Dri-Design November, 2023

Corporate Offices: 12480 Superior Court, Holland, MI 49424; Mailing: P.O. Box 1286, Holland, MI 49422

P: (616) 355-2970 Website: www.dri-design.com.

Specifier Note: This product guide specification is written according to the Construction Specifications Institute (CSI) current versions of MasterFormat, SectionFormat and PageFormat and as described in various Practice Guides.

Use this specification as the basis for developing a project specification.

Layout of Header/Footer is based on PageFormat, edit as necessary in compliance with project requirements.

Section must be carefully reviewed and edited by Architect/Design Professional to meet requirements of project and local building code.

Coordinate this section with Drawings and other specification sections; coordinate these numbers and titles with sections included for specific project.

Brackets **[\_\_\_\_\_]**, **and/or**, **[<\_\_\_\_\_>]** and “or” are used to indicate when a selection is required.

Windows 2010 - Upon completion of section editing, you may turn-off “Specifier Notes” as follows; click on “File” then on “Options” then “Display” and remove check mark for “Hidden text” in two locations.

HIDDEN TEXT: Specifier Notes may be turned on throughout section as follows; click on “File” then on “Options” then “Display” and add check mark for “Hidden text” in two locations.

SECTION 07 4619.10

STEEL SIDING EMULATING NATURAL WOOD

Specifier Note: This section covers Dri-Design Steel Siding Emulating Natural Wood. Consult with Dri-Design for technical assistance in editing this section for the specific project requirements.

# - GENERAL

## SECTION INCLUDES

### Steel siding emulating the appearance of natural wood with related trim and accessories.

Specifier Note: Edit the following list of related requirements for the project, and coordinate for consistent use of section numbers and titles. List any other sections with work directly related to work of this section.

## RELATED REQUIREMENTS

### Section 06 1000 – Rough Carpentry: Plywood substrate wall sheathing.

### Section 07 0543 – Cladding Support Systems: Supporting steel subgirts.

### Section 07 2100 – Thermal Insulation: Insulation on exterior wall.

### Section 07 2500 – Weather Barriers: Weather barrier required as part of steel siding substrate assembly.

### Section 07 6200 – Sheet Metal Flashing and Trim: Field formed flashings and other sheet metal work.

### Section 07 9200 – Joint Sealants: Perimeter sealant.

## DEFINITIONS

### Steel Siding Assembly: Steel siding, attachment system components, miscellaneous support framing, and accessories necessary for a complete steel siding system.

Specifier Note: Edit the following list of reference standards to only those being used for project.

## REFERENCE STANDARDS

### AAMA - American Architectural Manufacturers Association (www.aamanet.org).

#### AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2015.

#### AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

### AISI – American Iron and Steel Institute (www.shop.steel.org).

#### AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016.

### ASTM International - American Society for Testing and Materials (www.astm.org).

#### ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron AlloyCoated (Galvannealed) by the Hot-Dip Process; 2023.

#### ASTM C754 - [Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products](http://www.astm.org/Standards/C754.htm); 2020.

#### ASTM D2244 – Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2022.

#### ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2007(2015).

### CSA Group – Canadian Standards Association (www.csagroup.org).

#### CSA S136 - North American specification for the design of cold-formed steel structural members; 2021

### LEED – Leadership in Energy and Environmental Design, U.S. Green Building Council (www.usgbc.org/leed).

### SMACNA – Sheet Metal and Air Conditioning Contractors’ National Association, Inc. (www.smacna.org).

#### Architectural Sheet Metal Manual; 2012.

### Voluntary Product Standard; Department of Commerce (DOC) and National Institute of Standards and Technology (NIST) (www.apawood.org).

#### PS 1 – Structural Plywood; 2019(Revised 2020).

## ADMINISTRATIVE REQUIREMENTS

### Coordination: Coordinate siding assemblies with rain drainage, flashing, trim, stud back-up, soffits, and other adjoining work.

Specifier Note: Review Preinstallation meeting information and confirm that this Work is extensive enough to justify this meeting and for project specific meeting requirements.

### Preinstallation Meeting: Schedule **[one week] [two weeks]** or **[<insert time>]** prior to start of this work.

#### Attendees:

##### Owner.

##### Architect.

##### Installer.

##### Siding manufacturer's representative.

##### Structural support installer’s.

##### Installer’s whose work interfaces with or affects siding including installers of doors, windows, and louvers.

#### Review and finalize construction schedule.

#### Verify availability of materials, installer's personnel, equipment, and facilities needed to maintain schedule.

#### Review means and methods related to installation, including manufacturer's written instructions.

#### Examine support conditions for compliance with requirements, including alignment and attachment to structural members.

#### Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affects this Work.

#### Review temporary protection requirements for during and after installation of this Work.

Specifier Note: Edit the following list of submittal requirements and provide only those required for project, and verify section number and title for project submittal procedure requirements.

## SUBMITTALS

### See Section 01 3000 – Administrative Requirements, for submittal procedures.

### Product Data: Submit for each type of product indicated, include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of steel siding and accessory.

### Shop Drawings: Submit fabrication and installation layouts of steel siding; including details of edge conditions, joints, profiles, corners, anchorages, attachment system, trim, flashings, closures, accessories, and special details.

#### Provide details of following items at full scale.

##### Manufacturer’s standard sheet metal trims.

##### Components of steel siding construction, anchorage methods, and hardware.

### Coordination Drawings: Submit exterior elevations, drawn to scale, that have the following items shown and coordinated with each other, using input from installers of the following items:

Specifier Note: Revise following paragraphs to suit Project.

#### Steel siding and attachments.

#### Girts.

#### Wall-mounted items including doors, windows, louvers, and lighting fixtures.

#### Penetrations of wall by pipes and utilities.

### Samples: Submit two of each type of exposed finish required, and prepared on samples of size as follows:

#### Steel Siding: At least 12 inches long.

#### Color Samples: At least 2-1/2 by 4-7/8 inch chips or 12 inch long sample cut from finished siding product.

#### Provide samples approved by Consultant prior to fabrication.

### Maintenance Data: Submit maintenance and cleaning instructions for steel siding systems to include in maintenance manuals.

Specifier Note: Submit copy of warranty to provide Architect and/or Owner the opportunity to verify warranty coverage complies with necessary requirements.

### Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

Specifier Note: Review Sustainable Design information or LEED requirements and coordinate with other Division 01 sustainable or LEED requirements for project.

### Sustainable Design Submittals **[LEED Reports]**:

#### Submit documentation from manufacturer for amounts of pre-consumer and post-consumer recycled content for products specified, and include statement indicating costs for materials having recycled content.

#### Submit documentation providing location of manufacturing.

## QUALITY ASSURANCE

### Manufacturer Qualifications:

#### Company specializing in manufacturing products specified in this section with at least five years of documented experience.

#### Manufacturer to be registered with a Program Operator with a Certified, Environmental Product Declaration, in conformance with ISO 14025, for Insulated Metal Panels.

### Installer: Company specializing in performing work of this section and approved by manufacturer.

#### Install system in strict compliance with manufacturer’s installation instructions.

### Source Limitations: Obtain each type of steel siding from single source and from single manufacturer.

Specifier Note: Review Mock-Up information and coordinate that it is in compliance with project requirements.

## MOCK-UPS

### Mock-ups: Provide mock-ups to verify selections made under sample submittals and to demonstrate aesthetic effects and to establish quality standards for fabrication and installation.

Specifier Note: Edit following sub-paragraph for large scale mock-up, indicate portion of building to represent mock-up on Drawings, or indicate mock-up as separate element on Drawings in compliance with project requirements.

#### Build mock-up of typical steel siding assembly **[as shown on Drawings]** or **[<insert size>]**, including **[corner,]** **[soffits,]** supports, attachments, and accessories.

##### Include at least four sheets of steel siding to represent a four-way siding joint and showing full thickness.

Specifier Note: Edit following sub-paragraph as required for water spray test and coordinate with PART 3 Field Quality Control requirements in compliance with project requirements.

#### Water Spray Test: Conduct water-spray test of mock-up steel siding assembly, test water penetration in accordance with AAMA 501.2.

#### Approval of mock-ups does not constitute approval of deviation from Contract Documents within mock-ups unless these deviations are approved by Architect in writing.

#### Subject to compliance with requirements, approved mock-ups **[may]** or **[may not]** become part of completed Work if undisturbed upon Date of Substantial Completion.

## DELIVERY, STORAGE, AND HANDLING

### Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

### Storage and Handling: Store materials in clean, dry, interior area in accordance with manufacturer’s instructions.

### Deliver steel siding, components, and other manufactured items without damage or deformation.

### Protect steel siding during transportation, handling, and installation from weather, excessive temperatures and construction operations.

### Handle steel siding in strict compliance with manufacturer’s instructions and recommendations, and in a manner to prevent bending, warping, twisting, and surface damage.

### Store steel siding covered with suitable weather tight and ventilated covering.

#### Provide storage of steel siding to ensure dryness, with positive slope for drainage of moisture.

#### Do not store steel siding in contact with other materials that might cause staining, denting, or other surface damage.

### Remove strippable protective plastic film from steel siding prior to installation.

## SITE CONDITIONS

### Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of this Work to be performed according to manufacturer's installation instructions and warranty requirements.

### Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before steel siding fabrication and indicate measurements on Shop Drawings.

#### Coordinate with construction schedule.

## WARRANTY

### See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

### Steel Siding Warranty: Provide steel siding manufacturer’s written warranty, agreeing to cover failure of factory-applied exterior finish within the warranty period indicated.

#### Finish Warranty Period: Values below are based on normal environments and exclude any aggressive atmospheric conditions.

Specifier Note: Select only one of the following Coating Warranty’s based on the selected coatings to be used on project steel siding.

##### Expressence Coating Warranty; Kynar 70% Polyvinylidene Fluoride (PVDF): Complies with AAMA 2605 and coating will not exhibit cracking, chipping or loss of adhesion for 40 year period to an extent that is apparent on ordinary outdoor visual observation from date steel siding is installed.

###### Chalk Resistance: Complies with up to No. 8 rating for 30 year period of exposure, in accordance with ASTM D4214.

###### Print Appearance: To remain intact during first 20 years of exposure, with any color changes to be uniform.

###### Minute fracturing that may occur during proper fabrication of siding, is not covered by Warranty and substrate corrosion is also not covered by Warranty.

##### Weather XL Coating Warranty, Silicone Modified Polyester (SMP): Coating will not exhibit cracking, chipping or loss of adhesion for 40 year period from date steel siding is installed.

###### Chalk Resistance: Complies with up to No. 8 rating for 30 year period of exposure, in accordance with ASTM D4214.

###### Color Change: Will not change more than five Hunter ΔE units in accordance with ASTM D2244 for 30 year period from date steel siding is installed.

#

# - PRODUCTS

## SUPPLIERS

### Dri-Design – EN-V “Engineered for Value” Bellara Steel Siding Emulating Natural Wood System.

#### Address: 12480 Superior Court, Holland, Michigan 49424.

#### Mailing Address: P.O. Box 1286, Holland, Michigan 49422.

#### Phone: (616) 355-2970; Website: www.en-v.com.

Specifier Note: Edit the following Performance Requirements in compliance with project requirements.

## PERFORMANCE REQUIREMENTS

### Steel Siding Emulating Natural Wood Assemblies: Comply with performance requirements in accordance with **[AISI S100]** and/or **[CSA S136]** without failure due to defective manufacturing, fabrication, installation, or other construction defects.

### Provide for expansion and contraction of component materials of steel siding assembly with exterior surface temperature range of minus 30 degrees F (minus 31 degrees C) to 140 degrees F (60 degrees C) without causing buckling, failure of joint seals, undue stress on fasteners or other negative effects.

### Provide steel siding assembly that will comply with the following requirements without permanent deformation, damage, or system failure.

#### Provide for wind load deflection of steel siding assembly that does not exceed L/180 of siding span.

#### Provide expansion joints within steel siding assembly, and between steel siding assembly and building structure to accommodate for movement.

#### Ensure that steel siding assemblies dead loads, ice loads, wind loads, and potential combinations of these comply with local building code requirements.

#### Provide for positive drainage of any condensation that develops within steel siding assembly to the exterior of building envelope or a drainage outlet.

## STEEL SIDING

### Prefinished Steel Siding: Concealed fastener steel siding **[and soffit]** system for exterior application with required trim and other accessories.

#### Metal: Zinc coated galvanized steel sheet complying with ASTM A653/A653M requirements with a minimum metallic coating designation of G90 (Z275).

#### Preformed Metal Thickness: **[24 gauge, 0.0239 inch (0.61 mm)]** or **[26 gauge, 0.0179 inch (0.45 mm)]** nominal thickness.

#### Steel Siding Depth: 9/16 inch (15 mm) overall depth.

#### Steel Siding Length: 12 feet (3.658 m) long.

#### Steel Siding Exposed Width:

##### Plank 90: 3-5/8 inches (93 mm) exposed width.

##### Plank 135: 5-5/16 inches (135 mm) exposed width.

##### Plank 200: 7-13/16 inches (199 mm) exposed width.

#### Steel Siding Overall Width:

##### Plank 90: 5-5/8 inches (143 mm) overall width.

##### Plank 135: 7-5/16 inches (186 mm) overall width.

##### Plank 200: 9-13/16 inches (249 mm) overall width.

#### Perforated Pattern for Fastener Placement: 3/16 inch (4.76 mm) high by 5/8 inch (16 mm) wide at 2 inches (50.8 mm) on center.

#### Siding Pieces per Carton: Ten.

### Steel Siding Plank Package: Granular details within each wood grain style are digitally composited providing five unique plank designs for each style package.

Specifier Note: Select finish from the following list of available materials in compliance with project requirements.

### Coil Coatings/Finishes:

#### Wood Grain Print (Polyvinylidene Fluoride PVDF Coating):

##### Style: **[Warm Rosewood, 18-3271] [Dark Rosewood, 18-3280] [Charred Circle Sawn, 18-3267] [Whitewashed Circle Sawn, 18-3269] [Deep Walnut, 18-2768] [Mountain Cedar, 18-2772] [River Rock Grey, 18-2770] [Natural Maple, 18-2991] [Brindle Barnboard, 18-3277] [Smoke Barnboard, 18-3275]** or **[Obsidian Barnboard, 18-3273]**.

#### Wood Grain Print (Silicone Modified Polyester SMP Coating):

##### Style: **[River Rock Grey, 18-0254] [Natural Maple, 18-0255] [Warm Rosewood, 18-0191] [Smoke Barnwood, 18-0257]** or **[Brindle Barnboard, 18-0270]**.

#### Bellara Signature Matt/weather XL Crinkle (Silicone Modified Polyester SMP Coating):

##### Style: **[Graphite, 9821] [Espresso, 10276]** or **[Ebony, 9822]**.

#### Bellara Signature/weather XL (Silicone Modified Polyester SMP Coating:

##### Style: **[Stone Grey, 56071] [Regent Grey, 56082]** or **[Cambridge White, 56161]**.

### Fabricate and finish steel siding within manufacturer’s facilities and fulfill indicated performance requirements demonstrated by laboratory testing.

#### Comply with indicated profiles and with dimensional and structural requirements.

Specifier Note: Select assembly components from the following list in compliance with project requirements.

## ASSEMBLY

### Components: Provide components as required for a complete assembly including trim, corner units, flashings, drip edge, moldings, starter strips, and similar items that match material and finish of steel siding unless otherwise indicated.

### Fasteners: Provide fasteners in center of slots provided along the fastening track of steel siding at 16 inches (406 mm) on center, maximum.

#### Wood Sheathing Substrate: Provide No. 8 self-tapping pan washer head screw, fully threaded to wood supports and 1 inch (25.4 mm) long, minimum.

#### Steel Subgirt Substrate: Provide No. 8 self-drilling, No. 2 drill point pan head screws with length of at least 3 threads past steel support material.

### Wood Sheathing Substrate: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.

#### Refer to Drawings and see Section 06 1000 for additional information.

### Steel Subgirt Substrate: Provide galvanized steel sheet at least 18 gauge, 0.048 inch (1.21 mm) thick in accordance with ASTM A653/A653M, Grade 33 (230) with G90 (Z275) zinc-coating.

#### See Section 07 0543 for additional information.

### Insulation: **[Semi-rigid]** or **[Rigid]** insulation, see Section 07 2100 for additional information.

### Weather Barrier: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.

#### See Section 07 2500 for additional information.

### Sealants: See Section 07 9200 for additional information.

### Flashing: See Section 07 6200 for additional information.

## FINISHES

### Polyvinylidene Fluoride (PVDF) Coating Finish: Color as indicated from manufacturer’s range.

#### Product: Sherwin Williams Expressence.

### Silicone Modified Polyester (SMP) Coating Finish: Color as indicated from manufacturer’s range.

#### Product: Weather XL by Sherwin-William.

#  - EXECUTION

## EXAMINATION

### Examine substrates, and Work areas and conditions with Installer present for compliance with requirements for installation tolerances, steel siding supports, and other conditions affecting performance of this Work.

### Examine wall framing to verify that girts, angles, channels, studs, and other structural steel siding support members and anchorage have been installed within alignment tolerances required by steel siding manufacturer.

### Verify that weather barrier has been installed over sheathing or substrate to prevent air infiltration or water penetration.

### Examine rough-in for components and systems penetrating steel siding to coordinate actual penetration locations relative to steel siding joint locations prior to installation.

### Proceed with installation only after unsatisfactory conditions have been corrected.

## PREPARATION

### Miscellaneous Framing: Install subgirt, base angles, sills, furring, and other wall panel support members and provide anchorage in accordance with ASTM C754 for gypsum panel type substrates and steel siding manufacturer’s installation instructions.

Specifier Note: Edit the following in compliance with project requirements.

## INSTALLATION

### Install steel siding in accordance with manufacturer's installation instructions, including rainscreen installation method and installation guidelines.

#### Steel siding consists of single sheets of metal formed with interlocking hook edge for placement within snap lock.

#### Attach steel siding using progressive interlocking method, engaging bottom of steel siding in top of previous steel siding working bottom up, and right to left.

#### Install steel siding with single top attachment in pre-punched holes to allow individual sheets to move due to thermal expansion.

#### Do not compromise internal gutter.

### Install steel siding for orientation, sizes, and locations as indicated on Drawings.

### Install steel siding with proper anchorage and other components for this Work securely in place.

### Install steel siding with provisions for thermal and structural movement.

### Install shims to plumb substrates as necessary for installation of steel siding.

### Install weather-tight seals at perimeter of steel siding openings.

#### Test for proper adhesion on small unexposed area of solid surfacing prior to use.

#### See Section 07 9200 for additional information.

### Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA - Architectural Sheet Metal Manual.

#### Provide concealed fasteners where possible, and set units true to line and level as indicated.

#### Install flashing and trim as steel siding Work proceeds.

### Install weather-tight escutcheons for pipe and conduit penetrating exterior walls.

### Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by steel siding manufacturer.

### Install attachment system to support steel siding with provisions to provide a weather-resistant and water-tight overall assembly including sub girts, extrusions, flashings and trim.

#### Include attachment to supports and trims at locations using dissimilar materials.

#### Do not apply sealants to joints, unless noted otherwise on Drawings or Shop Drawings.

### Install accessories with positive anchorage to building components providing weather-tight assembly, provisions for thermal expansion, and coordinated installation of flashings and other components.

#### Install components required for a complete steel siding assembly including trim, copings, flashings and other accessory items.

### Weather Barrier: Install weather barrier behind steel siding and over substrate in accordance with requirements, and see Section 07 2500 for additional information.

## TOLERANCES

### Shim and align steel siding units with installation tolerances of 1/8 inch (3.175 mm) over 32 feet (9.75 m) to 1-1/4 inch (31.75 mm) over 1,050 feet (320 m), non-cumulative, both level and plumb, with location lines as indicated on Drawings.

## FIELD QUALITY CONTROL

Specifier Note: Edit following paragraph to identify who shall perform tests and inspections in compliance with project requirements.

### Testing Agency: **[Owner will engage]** or **[Engage]** a qualified independent testing agency to perform field tests and inspections.

Specifier Note: Edit following paragraph to verify wall panel system's resistance to water penetration, and coordinate with MOCK-UPS article requirements in PART 1.

### Water-Spray Test: After installation and in coordination with mock-up requirements, test area of assembly **[shown on Drawings] [as directed by Architect]** or **[<Insert area>]** for water penetration in accordance with AAMA 501.2.

## CLEANING

### Upon completion of steel siding installation, clean finished surfaces as recommended by manufacturer.

### Upon completion of steel siding installation, clear weep holes and drainage channels of obstructions and dirt.

## PROTECTION

### Protect installed products from damage during subsequent construction.

### Provide protection of steel siding as necessary due to cleaning of adjacent materials with chemicals that may harm finish.

### Replace steel siding damaged or deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION