; 3105 H24 aluminum.

Gutter Material Thickness: [0.027] [0.032]

Downspout Material Thickness: 0.019

* + - 1. ALUMINUM GUTTERS

*(****Specifier Note****: Coil stock material is available in 26 colors; 13 enhanced colors for coils finished on two sides. Sectional gutters are available in 9 colors. Enhanced colors require longer lead times to obtain and have limited accessories, accessories must be shop painted to match enhanced colors.)*

* + - * 1. Gutter Coil:

Gutter Size: [5] [6] inches.

Profile: Ogee.

Texture: Smooth

Finish: 2 coat acrylic; applied to [one-side] [two-sides].

Color: [As selected from manufacturer’s full color line] [Insert Color selection] [As indicated on Drawings].

*[OR]*

*(****Specifier Note****: 6 inch gutter size only available in 21 and 37 foot lengths.)*

* + - * 1. Accessories:

Gutter Support:

Spike and Ferrule: [7] [8] inch spike; white finish.

*[OR]*

Zip hanger; Mill finish.

*[OR]*

Combination strap hanger; Mill finish.

*[OR]*

Snap-in hanger; Mill finish.

*[OR]*

Snug-fit Hanger; Mill finish.

*[OR]*

Combination Hanger; Mill finish.

*[OR]*

Strap Hanger; Mill finish.

*[OR]*

Bar Hanger; Mill finish.

*[OR]*

Bar Hanger; Mill finish.

*[OR]*

Roof Hanger; Mill finish.

*(****Specifier Note****: If Gutter Protection System DELETED, delete Gutter Protection Warranty in Part 1.)*

Gutter Protection System: Mill finish aluminum; 0.019 inch thick perforated gutter protection; 10 feet long. Size and shape as required for gutter size, style and gutter support. Provide factory fabricated inside and outside corners.

Miscellaneous Components: Provide all necessary inside and outside corners, corner reinforcing, eave tubes, and end caps required for a complete installation.

* + - 1. ALUMINUM DOWNSPOUTS
				1. Coil Stock:

Downspout Size: [2 by 3] [3 by 4] inches.

Profile: Rectangular

Texture: Corrugated

Finish: 2 coat acrylic.

Color: [As selected from manufacturer’s full color line] [Insert Color selection] [Match Gutters] [As indicated on Drawings].

*[OR]*

* + - * 1. Sectional Downspouts:

Downspout Size: [2 by 3] [3 by 4] inches.

Profile: Rectangular

Texture: Corrugated

Length: [8] [10] feet.

Finish: 2 coat acrylic.

Color: [As selected from manufacturer’s full color line] [Insert Color selection] [Match Gutters] [As indicated on Drawings].

* + - * 1. Accessories:

Downspout Support: Concealed bracket; mill finish.

*[OR]*

Downspout Support:

Profile: [Exposed strap] [Downspout clip]

Color: [As selected from manufacturer’s full color line] [Insert Color selection] [Match Downspout] [As indicated on Drawings].

Miscellaneous components: Provide all necessary elbows, downspout offset sections, and pop rivets as required for a complete installation. All miscellaneous components shall match downspouts.

* + - 1. ACCESSORIES
				1. Fasteners:

[Stainless steel] [Aluminum] fasteners, as recommended by manufacturer, of sufficient length to penetrate minimum 1 inch into substrate.

Size: As recommended by manufacturer.

* + - * 1. Flashing: Provide 0.019 inch thick aluminum roof apron and fascia apron flashing; color [to match gutters] [shall be [insert color]] [As selected from manufacturer’s full color line]

*[OR]*

* + - * 1. Flashing: Provide aluminum flashing complying with Section [07 62 00 Sheet Metal Flashing and Trim] [insert section number and title] at roof apron, fascia apron, and where indicated. Flashing color [to match gutters] [shall be [insert color]]
				2. Sealants: Mildew-Resistant Joint Sealant as recommended by manufacturer at gutter joints. Color shall be [white] [mill finish].
				3. Splash Pans: Fabricate from the following. Size and shape as indicated on Drawings.

Copper: [16 ounce per square foot] [insert weight]

*[OR]*

Aluminum: [0.040 inch] [insert thickness] thick.

*[OR]*

Stainless Steel: [0.019 inch] [insert thickness] thick.

*[OR]*

Pre-cast Concrete: Concrete shall be 3,000 psi at 28 days with minimum of 5 percent air entrainment.

1. EXECUTION
	* + 1. PREPARATION
				1. Verify that substrates are in place and ready for installation of gutters and downspouts.

*(****Specifier Note****: EDIT installation article deleting specific installation paragraphs not used on Project.)*

* + - 1. INSTALLATION
				1. General: Install gutters and downspouts per manufacturer’s written installation instructions. Install Work securely in place and provide for expansion and contraction of components using lapped and sealed joints

Do not install damaged components.

Separate dissimilar metals to prevent galvanic action through the use of bituminous coating or other permanent separation recommended by SMACNA.

Space expansion joints in gutters at a maximum of 50 foot centers

Rivet joints where required for strength, exposed rivet shall match gutter or downspout color.

Torch cutting of components is not allowed.

*(****Specifier Note****: DELETE roof apron flashing paragraph if flashings are provided under the roofing section.)*

* + - * 1. Install roof apron flashings at roof edge conditions as indicated on Drawings.
				2. Gutters:

Install gutter supports at no more than [36 inches] [insert spacing] on center.

Slope gutters evenly to downspouts; provide end caps at gutter ends and seal watertight per manufacturer’s instructions.

Install eave tubes at all downspout locations, seal watertight.

Apply joint sealants at gutter joints per manufacturer’s installation instructions and to meet the requirements of Section [07 92 00 – Joint Sealants] [Insert section number and title].

Install gutter protection per manufacturer’s instructions; provide factory fabricated corners at all inside and outside corners.

* + - * 1. Downspouts:

Install downspouts, provide elbows and offsets, and secure downspouts to wall construction using downspout supports spaced no more than [10 feet] [insert spacing] on center. Maximum distance of downspout support from top or bottom of downspout shall be 2 feet. Provide 45 degree elbow at bottom of downspout to direct water away from wall surface or foundation.

Where downspout connects to building perimeter drainage system, lap downspout and perimeter drainage pipe a minimum of 3 inches. At concrete perimeter drainage pipe, grout downspout in place, slope grout to shed rain away from downspout.

*(****Specifier Note****: Install splash pans under downspouts draining onto other roof surfaces.]*

Install [pre-cast concrete] [formed metal] splash pans under downspouts.

* + - 1. CLEANING AND PROTECTION
				1. Remove damaged, defective or improperly installed materials. Replace with new materials installed per requirements of this section.
				2. Clean finished surfaces according to manufacturer’s written instructions; maintain clean condition until Final Completion.

END OF SECTION