

City of Chester – 407 Avenue of the States

March 21, 2025

Architect:

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SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
 - 1. Exterior joints in the following conditions:
 - a. Perimeter joints between materials listed in other Sections of this specification and frames of doors and windows.
 - b. Roofing Sealants as required by roofing products manufacturers.
 - c. Other joints as indicated.
 - 2. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
 - a. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and baseboards
 - b. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - c. Other joints as indicated.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

- D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- E. Field Test Report Log: For each elastomeric sealant application.
- F. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than four pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the commencement of the Work.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
 - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
 - 3. Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

4. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
 2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of nonelastomeric sealant and joint substrate indicated.
 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
- F. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F
 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids: Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component Nonsag Urethane Sealant [ES-~~#~~]:
 - 1. Products:
 - a. Sika Corporation, Inc.; Sikaflex - 1a.
 - b. Sonneborn, Division of ChemRex Inc.; Ultra.
 - c. Sonneborn, Division of ChemRex Inc.; NP 1.
 - d. Tremco; Vulkem 116.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood
- F. Single-Component Nonsag Urethane Sealant
 - 1. Products:

- a. Bostik Findley; Chem-Calk 900.
 - b. Bostik Findley; Chem-Calk 915.
 - c. Bostik Findley; Chem-Calk 916 Textured.
 - d. Bostik Findley; Chem-Calk 2639.
 - e. Pecora Corporation; Dynatrol I-XL.
 - f. Polymeric Systems Inc.; Flexiprene 1000.
 - g. Polymeric Systems Inc.; PSI-901.
 - h. Schnee-Morehead, Inc.; Permthane SM7100.
 - i. Schnee-Morehead, Inc.; Permthane SM7108.
 - j. Schnee-Morehead, Inc.; Permthane SM7110.
 - k. Sika Corporation, Inc.; Sikaflex - 15LM.
 - l. Tremco; DyMonic.
 - m. Tremco; Vulkem 921.
 - n. Tremco; Vulkem 931.
- 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25 and 50
 - 4. Use Related to Exposure: NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood

2.4 LATEX JOINT SEALANTS

- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.
- B. Products:
 - 1. Bostik Findley; Chem-Calk 600.
 - 2. Pecora Corporation; AC-20+.
 - 3. Schnee-Morehead, Inc.; SM 8200.
 - 4. Sonneborn, Division of ChemRex Inc.; Sonolac.
 - 5. Tremco; Tremflex 834.

2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at

temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

- F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 4. Provide flush joint configuration where indicated per Figure 5B in ASTM C 1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- H. Installation of Preformed Tapes: Install according to manufacturer's written instructions.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed elastomeric sealant joints as follows:
 - a. Perform two tests for the first 20 feet of joint length for each type of elastomeric sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
 4. Inspect tested joints and report on the following:
 - a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

- b. Whether sealants filled joint cavities and are free of voids.
 - c. Whether sealant dimensions and configurations comply with specified requirements.
 - 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07920



Product Selection Guide

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Document Navigation Tips:

Items listed in the table of contents above are active links that will take you to the corresponding page.

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_LS-Dual.pdf

CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/08552.rtf

Detailed Product Description (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaLifestyleSrs-DH_DPD.rtf

Size Tables (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/LSCDHE_D.dwg

CAD cross sections (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/LS-DH_XSEC_D.dwg

3D & BIM (requires appropriate software to read and use):

https://media.pella.com/professional/adm/RevitFiles/LS-Revit/Window-Double-Hung-Pella-Lifestyle_Series.zip

Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaSKP_LifestyleSeries_Double-Hung.zip

Combination Recommendations:

https://media.pella.com/professional/adm/Clad-Wood/D_Combinations.pdf

Installation Details:

https://media.pella.com/professional/adm/Clad-Wood/F_InstallationDetails.pdf

Bay/Bow Details:

https://media.pella.com/professional/adm/Clad-Wood/Pella-Wood_BayBowWindows.pdf

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Lifestyle Series Double-Hung

Size and Performance Data

	Dual-Pane
Sizes	
Standard double-hung vent/fixed sizes	●
Transom sizes	●
Egress sizes	●
Special sizes available	●
Performance ¹	
Meets or Exceeds AAMA / WDMA Ratings	H-LC25-LC50 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 1.57 psf wind pressure) ²	0.11
Water Resistance	7.5 psf
Design Pressure	25–50 psf
Other Performance Criteria	
Forced Entry Resistance Level (Minimum Security Grade) ³	10
Operating Force (lb) Initiate Motion / Maintain Motion (of Hallmark tested size and glazing) ⁴	40/40

Sound Transmission Class / Outdoor-Indoor Transmission Class

Product	Frame Size Tested ⁵	Glazing System				STC Rating	OITC Rating
		Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness	Third Pane Thickness (HGP)		
Pella Lifestyle Series	37" x 59"	1 1/16"	2.5mm	2.5mm	—	27	23
Double-Hung	37" x 59"	1 1/16"	5mm	3mm	—	31	27

(—) = Not Available

(1) Maximum performance for single unit when glazed with the appropriate glass thickness. See Design Data pages in this section for specific product performance class and grade values.

(2) Published performance data for air infiltration is determined by testing a minimum of four (4) products of NFRC model size. Testing is conducted in accordance with ASTM E283. Air infiltration ratings for products will differ by size. The performance data does not apply to combination assemblies unless noted. Actual product performance may vary for a number of reasons including installation and product care.

(3) The higher the level, the greater the product's ability to resist forced entry.

(4) Glazing configurations may result in higher operational forces.

(5) ASTM E 1425 defines standard sizes for acoustical testing. Ratings achieved at that size are representative of all sizes of the same configuration.

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LS-DH-2



Lifestyle Series Double-Hung

Features and Options

Standard	Options / Upgrades
Glazing	
Glazing Type	
Dual-Pane Insulating Glass	—
Insulated Glass Options/Low-E Types	
Advanced Low-E	SunDefense™ Low-E
	SunDefense+ Low-E
	AdvancedComfort Low-E
	NaturalSun Low-E
	NaturalSun+ Low-E
Additional Glass Options	
Annealed Glass	STC Glazing Options
	Tempered Glass
	Obscure Glass ₁
Gas Fill/High Altitude	
Argon	High altitude (Air-filled only)
Exterior	
EnduraClad® protective finish	—
Cladding Colors	
12 Standard colors ₁	—
Interior₁	
Unfinished wood	Factory primed
	Factory prefinished paint ₁
	Factory prefinished stain ₁
Wood Types	
Pine	—
Hardware	
Finishes	
Champagne, Matte Black, White or Brown	Oil Rubbed Bronze, Satin Nickel
Sash Locks/Sash Lifts	
Cam-action lock	Sash lifts ₂
Tilt-Wash Cleaning	
Tilt to interior on both sashes	—
Grilles	
Grilles-Between-the-Glass	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Simulated Divided Light with Optional Spacer₃	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Screens	
—	Full-Size InView™ screens, Hidden Screen ₁

(—) = Not Available

(1) Contact your local Pella sales representative for current color options.

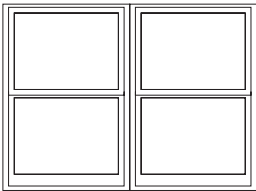
(2) Sold separately for Pella® Lifestyle Series double-hung windows.

(3) Available with Low-E argon-insulated glass only.

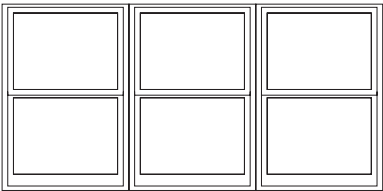


Combination Assemblies

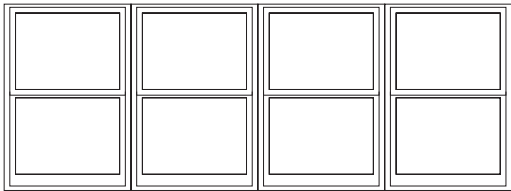
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullioned together by a direct or reinforcing mullion. Pella window combinations are available in an endless variety of arrangements. Refer to Combinations section for requirements and limitations. Contact your local Pella sales representative for more information.



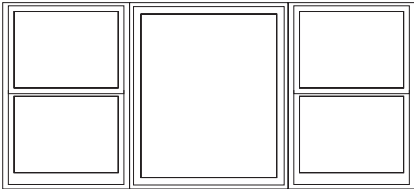
Two-Wide



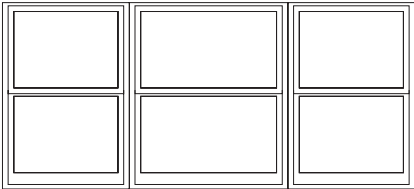
Three-Wide Equal



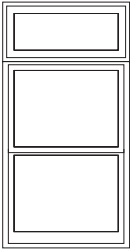
Four-Wide Equal



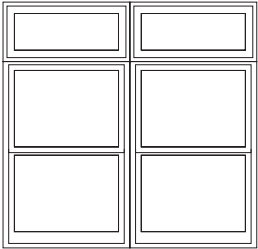
Center Fixed with Flankers



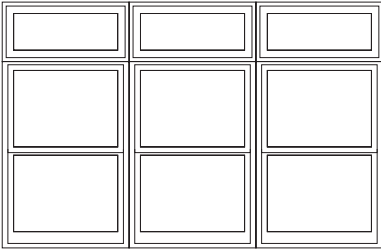
Three-Wide Unequal



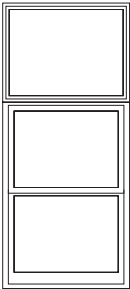
Transom over
Single



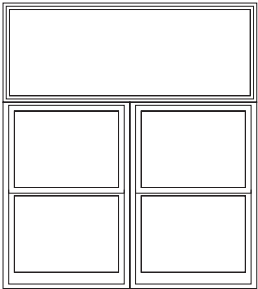
Two-Wide Transoms over
Two-Wide



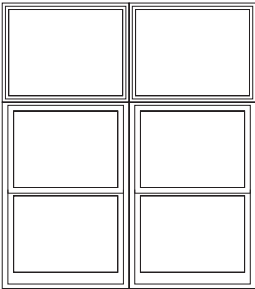
Three-Wide Transoms over
Three-Wide



Clad Frame over
Single



Single Clad Frame over
Two-Wide



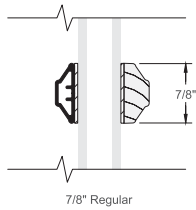
Two Wide Clad Frame over
Two-Wide



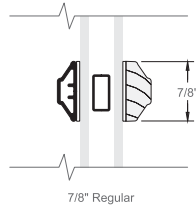
Grilles

Grille Profiles

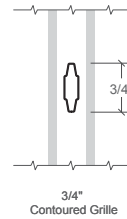
Simulated-Divided-Light
Grilles



Simulated-Divided-Light
Grilles with optional spacer

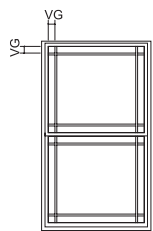


Grilles-Between-the-Glass

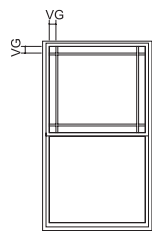


Grille Patterns

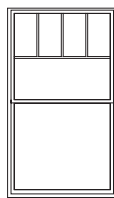
Grilles-Between-the-Glass and Simulated-Divided-Light Grilles



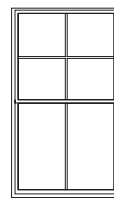
9-Lite Prairie



9-Lite Prairie
Top Sash Only



Top Row



Cross

9-Lite Prairie

- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
- Available in transoms \geq 1'3" height and width.

Cross

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

Top Row

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

For traditional patterns, see size tables.

VG = Visible Glass

(1) Grilles are available in traditional patterns only.

Lite dimensions noted can vary.

For size and pattern availability contact your local Pella sales representative.



Lifestyle Series Double-Hung

Detailed Product Description

Frame

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine.
- Exterior surfaces are clad with aluminum.
- Components are assembled with screws, staples and concealed corner locks.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94mm).
- Jamb liner shall be high-impact polyvinyl chloride backed by continuous hard-tempered aluminum springs.
- Optional factory applied jamb extensions are available.
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.
- Optional factory-installed Pella Steady Set Installation System.

Sash

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine.
- Exterior surfaces are clad with aluminum, lap-jointed and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-5/8" (41 mm).
- Sashes tilt for easy cleaning.

Weatherstripping

- Foam with 3 mm skin at head and bottom rail. Thermal-plastic elastomer bulb with slip-coating set into upper sash for tight contact at check rail.
- Secondary polyvinyl chloride leaf-type weatherstrip on bottom sash at sill.
- Jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- High altitude glazing available.
- Silicone groove-glazed 11/16" [obscure] dual-seal insulating glass [[annealed] [tempered]] [[Advanced] [SunDefense™] [SunDefense+] [AdvancedComfort] [NaturalSun] [NaturalSun+] Low-E [with argon]].

Exterior

- Exterior aluminum surfaces are finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
- Color is [White] [Tan] [Putty] [Brown] [Poplar White] [Portobello] [Hartford Green] [Morning Sky Gray] [Brick Red] [Black].

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen] [Bright White] [stain₁]].

Hardware

- Galvanized block-and-tackle balances are connected to sash with a polyester cord and concealed within the frame.
- Factory installed self-aligning surface-mounted sash lock. Two sash locks on units with frame width 33-1/4" and greater.
- Optional Sash lift furnished for field installation. Two lifts on units with frame width 33-1/4" and greater.
- Finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [Satin Brass] [Satin Nickel].
- Champagne locks are standard on unfinished units; White locks are standard on factory prefinished white units.

Optional Products

Grilles

- Simulated-Divided-Light [with optional spacer]
 - 7/8" Grilles permanently bonded to the interior and exterior of glass.
 - Patterns are [Traditional] [Prairie] [Cross] [Top Row] [Custom – Equally Divided].
 - Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain₁]]. Exterior grilles to match the exterior cladding color.
 - Available only on units glazed with Low-E insulated glass with argon.
– or –
- Grilles-Between-the-Glass₂
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Top Row] [Custom – Equally Divided].
 - Interior color is [White] [Ivory] [Tan₃] [Brickstone] [Black] [Putty₃] [Brown₃] [Harvest] [Cordovan].
 - Exterior color [matched to the exterior cladding color] [White]₄.

Screens

- InView™ screens
 - Full-size Vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.
- Hidden screens₅
 - Vinyl-coated 18/18 mesh fiberglass screen cloth, set in aluminum channels hidden within the sash, supplied complete with all necessary hardware.
 - Finish color [White] [Black] [Brown] [Fossil] [Iron Ore].

Hardware

- Optional factory applied limited opening device available for vent units in steel, nominal 3-3/4" opening.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

Sensors

- Optional factory installed integrated security sensors available in vent units.

(1) Contact your local Pella sales representative for current designs and color options.

(2) Available on units glazed with Low-E insulated glass with argon, and obscure insulated glass.

(3) Tan, brown and putty Interior GBG colors are available only with matching interior and exterior colors.

(4) Appearance of exterior grille color will vary depending on Low-E coating on glass.

(5) Not compatible with Limited Opening Hardware.



Product Summary

 Fiberglass and Steel Entry DoorsED-2

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The information published in this document is believed to be accurate at the time of publication. However, because we are constantly working to improve our products, specifications are subject to change without notice. Consult your local Pella representative for the most current product information and availability.



Long-Lasting Performance

Our complete panel and frame system delivers exceptional durability and performance. It is made of a rigid closed cell polyfiber material, which means it will not absorb moisture and will not rot. Our solid polyurethane foam-filled panels provide years of exceptional energy efficiency and performance. Impact glass is also available.

Fiberglass

High performance. Low maintenance.

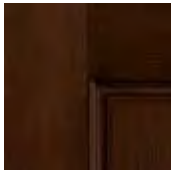
- Grained fiberglass has the warm, rich look of wood.
- Dent-resistant and won't rust or corrode.
- Choose from Mahogany-grain, Oak-grain, Fir-grain and Smooth fiberglass.



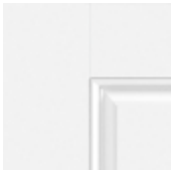
Oak | Textured



Mahogany | Textured



Fir | Textured



Smooth

Steel

Naturally strong and durable.

- Steel panels provide a quality appearance to any home that's easy to maintain.
- Smooth surface creates even color when painted.
- Steel provides extra durability.



Steel



Pella® entry doors are backed by one of the best warranties in the business.*
Pella entry door fiberglass systems with composite exterior frames are backed by the Pella Limited Lifetime Warranty.*

*See written limited warranties for complete details, including exceptions and limitations, at pella.com/warranty or contact Pella Customer Service.

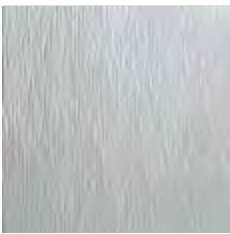


Glazing Options

Low-E Clear Glass



Textured and Obscure Glass



Chord | Textured



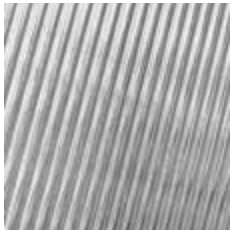
Double Water | Textured



Pear | Obscure



Satin Etch | Obscure



Narrow Reed | Textured

Glass Privacy Ratings

	Privacy Rating
Low-E	
Low-E Clear	1
Textured and Obscure	
Chord	9
Double Water	9
Pear	9
Satin Etch	9
Narrow Reed	7
Decorative Glass	
Avoca	8
Floris	8
Huxley	8
Story	8
Pel	7
Lucas	8
Tune	7
Danbury	9
Lovilia	9

Decorative Glass Collections

Traditional



Avoca
Platinum Caming

Transitional



Huxley
Black Patina Caming

Craftsman



Lucas
Platinum Caming



Tune
Black Patina Caming

Contemporary (Wrought Iron between glass)



Danbury
Black Wrought Iron



Lovilia
Black Wrought Iron

NOTE: Colors shown are as accurate as the printing process permits. Indicates impact-resistant glazing available.

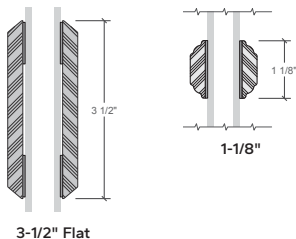


Fiberglass and Steel Entry Doors

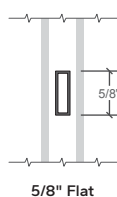
Features and Options – Grilles and Blinds

Grille Profiles

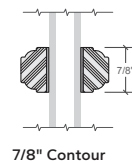
Simulated-Divided-Light Grilles



Grilles-Between-the-Glass

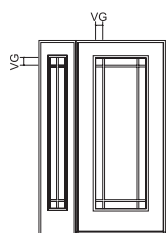


Fixed Grilles



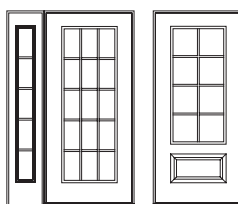
Grille Patterns

9-Light Prairie

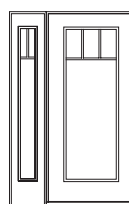


VG = Visible Glass
Standard corner light
dimension:
GBG = 3-15/16" VG
1-1/8" SDL = 2.930" VG

Traditional



Top Row



All doors will be 2 or 3 lights wide.
For size and pattern availability contact your local Pella sales representative.

Simulated-Divided Light (1-1/8")

Traditional Pattern Lites

		6' 8"		8' 0"	
		Lites Wide	Lites High	Lites Wide	Lites High
Door	Craftsman Light	2	2	2	2
	Flush Glazed 1/2 Light	2 or 3	2 or 3	-	-
	Flush Glazed 3/4 Light	2	2, 3 or 4	2	2, 3 or 4
	Flush Glazed Full Light	2	2, 4 or 5	2	2, 4 or 5
Sidelight	Craftsman Light	1	2	1	2
	Flush Glazed 3/4 Light	1	2, 3 or 4	1	2, 3 or 4
	Flush Glazed Full Light	1	3, 4 or 5	1	3, 4 or 5

Grilles-Between-the-Glass

Traditional Pattern Lites

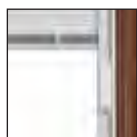
		6' 8"		8' 0"	
		Lites Wide	Lites High	Lites Wide	Lites High
Door	Craftsman Light	2 or 3	1 or 2	2 or 3	1 or 2
	Flush Glazed 1/2 Light	2 or 3	2 or 3	2 or 3	2 or 3
	Flush Glazed 3/4 Light	2	2, 3 or 4	2	2, 3 or 4
	Flush Glazed Full Light	2 or 3	2, 4 or 5	2 or 3	2, 4, 5 or 6
Sidelight	Craftsman Light	1	2	1	2
	Flush Glazed 3/4 Light	1	2, 3 or 4	1	2, 3 or 4
	Flush Glazed Full Light	1	2, 4 or 5	1	2, 4, 5 or 6

Fixed

Traditional Pattern Lites

		6' 8"		8' 0"	
		Lites Wide	Lites High	Lites Wide	Lites High
Door	Fan Light	5	-	5	-
	Craftsman Light	3	2 or 1	3	2 or 1
	1/2 Light	3	3	-	-
	Full Light	2 or 3	5	-	-
Sidelight	1/2 Light	1	3	-	-
	Full Light	1	5	-	-

Blinds-Between-the-Glass



Cordless white blinds offer light and privacy control and are protected between two panes of Low-E insulating glass so they don't need cleaning.









Pella® Entry Doors Prefinished Fiberglass or Steel

All paints and stains are available on the exterior and interior of a panel or sidelight, as well as the frame.*

Fiberglass and Steel Factory Prefinish Paint

					
White	Pearl Gray	Wolf Gray	Fossil	Brown	Black
					
Classic White	Soft Linen	Almond	Putty	Portobello	
					
Brick Red	Spice Red	Sage	Pine Green	Frost Blue	Blue Ash

Fiberglass Factory Prefinish Stain

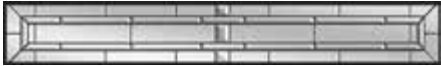
		
Golden Oak	Early American Stain	Provincial Stain
		
Dark Mahogany Stain	Red Mahogany Stain	Charcoal Stain

*Frame finish is monotone.
NOTE: The rich, distinctive look of our factory prefinished doors is achieved through hand-finishing. Some color variation is expected.
Colors shown are as accurate as the printing process permits.

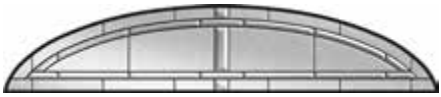


Entry Door

Sidelight

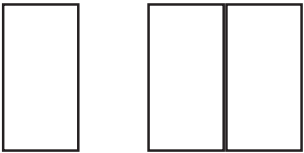


Rectangular Transom

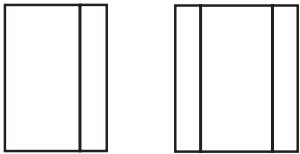


Elliptical Transom

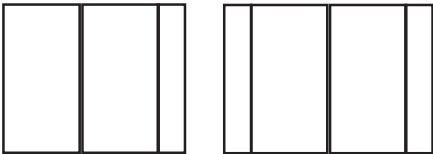
Single and Double Doors



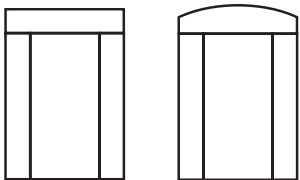
Single Door with Sidelights



Double Doors with Sidelights



Single Door with Sidelights and Transom



NOTE: See Sizes and Options pages in this section for complete double door offering.



Fiberglass and Steel Entry Doors

Features and Options – Hardware and Accessories

Handle Sets

Amador / Bellevue



Napa / Del Mar₂



La Jolla / Seattle₂



Longview₂ / Elkhorn

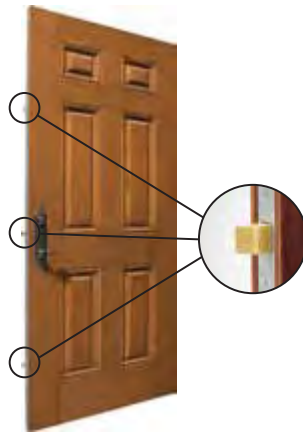


Multi-point Lock Exterior Hardware₁

Eclipse



Grip



Multi-point Mechanism

Optional Deadbolts

Dual Cylinder Deadbolt



Keyed Interior and Exterior

Single Cylinder Deadbolt



Keyed Exterior

Hardware Finishes



HARDWARE	Satin Brass ₃	Distressed Bronze	Distressed Nickel	Matte Black	Polished Chrome	Satin Nickel	Oil-Rubbed Bronze
Amador				•		•	
Bellevue				•		•	
Napa / Del Mar	•			•		•	•
La Jolla / Seattle	•			•	•	•	
Longview / Elkhorn		•	•				
Eclipse / Grip						•	
Deadbolts				•		•	

Additional Decorative Accents

Dentil Shelf



(1) Not available on steel panels.

(2) Also available with Multipoint Lock.

(3) Not available with Multipoint Lock.



Fiberglass and Steel Entry Doors

Product Selection Guide – In-Swing and Out-Swing Doors

	Mahogany	Oak	Fir	Smooth	Steel
Glazing					
Low-E insulating glass	O	O	O	O	—
Textured and Obscure glass	O	O	O	O	—
Decorative glass	O	O	O	O	—
Grilles and Blinds					
Grilles-Between-the-Glass (Traditional, Prairie, Top-Row)	—	—	O	O	—
Simulated-Divided-Light (Traditional, Prairie, Top-Row)	O	O	O	O	—
Fixed Grilles (Traditional)	O	O	O	O	—
Blinds-Between-the-Glass ₁	O	O	O	O	—
Interior/Exterior Finish – Panel					
Factory applied stain finish ₂	O	O	O	—	—
Factory applied paint finish ₂	O	O	O	O	O
Interior/Exterior Finish – Frame					
Factory applied stain finish ₂	O	O	O	O	O
Factory applied paint finish ₂	O	O	O	O	O
Sill Options					
Mill finish aluminum	S	S	S	S	S
Black finish aluminum	O	O	O	O	O
Low profile / ADA compliant mill finish aluminum	O	O	O	O	O
Threshold					
Composite Black	S	S	S	S	S
Wall Depths					
In-Swing 4-9/16"	S	S	S	S	S
In-Swing 5-1/4" or 6-9/16"	O	O	O	O	O
Out-Swing 4-9/16"	S	S	S	S	S
Out-Swing 5-1/4" or 6-9/16"	O	O	O	O	O
Hinges					
Standard Ball Bearing (Brass, Satin Nickel, Matte Black, Stainless Steel)	S	S	S	S	S
Boring Options₃					
No bore	O	O	O	O	O
2-1/8" latch bore	S	S	S	S	S
2-1/8" latch bore with deadbolt	O	O	O	O	O
2-3/8" backset	S	S	S	S	S
2-3/4" backset	O	O	O	O	O
Multipoint bore with 2-3/8" backset	O	O	O	O	—
Decorative Accents					
Dentil shelf	—	—	O	O	—

S = Standard; O = Optional; (—) = Not Available

(1) Blinds-Between-the-Glass are only available with Low-E.

(2) Contact your local Pella sales representative for current color options.

(3) All options with a bore have a 2-1/8" crossbore.



Fiberglass and Steel Entry Doors

Product Performance – In-Swing Doors

		Design Pressure
Impact In-Swing		
6'8"	Full Light Door (Single Unit)	+50/-50
	Full Light Sidelight	
	Full Light Door with Sidelights	
	Full Light Double Door	
	Full Light Double Door with Sidelights	
	Flush Glazed Full Light Door (Single Unit)	
	Flush Glazed Full Light Sidelight	
	Flush Glazed Full Light Door with Sidelights	
	Flush Glazed Full Light Double Door	
	Flush Glazed Full Light Double Door with Sidelights	
8'0"	Full Light Door (Single Unit)	+40/-45
	Full Light Sidelight	
	Full Light Door with Sidelights	
	Full Light Double Door	
	Full Light Double Door with Sidelights	
	Flush Glazed Full Light Door (Single Unit)	+45/-45
	Flush Glazed Full Light Sidelight	
	Flush Glazed Full Light Door with Sidelights	
	Flush Glazed Full Light Double Door	
	Flush Glazed Full Light Double Door with Sidelights	
In-Swing		
6'8"	Solid Door (Single Unit)	+50/-50
	Solid Door with Sidelights	
	Full Light Door (Single Unit)	+40/-40
	Full Light Sidelight	
	Full Light Door with Sidelights	
	Flush Glazed Full Light Door (Single Unit)	+50/-50
	Flush Glazed Full Light Sidelight	
Flush Glazed Full Light Door with Sidelights		

Sound Transmission Class / Outdoor-Indoor Transmission Class

	STC Rating	OITC Rating
In-Swing Fiberglass Panel		
Solid fiberglass panel with composite frame	23	25
Full Light decorative fiberglass panel with composite frame	28	28

Structural values include both standard and multi-point lock.

Water resistance is 0 psf for all entry door sill types.



Fiberglass and Steel Entry Doors

Product Performance – Out-Swing Doors

Design Pressure




Impact Out-Swing	
6'8"	Full Light Door (Single Unit)
	Full Light Sidelight
	Full Light Door with Sidelights
	Full Light Double Door
	Full Light Double Door with Sidelights
	Flush Glazed Full Light Door (Single Unit)
	Flush Glazed Full Light Sidelight
	Flush Glazed Full Light Door with Sidelights
	Flush Glazed Full Light Double Door
	Flush Glazed Full Light Double Door with Sidelights
8'0"	Full Light Door (Single Unit)
	Full Light Sidelight
	Full Light Door with Sidelights
	Full Light Double Door
	Full Light Double Door with Sidelights
	Flush Glazed Full Light Door (Single Unit)
	Flush Glazed Full Light Sidelight
	Flush Glazed Full Light Door with Sidelights
	Flush Glazed Full Light Double Door
	Flush Glazed Full Light Double Door with Sidelights
Out-Swing	
6'8"	Solid Door (Single Unit)
	Solid Door with Sidelights
	Full Light Door (Single Unit)
	Full Light Sidelight
	Full Light Door with Sidelights
	Flush Glazed Full Light Door (Single Unit)
	Flush Glazed Full Light Sidelight
	Flush Glazed Full Light Door with Sidelights

Structural values include both standard and multi-point lock.
Water resistance is 0 psf for all entyr door sill types.



Pella® Entry Doors

Sizes and Options

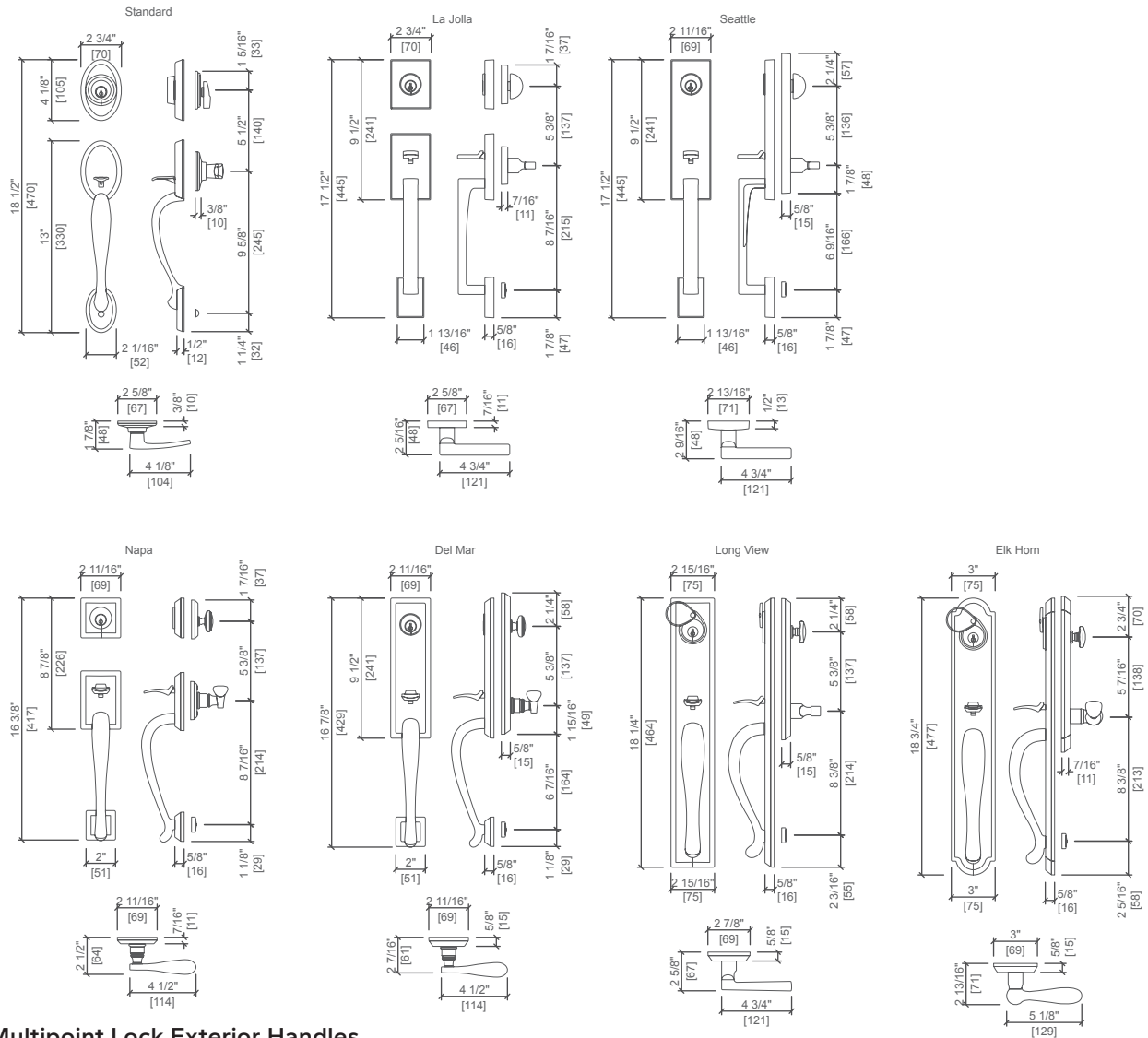
		Glass Panels											
		3 Light Equal			4 Light Equal			Flush Glazed 1/2 Light					
Call Sizes	Height	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	8'-0"	8'-0"	8'-0"
	Single-Panel Width	2'-8"	2'-10"	3'-0"	2'-8"	2'-10"	3'-0"	2'-8"	2'-10"	3'-0"	2'-8"	2'-10"	3'-0"
	Double-Panel Width	5'-4"	5'-8"	6'-0"	5'-4"	5'-8"	6'-0"	5'-4"	5'-8"	6'-0"	5'-4"	5'-8"	6'-0"
Material	Mahogany-Grain Fiberglass												
	Oak-Grain Fiberglass	•	•	•	•	•	•						
	Fir-Grain Fiberglass							•	•	•	•	•	•
	Smooth Fiberglass	•	•	•	•	•	•	•	•	•	•	•	•
	Steel												
Decorative Glass (Select)	Huxley												
	Floris												
	Avoca												
	Pel												
	Story												
	Lucas												
	Tune												
	Lovilia												
	Danbury												
Non-Decorative Glass	Low-E	•	•	•	•	•	•	•	•	•	•	•	•
	Impact Glass Option							•		•	•		•
	Grilles-Between-the-Glass							•	•	•	•	•	•
	Simulated-Divided-Light Grilles							•	•	•	•	•	•
	Fixed Grilles												
	Blinds-Between-the-Glass							•	•	•	•	•	•
Obscure Glass (Select)	Chord	•	•	•	•	•	•	•	•	•	•	•	•
	Cross Reed	•	•	•	•	•	•	•	•	•	•	•	•
	Double Water	•	•	•	•	•	•	•	•	•	•	•	•
	Narrow Reed	•	•	•	•	•	•	•	•	•	•	•	•
	Pear	•	•	•	•	•	•	•	•	•	•	•	•
	Satin Etch	•	•	•	•	•	•	•	•	•	•	•	•
Visible Glass ¹	Width	21"	21"	21"	21"	21"	25"	21"	21"	21"	21"	21"	21"
	Height	16"	16"	16"	9"	9"	9"	35"	35"	35"	35"	35"	35"
Actual Glass ¹	Width	22-in	22-in	22-in	22"	22"	22"	22"	22"	26"	22"	22"	26"
	Height	17"	17"	17"	10"	10"	10"	36"	36"	36"	36"	36"	36"
Panel Options													
		3 Light Equal			4 Light Equal			Flush Glazed 1/2 Light					

(1) Glass dimensions shown are for 1 (one) light only.



Fiberglass and Steel Entry Doors

Handle Sets,



Multipoint Lock Exterior Handles

Not to scale, dimensions are approximate.

(1) With wall depth of 4 9/16", the following handle sets may have interaction with an installed storm door: Chesapeake, Del Mar, Elkhorn, and Longview.

SECTION 09250 - GYSPUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior gypsum board.
 - 2. Reglets.
- B. Related Sections include the following:
 - 1. Division 9 Painting Sections for primers applied to gypsum board surfaces.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. Mockups: Before beginning gypsum board installation, install mockups of at least 4 feet in length to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Dropped lighting soffits
 - 2. Simulate finished lighting conditions for review of mockups.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.
- B. Type X:
 - 1. Thickness: 1/2" or 5/8 inch – match existing
 - 2. Long Edges: Tapered
 - 3. Special fire-Type X gypsum board has fire-resistive capability greater than that of standard Type X. For rated assemblies, panels from different manufacturers cannot be intermixed because ratings apply only to assemblies identical in materials and construction to those

tested. Design designations of independent testing agencies indicated on Drawings generally determine product requirements for special Type X gypsum board.

2.3 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A108.1.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. USG Corporation; DUROCK Cement Board.
3. Thickness: 1/2 inch

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Gypsum Wall Board accessories: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet
2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.

B. Exposed Aluminum Trim: Exposed, extruded accessories of profiles and dimensions indicated.

1. Basis of Design Products:
 - a. Manufacturer: Fry Reglet Corp.
 - b. Product: "F" Reveal Molding DRMF 50-50 – 1/2", 1/2".
 - c. Color: Black.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound

D. Joint Compound for Exterior Applications:

E. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 1. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."
- F. Thermal Insulation: As specified in Division 7 Section "Building Insulation."
- G. Vapor Retarder: As specified in Division 7 Section "Building Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: In all locations except where noted.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.

2. On partitions/walls, apply gypsum panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1, at all locations scheduled to receive tile, including floors
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners
 2. Bullnose Bead: Use where indicated
 3. LC-Bead: Use at exposed panel edges where indicated or as directed by architect
 4. L-Bead: Use where indicated
 5. U-Bead: Use at exposed panels edges and where indicated or directed by Architect.
- D. Aluminum Trim: Install in locations as indicated on Drawings.

3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, beveled edges, and damaged surface areas.

- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 3:
 - 3. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated
 - a. Primer and its application to surfaces are specified in other Division 9 Sections.
 - b. Level 5 is suitable for surfaces receiving gloss and semigloss enamels and surfaces subject to severe lighting. It is considered a high-quality gypsum board finish.
- E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.7 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09250



MASTER ARCHITECTURAL PAINTING SPECIFICATION

09 90 00 Painting & Coating

The BEHR® Architectural Coatings specified here comply with LEED BD+C: v4 and LEED v4.1 Low Emitting Materials criteria for Paints and Coatings, qualifying them for all levels of LEED v4.1 Certification. Most BEHR Products meet or exceed Master Painter's Institute (MPI) standards, with several achieving MPI Extreme Green™ ("X-Green") certification. Additionally, they comply with VOC content limits set by the South Coast Air Quality Management District's Architectural Rule 1113.

Most BEHR Architectural Coatings are GREENGUARD® Gold certified* and comply with UL 2818 - 2022 Gold Standard for Chemical Emissions for Building Materials, Finishes, and Furnishings. Certificates of Compliance, along with Environmental and Health Product Declarations, are available at behrpro.com.

*GREENGUARD is a registered trademark of UL LLC.
For more information, visit ul.com/gg. Certificates can be found on: spot.ul.com. See usgbc.org/LEED for details.

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Brady Architectural Photography

ATOMOSPHERE
San Diego, CA
JWDA Architects

PART 1 - GENERAL

1.01 SUMMARY

Work includes furnishing of materials and equipment, preparation of surfaces, and completion of painting and finishing of surfaces as required by Drawings and specified herein.

1.02 RELATED WORK

- A. Factory, pre-finished items as specified in various sections
- B. Shop painting specified in respective sections
- C. Architectural woodworking
- D. Surfaces not to be painted:
 - 1. Pre-finished wall, ceiling and floor coverings
 - 2. Items with factory-applied final finish
 - 3. Concealed ducts, pipes and conduit
 - 4. Surfaces specifically scheduled or noted on Drawings not to be painted

1.03 SUBMITTALS

- A. Product data:
 - 1. Not less than thirty (30) days before beginning work, submit a complete list of materials proposed for use, together with manufacturer's specifications.
 - 2. Paint materials and products shall be subject to Architect's approval.
- B. Color samples:
 - 1. Prepare color and finishes on samples, 8-1/2" x 11" in size.
 - 2. Submit samples as requested until the required sheen, color and texture is achieved.
 - 3. Prepare wood samples on type and quality of wood specified for use on project.
 - 4. Label and identify each sample as to location and application.

1.04 COLORS

- A. Colors are to be selected or approved by Architect and actual color chips shall be supplied to Contractor for matching. All undercoats shall be tinted to approximately half the color of the finish coat.
- B. Approval of final colors: Do not apply final coat of paint until colors have been approved by Architect.
- C. The number of colors to be used shall be as determined by the Architect. Architect reserves the right to vary colors throughout the project.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver paint materials in sealed original-labeled containers bearing manufacturer's name, type of paint, stock number, color and instructions for reducing or mixing, where applicable.
- B. Paint materials and equipment:
 - 1. Store only acceptable project materials on site.
 - 2. Store in a suitable location.
 - 3. Restrict storage to paint materials and related materials.
 - 4. Comply with health and fire regulations.

PAINTING AND COATINGS SECTION 09 90 00

1.06 PROJECT CONDITIONS

- A. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied. Do not apply paint or coatings when temperature is below 50°F. Do not apply exterior paint in damp or rainy weather; ensure that the surface has dried thoroughly before proceeding. Surface temperature must be at least 5°F above dew point before painting.
- B. Do not apply finish in areas where dust or contaminants are being generated.
- C. Use low odor, low VOC products to minimize impact on indoor environmental air quality.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Products specified are manufactured by Behr Paint Company, Santa Ana, California 92705. Other manufacturers conform to materials listed and approved by Architect.
- B. Materials selected for coating systems for each type of surface shall be the product of a single manufacturer.
- C. Do not thin finish coats without the manufacturer's approval.
- D. Unsuitability of specified products: Claims concerning the unsuitability of any material specified or inability to satisfactorily produce the work will not be entertained, unless such claim is made in writing to the Architect before work is started.
- E. The number of coats scheduled is minimum. Apply additional coats at no additional cost if necessary to completely hide base materials, produce uniform color, and provide satisfactory finish result.
- F. Submitted paints and coatings comply with air-quality regulations and established VOC content limits of South Coast AQMD Architectural Rule 1113.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into acceptable condition through preparatory work as included in Article 3.02 "Preparation ". Notify the Owner's Representative in writing of any defects or conditions which will prevent a satisfactory installation.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows;
 - a. Concrete: 12 percent
 - b. Portland Cement Plaster and Stucco: 12 percent
 - c. Masonry (Clay and CMU): 12 percent
 - d. Wood: 15 percent
 - e. Gypsum Board: 12 percent
- D. Portland Cement Plaster Substrates: Verify that plaster is fully cured.
- E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

PAINTING AND COATINGS SECTION 09 90 00

- F. Proceed with surface preparation and coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating is construed as acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Clean surfaces to receive paint thoroughly of substances, which could impair adhesion of paints, including dust, dirt, oil and grease before application of any coatings. Prepare surfaces as follows:
 - 1. WOOD SUBSTRATES: Remove mill glaze and dust, sand smooth. Fill open joints, cracks, nail holes and other pits or depressions flush and smooth with wood filler after priming. Use wood putty to match the finish paint coat. Touch up knots or sap streaks with a stain-blocking sealer before priming.
 - 2. CONCRETE, PRE-CAST CONCRETE, TILT-UP: Remove release agents, curing compounds, loose particles, efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surface to be coated exceeds that permitted in the manufacturer's written instructions. Prime with an alkali-resistant primer.
 - 3. PLASTER and STUCCO SUBSTRATES: Fill hairline cracks, small holes and imperfections on surfaces with patching compound. Smooth off to match adjacent surfaces. Apply an alkali-resistant primer or wash with fresh water and neutralize high alkalinity surfaces where they occur.
 - 4. MASONRY SUBSTRATES: Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surface to be coated exceeds that permitted in the manufacturer's written instructions. Prime with an alkali-resistant primer.
 - 5. SHOP-PRIMED STEEL SUBSTRATES: Solvent clean according to SSPC-SP1. Remove loose primer and rust, contaminants and foreign matter. Prime bare steel and touch up abrasions with a ferrous metal primer.
 - 6. STEEL, FERROUS METAL SUBSTRATES: Remove rust, mill scale, foreign substances and shop primer. Clean according to SSPC-SP3, "Power Tool Cleaning", or abrasive blasting cleaning according to SSPC-SP6 "Commercial Blast Cleaning" as required. Protect surface from corrosion until application of primer.
 - 7. GALVANIZED METAL: Remove oils, passivators and clean entire surface with an appropriate solvent. Pre-treat with a phosphoric acid etching solution to promote adhesion of subsequently applied coatings.
 - 8. PHOSPHATIZED METAL or GALVANNEALED METAL shall not be chemically etched. Clean and apply suitable metal primer.
 - 9. ALUMINUM SUBSTRATES: Solvent clean according to SSPC-SP1. Remove loose surface oxidation.
 - 10. GYPSUM BOARD SUBSTRATES: Remove dust and foreign matter. Fill pits flush and smooth with joint compound and where required, apply skim coat to provide the required finishing level based on GA-214-96, Recommended Levels of Gypsum Board Finish before application of decoration.
- B. Surfaces, which cannot be prepared or painted as specified, shall be immediately brought to the attention of Architect in writing.
 - 1. Starting work without such notification will be considered acceptance by the Contractor of surfaces involved.
 - 2. Replace unsatisfactory work caused by improper or defective surfaces as directed by Architect at no additional cost to Owner.

PAINTING AND COATINGS SECTION 09 90 00

3.03 APPLICATION

- A. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer.
- B. Application:
 - 1. Apply paint with suitable brushes, rollers or spraying equipment.
 - 2. Apply stain in accordance with manufacturer's recommendations.
 - 3. Rate of application shall not exceed that as recommended by paint manufacturer for surface involved.
- C. Comply with recommendations of product manufacturer for drying time between succeeding coats.
- D. Leave parts of molding and ornaments clean and true to details with no undue amount of paint in corners and depressions.
- E. Make edges of paint adjoining other material or color clean and sharp with no overlapping.
- F. Refinish whole wall where portion of finish is not acceptable.
- G. Apply materials evenly with appropriate film thickness and free of runs, sags, skips and other defects. Hard, glossy finishes shall be sanded lightly between coats, dusted and cleaned before recoating.
- H. Remove hardware, hardware accessories, plates, lighting fixtures and similar items in place prior to painting, and replace upon completion of each space.
- I. Disconnect heating and other equipment adjacent to walls using workers skilled in appropriate trades and move to permit wall surfaces to be painted. Following completion of painting, they shall be expertly replaced and reconnected.
- J. Paint visible surfaces behind vents, registers or grilles flat black.
 - 1. Wash exposed metal with solvent, then prime and paint as scheduled.
 - 2. Spray paint wherever practical.
- K. Do not paint over Underwriters' labels, fusible links or sprinkler heads.
- L. EXPOSED PLUMBING AND MECHANICAL ITEMS: Items without factory finish such as conduits, pipes, access panels and items of similar nature shall be finished to match adjacent wall and ceiling surfaces unless otherwise directed.

3.04 CLEANUP

Upon completion of work, remove equipment, excess material and debris. Remove paint splatter and leave area in a neat and orderly condition.

3.05 PROTECTION

- A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing and repainting, as acceptable to Architect.
- B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.
 - 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

PAINTING AND COATINGS SECTION 09 90 00

3.06 FINISH SCHEDULE

- A. Finish surfaces in accordance with schedule. Catalog names and numbers refer to products as manufactured or distributed by the Behr Paint Company, Santa Ana, California 92705, except as otherwise specified by Architect.
- B. Provide paint finishes of even, uniform color, free from cloudy or mottled appearance. Properly correct non-complying work to satisfaction of Owner's representative and representative of the Behr Paint Company.
- C. Some colors, especially accent colors, may require multiple finish coats for adequate coverage and opacity.
- D. The specified number of primer and finish coats is minimum acceptable. If full coverage and opacity is not obtained with a specified number of coats, apply additional coats as necessary to produce the required finish.
- E. Application Finish Schedule:

EXTERIOR PAINT SCHEDULE:

1. CEMENT PLASTER and STUCCO

Flat – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Flat – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

2. CEMENT PLASTER and STUCCO

Flat – Premium High Build Coating, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM® Exterior High Build Coating (4700)

3. CONCRETE, CEMENT PLASTER, STUCCO, MASONRY and BRICK

Flat–Premium Elastomeric, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM® Elastomeric Masonry, Stucco & Brick Paint (68)

PAINTING AND COATINGS SECTION 09 90 00

4. CONCRETE, PRE-CAST CONCRETE, CONCRETE TILT-UP and POURED-IN-PLACE CONCRETE

Flat – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Semi-Gloss – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Semi-Gloss Enamel Paint (5050)

Flat – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

5. CONCRETE, CONCRETE TILT-UP, PRECAST CONCRETE

Flat – Premium High Build Coating, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM® Exterior High Build Coating (4700)

6. CONCRETE MASONRY UNITS (CMU)

Flat – Premium, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Semi-Gloss – Premium, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Exterior Semi-Gloss Enamel Paint (5050)

Flat – Professional, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

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Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

7. CONCRETE MASONRY UNITS (CMU)

Flat – Premium High Build Coating, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM® Exterior High Build Coating (4700)

8. CONCRETE MASONRY UNITS (CMU)

Flat– Premium Elastomeric, 100% Acrylic:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM® Elastomeric Masonry, Stucco & Brick Paint (68)

9. FIBER CEMENT SUBSTRATES

Flat – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Flat – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

10. CONCRETE – Decks, Floors, Walkways, Porches and Patios

Low-Lustre – Premium, 100% Acrylic:

Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)

Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Low-Lustre (6050)

11. CONCRETE – Decks, Floors, Walkways, Porches and Patios

Anti-Slip, Textured Low-Lustre – Premium, 100% Acrylic:

Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)

Two Coats: BEHR PREMIUM® Anti-Slip Porch & Patio Floor Paint, Textured Low-Lustre (6250)

12. CONCRETE – Decks, Floors, Walkways, Porches and Patios

Gloss – Premium, 100% Acrylic:

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Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)
Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Gloss (6705)

13. CONCRETE – Horizontal Surfaces, Floors and Porches
Eggshell (Satin) – Premium High-Performance Epoxy/Acrylic
Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)
Two Coats: BEHR PREMIUM® Self-Priming 1-Part Epoxy Acrylic Concrete & Garage Floor Paint (900)
14. CONCRETE, Solid Color Coating: Decks, Walkways, Pool Decks, Sidewalks
Flat – Premium, 100% Acrylic
Two Coats: BEHR PREMIUM ADVANCED DECKOVER® Smooth Coating (5000)

Texture – Premium, 100% Acrylic:
Two Coats: BEHR PREMIUM ADVANCE DECKOVER® Textured Coating (5005)
15. CONCRETE, Solid Color Stain
Flat – Premium, Siliconized, 100% Acrylic, Water Repellent:
Two Coats: BEHR PREMIUM® Solid Color Concrete Stain (800)
16. CONCRETE, Semi-Transparent Stain
Flat – Premium, Siliconized, Styrene Acrylic, Water Repellent:
Two Coats: BEHR PREMIUM® Semi-Transparent Decorative Concrete Stain (855)
17. CONCRETE SEALER: Wet Look (Vertical or Horizontal Substrates)
High-Gloss – Premium, Acrylic:
Two Coats: BEHR PREMIUM® Wet-Look Sealer (985)
18. CONCRETE SEALER: Wet Look (Vertical or Horizontal Substrates)
Low Lustre – Premium, Acrylic:
Two Coats: BEHR PREMIUM® Low-Lustre Sealer (986)
19. WOOD – Opaque Paint Finish
Flat – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Semi-Gloss – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM PLUS® Exterior Semi-Gloss Enamel Paint (5050)

High Gloss – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

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Flat – Professional, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

20. WOOD – Paint Finish, Urethane Alkyd, Low VOC, Water-Reducible Enamel

Semi-Gloss – Urethane Alkyd:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

Satin – Urethane Alkyd:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

21. WOOD – Stain Finish – Water-Based, Semi-Transparent

Semi-Transparent – Premium, 100% Acrylic:

Two Coats: BEHR PREMIUM® Semi-Transparent Waterproofing Stain & Sealer (5077)
(5117 Russet, 5129 Chocolate, 5330 Redwood; 5533 Cedar Naturaltone)

22. WOOD – Stain Finish – Water-Based, Solid Color

Flat – Premium, 100% Acrylic:

Two Coats: BEHR PREMIUM® Solid Color Waterproofing Stain & Sealer (5011)

(50117 Russet, 50129 Chocolate, 50330 Redwood, 50533 Cedar Naturaltone)

Smooth – Premium, 100% Acrylic:

Two Coats: BEHR PREMIUM Advanced DeckOver® Smooth Coating (5000)

Textured – Premium, 100% Acrylic:

Two Coats: BEHR PREMIUM Advanced DeckOver® Textured Coating (5005)

23. WOOD – Transparent, Oil Based Natural Finish

One Coat: BEHR® PREMIUM® Transparent Waterproofing Oil Wood Finish (4500)

24. WOOD – Semi-Transparent, Oil Based Stain & Sealer

One Coat: BEHR® PREMIUM® Semi-Transparent Waterproofing Oil Stain & Sealer (4600)

25. WOOD – Clear Finish, Water-Based Spar Urethane

Satin – Clear Urethane

Three Coats: BEHR® Water-Based Spar Urethane Satin (B8200)

Semi-Gloss – Clear Urethane

Three Coats: BEHR® Water-Based Spar Urethane Semi-Gloss (B8202)

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Gloss – Clear Urethane

Three Coats: BEHR® Water-Based Spar Urethane Gloss (B8204)

26. WOOD – Decks, Floors, Walkways, Porches and Patios

Low-Lustre – Premium, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Low-Lustre (6050)

27. WOOD – Decks, Floors, Walkways, Porches and Patios

Anti-Slip, Textured Low-Lustre – Premium, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PREMIUM® Anti-Slip Porch & Patio Floor Paint, Textured Low-Lustre (6250)

28. WOOD – Decks, Floors, Walkways, Porches and Patios

Gloss – Premium, 100% Acrylic:

Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)

Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Gloss (6705)

29. STEEL, FERROUS METAL

Flat – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Semi-Gloss – Premium, 100% Acrylic

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Exterior Semi-Gloss Enamel Paint (5050)

High Gloss – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

30. STEEL, FERROUS METAL – Urethane Alkyd, Low VOC, Water-Reducible

Satin – Urethane Alkyd:

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Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

Semi-Gloss – Urethane Alkyd:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

31. STEEL, FERROUS METAL – Light Industrial Coating, Water-Based

Eggshell – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Eggshell Paint (7200)

Semi-Gloss – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

32. GALVANIZED METAL

Flat – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM PLUS® Exterior Flat Paint (4050)

Satin – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM PLUS® Exterior Satin Enamel Paint (9050)

Semi-Gloss – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM PLUS® Exterior Semi-Gloss Enamel Paint (5050)

High Gloss – Premium, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PRO® e600 Exterior Flat Paint (PR610)

Satin – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: EHR PRO® e600 Exterior Satin Paint (PR640)

Semi-Gloss – Professional, 100% Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PRO® e600 Exterior Semi-Gloss Paint (PR670)

33. GALVANIZED METAL – Urethane Alkyd, Low VOC, Water-Reducible Enamel

Satin – Urethane Alkyd:

Primer: BEHR® Interior/Exterior Metal Primer (435)
Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

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Semi-Gloss – Urethane Alkyd:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

34. GALVANIZED METAL – Light Industrial Coating, Water-Based

Eggshell – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Eggshell Paint (7200)

Semi-Gloss – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

INTERIOR PAINT SCHEDULE

1. GYPSUM BOARD

Flat – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

High-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)

Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Drywall Plus Interior Primer & Sealer (73)

Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

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2. GYPSUM BOARD – High Performance Architectural Latex Finish
Flat – High Performance, 100% Acrylic, Low Odor/Low VOC:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR ULTRA® Interior Extra Durable Flat Paint (1720)

Eggshell – High Performance, 100% Acrylic, Low Odor/Low VOC:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR ULTRA® Interior Eggshell Enamel (2750)

Semi-Gloss – High Performance, 100% Acrylic, Low Odor/Low VOC:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR ULTRA® Interior Semi-Gloss Enamel (3750)
3. GYPSUM BOARD – High Performance Epoxy-Modified Latex Finish
Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss – High Performance Waterborne Epoxy, Low VOC Coating
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)
4. GYPSUM BOARD - Urethane Alkyd, Low VOC, Water-Reducible Enamel
Satin – Urethane Alkyd:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

Semi-Gloss – Urethane Alkyd:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)
5. GYPSUM BOARD – CEILINGS
Flat – Professional, , Low VOC:
Primer: BEHR® Drywall Plus Interior Drywall Primer & Sealer (73)
Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)
6. GYPSUM BOARD – DRY FALL COATING (Spray Applied)
Flat – Professional, 100% Acrylic, Low VOC:
Two Coats: BEHR PRO® HPC Waterborne Acrylic Dryfall Paint White (HP210) Black (HP211)
7. CONCRETE, CONCRETE PRE-CAST, PLASTER and MASONRY
Flat – Premium, 100% Acrylic, Low Odor/Low VOC:
Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low Odor/Low VOC:
Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

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Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

High-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

8. CONCRETE, PLASTER AND MASONRY – High Performance Architectural Latex Finish
Flat – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR ULTRA® Interior Extra Durable Flat Paint (1720)

Eggshell – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR ULTRA® Interior Eggshell Enamel (2750)

Semi-Gloss – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR ULTRA® Interior Semi-Gloss Enamel (3750)

9. CONCRETE, PLASTER and MASONRY – High Performance Epoxy-Modified Latex Finish
Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR PRO® Concrete & Masonry Primer (PR060)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

10. CONCRETE, Decks, Floors, Walkways, Porches and Patios

Low-Lustre – Premium, 100% Acrylic:

Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)

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Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Low-Lustre (6050)

11. CONCRETE, Decks, Floors, Walkways, Porches and Patios

Gloss – Premium, 100% Acrylic:

Primer: BEHR PREMIUM® Concrete & Masonry Bonding Primer (880)

Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Gloss (6705)

12. CONCRETE MASONRY UNITS (CMU)

Flat – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

Flat – Professional, Latex, Low Odor/Low VOC

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

13. CONCRETE MASONRY UNITS (CMU) – High Performance Architectural Latex Finish

Flat – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR ULTRA® Interior Extra Durable Flat Paint (1720)

Eggshell – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR ULTRA® Interior Eggshell Enamel (2750)

Semi-Gloss – High Performance, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR ULTRA® Interior Semi-Gloss Enamel (3750)

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14. CONCRETE MASONRY UNITS (CMU) – High Performance Coating Epoxy-Modified Latex Finish

Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss– High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR PRO® Block Filler Primer (PR050)

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

15. STEEL, FERROUS METAL

Flat – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

High Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

16. STEEL, FERROUS METAL – High Performance Coating Epoxy-Modified Latex Finish

Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss– High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Interior/Exterior Metal Primer (435)

PAINTING AND COATINGS SECTION 09 90 00

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

17. STEEL, FERROUS METAL - Urethane Alkyd, Low VOC, Water-Reducible Enamel

Satin – Urethane Alkyd, Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

Semi-Gloss – Urethane Alkyd, Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

18. STEEL, FERROUS METAL – Light Industrial Coating, Water-Based

Eggshell – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Eggshell Paint (7200)

Semi-Gloss – Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

19. GALVANIZED METAL

Flat – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

High Gloss – Premium, 100% Acrylic, Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

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Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

20. NON-FERROUS METAL – High Performance Coating Epoxy-Modified Latex Finish
Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss– High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

21. GALVANIZED METAL – Urethane Alkyd, Low VOC, Water-Reducible Enamel

Satin – Urethane Alkyd, Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

Semi-Gloss – Urethane Alkyd, Low VOC:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

22. GALVANIZED METAL – Light Industrial Coating, Water-Based

Eggshell –Light Industrial, Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Eggshell Paint (7200)

Semi-Gloss –Light Industrial, Premium, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PREMIUM® Interior/Exterior Direct-To-Metal Semi-Gloss Paint (3200)

23. FERROUS and NON-FERROUS METALS – Dry Fall Coating (Spray applied)

Flat – Professional, Acrylic:

Primer: BEHR® Interior/Exterior Metal Primer (435)

Two Coats: BEHR PRO® HPC Waterborne Dryfall Paint, White (HP210) Black (HP211)

24. WOOD – Opaque Paint Finish

Flat – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)

Two Coats: BEHR PREMIUM PLUS® Interior Flat Paint (1050)

Eggshell – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)

Two Coats: BEHR PREMIUM PLUS® Interior Eggshell Enamel Paint (2050)

Satin – Premium, 100% Acrylic, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)

Two Coats: BEHR PREMIUM PLUS® Interior Satin Enamel Paint (7050)

Semi-Gloss – Premium, 100% Acrylic, Low Odor/Low VOC:

PAINTING AND COATINGS SECTION 09 90 00

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PREMIUM PLUS® Interior Semi-Gloss Enamel Paint (3050)

High Gloss – Premium, 100% Acrylic, Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PREMIUM PLUS® Interior/Exterior Hi-Gloss Enamel Paint (8150)

Flat – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® i300 Interior Dead Flat Paint (PR310)

Eggshell – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® i300 Interior Eggshell Paint (PR330)

Semi-Gloss – Professional, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® i300 Interior Semi-Gloss Paint (PR370)

25. WOOD – High Performance Architectural Latex Finish

Flat – High Performance, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR ULTRA® Interior Extra Durable Flat Paint (1720)

Eggshell – High Performance, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR ULTRA® Interior Eggshell Enamel (2750)

Semi-Gloss – High Performance, Latex, Low Odor/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR ULTRA® Interior Semi-Gloss Enamel (3750)

26. WOOD – High Performance Coating Epoxy-Modified Latex Finish

Eggshell – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Eggshell (HP140)

Semi-Gloss – High Performance Waterborne Epoxy, Low VOC Coating:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® Pre-Catalyzed Waterborne Epoxy Semi-Gloss (HP150)

27. WOOD – Paint Finish, Urethane Alkyd, Low VOC, Water-Reducible Enamel

Satin – Urethane Alkyd, Low/Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PREMIUM ® Interior/Exterior Urethane Alkyd Satin Enamel (7900)

Semi-Gloss – Urethane Alkyd, Low VOC:

Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PREMIUM ® Interior/Exterior Urethane Alkyd Semi-Gloss Enamel (3900)

PAINTING AND COATINGS SECTION 09 90 00

28. WOOD – Dry Fall Coating (Spray applied)
Flat – Professional, Acrylic:
Primer: BEHR® Acrylic-Alkyd Enamel Undercoater (437)
Two Coats: BEHR PRO® HPC Waterborne Dryfall Paint, White (HP210) Black (HP211)
29. WOOD, Decks, Floors, Walkways, Porches and Patios
Low-Lustre – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Low-Lustre (6050)
30. WOOD, Decks, Floors, Walkways, Porches and Patios
Anti-Slip Paint, Textured, Low-Lustre – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM® Anti-Slip Porch & Patio Floor Paint, Textured Low-Lustre (6250)
31. WOOD, Decks, Floors, Porches and Patios
Gloss – Premium, 100% Acrylic:
Primer: BEHR® Multi-Surface Interior/Exterior Primer & Sealer (436)
Two Coats: BEHR PREMIUM® Porch & Patio Floor Paint Gloss (6705)
32. WOOD – Stained, Water-Based Polyurethane over Oil-Based Semi-Transparent Stain
Matte, Clear, Water-Based Polyurethane over Interior Stain
Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Advanced Formula Oil-Based Wood Stain (B3500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8106) Matte
- Satin, Clear, Water-Based Polyurethane over Interior Stain
Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Advanced Formula Oil-Based Wood Stain (B3500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8100) Satin
- Semi-Gloss, Clear, Water-Based Polyurethane over Interior Stain
Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Advanced Formula Oil-Based Wood Stain (B3500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8102) Semi-Gloss
- Gloss, Clear, Water-Based Polyurethane over Interior Stain
Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Advanced Formula Oil-Based Wood Stain (B3500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8104) Gloss
33. WOOD – Stained, Water-Based Polyurethane over Water-Based Semi-Transparent Stain
Matte, Clear, Water-Based Polyurethane over Interior Stain
Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)

PAINTING AND COATINGS SECTION 09 90 00

*Only for use on softwoods.

Stain Coat: BEHR® Fast Drying Water-Based Wood Stain (B4500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8106) Matte

Satin, Clear, Water-Based Polyurethane over Interior Stain

Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Fast Drying Water-Based Wood Stain (B4500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8100) Satin

Semi-Gloss, Clear, Water-Based Polyurethane over Interior Stain

Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Fast Drying Water-Based Wood Stain (B4500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8102) Semi-Gloss

Gloss, Clear, Water-Based Polyurethane over Interior Stain

Sealer: BEHR® Water-Based Pre-Stain Conditioner (B2080)
*Only for use on softwoods.
Stain Coat: BEHR® Fast Drying Water-Based Wood Stain (B4500)
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8104) Gloss

34. WOOD – Natural, Clear Water-Based Polyurethane

Matte, Clear, Water-Based Polyurethane

Sealer Coat: BEHR® Fast Dry Water-Based Polyurethane (B8106) Matte
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8106) Matte

Satin, Clear, Water-Based Polyurethane

Sealer Coat: BEHR® Fast Dry Water-Based Polyurethane (B8100) Satin
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8100) Satin

Semi-Gloss, Clear, Water-Based Polyurethane

Sealer Coat: BEHR® Fast Dry Water-Based Polyurethane (B8102) Semi-Gloss
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8102) Semi-Gloss

Gloss, Clear, Water-Based Polyurethane

Sealer Coat: BEHR® Fast Dry Water-Based Polyurethane (B8104) Gloss
Two Coats: BEHR® Fast Dry Water-Based Polyurethane (B8104) Gloss

END OF SECTION 09 90 00



Paint
Company

City of Chester – 517-519 Avenue of the States

March 21, 2025



Architect:

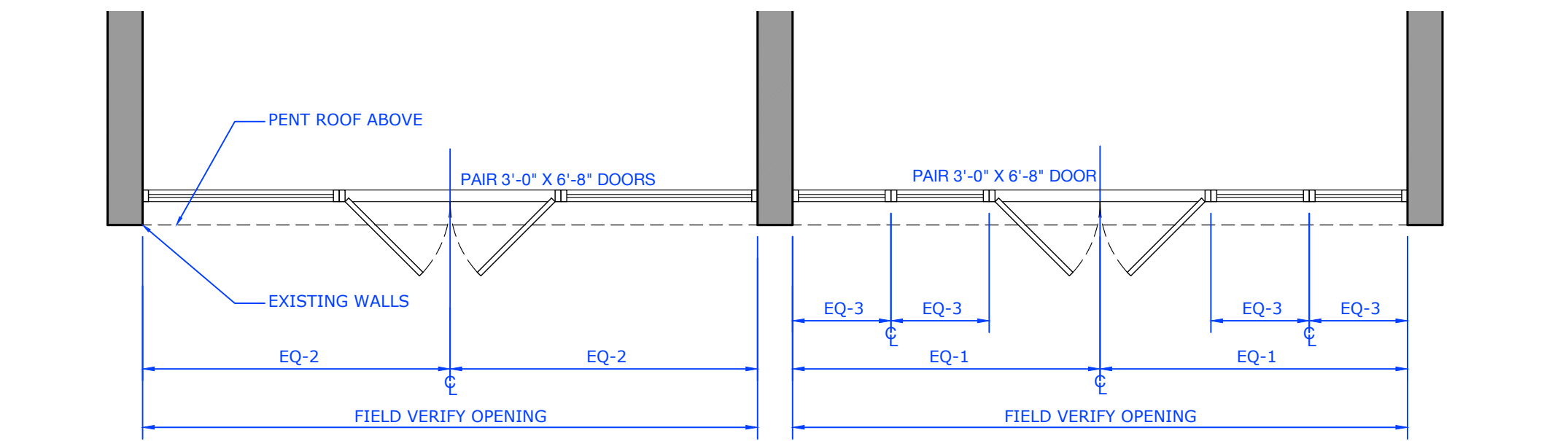
THINKArchitecture

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(610) 453-7874

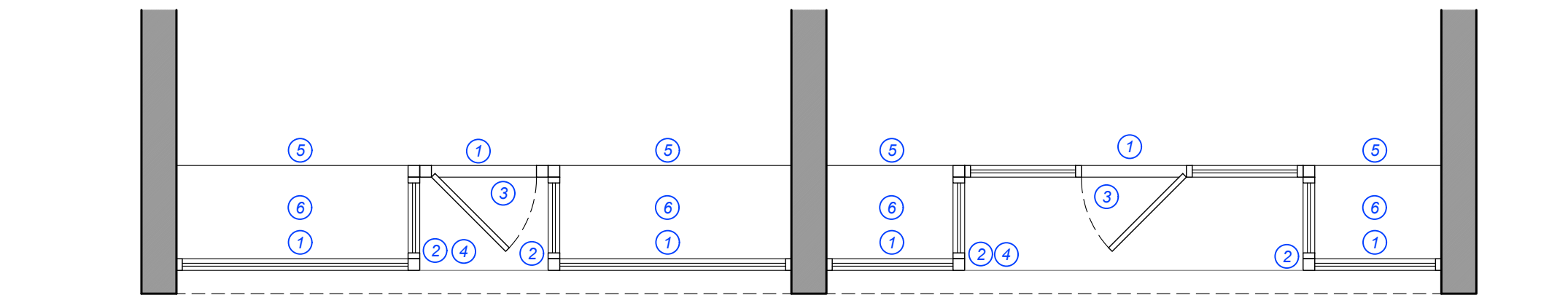
Contact: Ed Rahme AIA, LEED-AP



5 PROPOSED FACADE - FLOOR PLAN
A101 SCALE: 1/4" = 1'-0"



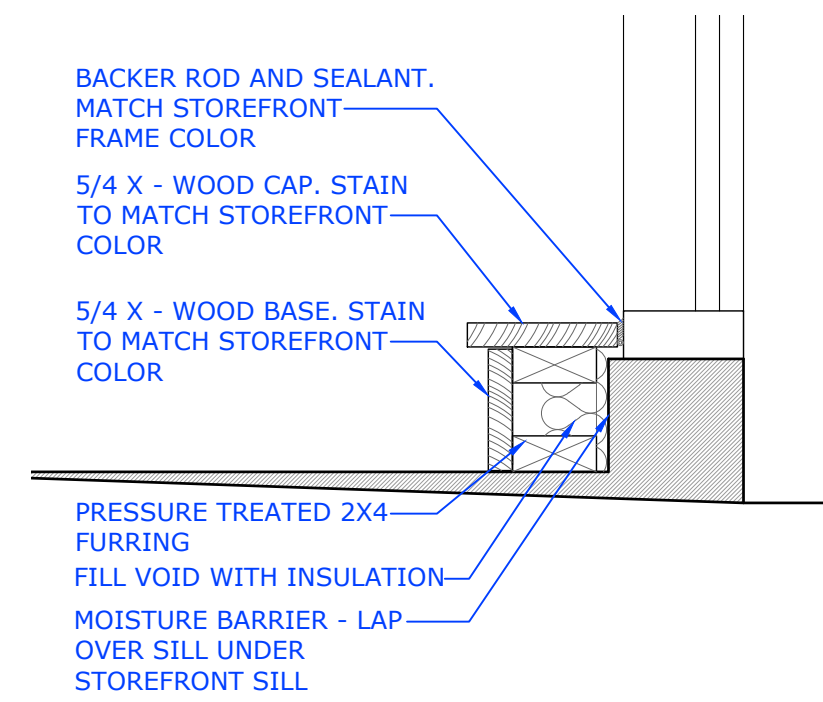
4 PROPOSED FACADE - RENDERING
A101 SCALE: N.T.S.



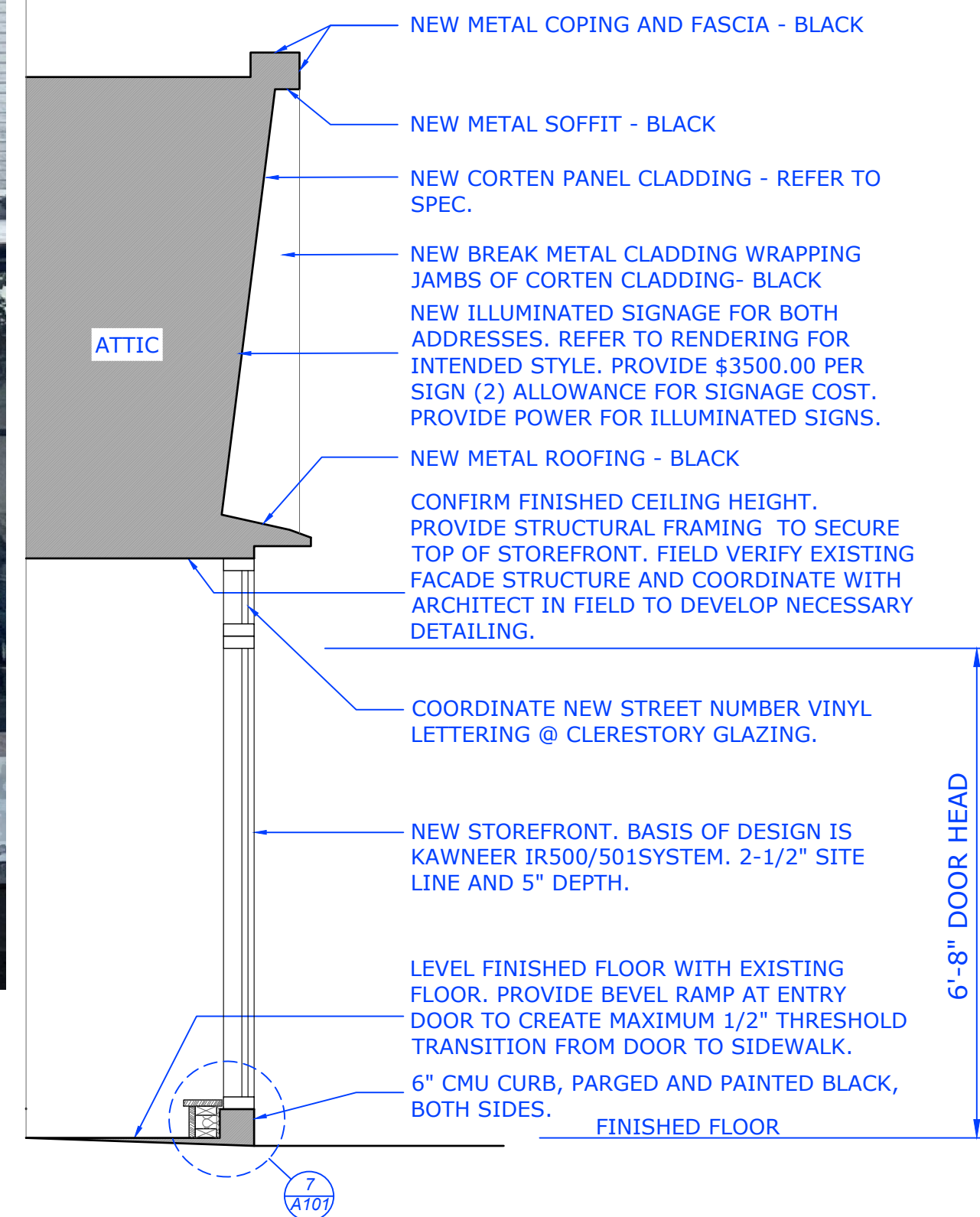
2 DEMO - FLOOR PLAN
A101 SCALE: 1/4" = 1'-0"



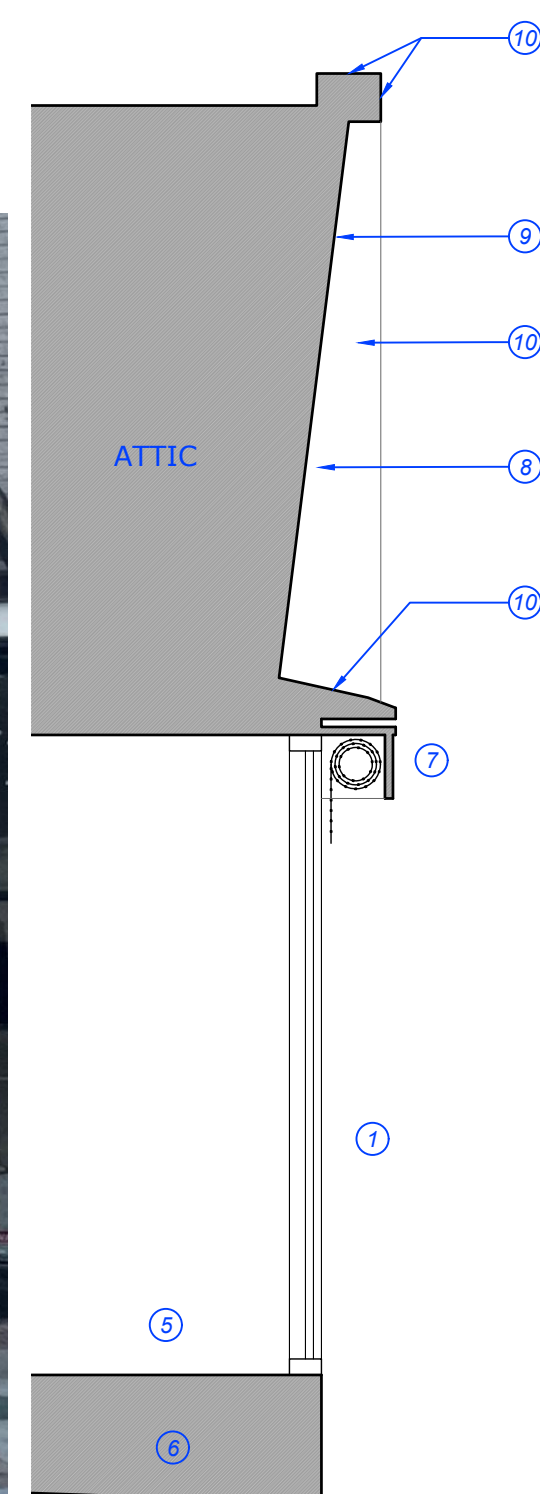
1 EXISTING CONDITION PHOTO
A101 SCALE: N.T.S.



7 SECTION @ STOREFRONT SILL
A101 SCALE: 1-1/2" = 1'-0"



6 PROPOSED FACADE - SECTION
A101 SCALE: 1/2" = 1'-0"



3 DEMO FACADE - SECT.
A101 SCALE: 1/2" = 1'-0"

GENERAL DEMOLITION NOTES

VERIFY EXISTING CONDITIONS PRIOR TO START OF REMOVAL ACTIVITIES. COORDINATE REMOVALS WITH SCOPE OF NEW CONSTRUCTION.

COORDINATE TEMPORARY BRACING, SHORING AND STRUCTURAL SUPPORT DURING REMOVAL ACTIVITIES. COORDINATE TEMPORARY SUPPORTS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO REMOVAL OF EXISTING CONSTRUCTION.

EXISTING CONSTRUCTION AND FINISHES SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED. PROTECT FROM DAMAGE DURING CONSTRUCTION AND RESTORE OR REPLACE DAMAGED ELEMENTS TO PRE-CONSTRUCTION CONDITION.

PROTECT ALL EXISTING EQUIPMENT INDICATED TO REMAIN DURING CONSTRUCTION ACTIVITIES. PROTECTION SHALL INCLUDE PLASTIC SHEETING, TEMPORARY PARTITIONS OR OTHER MEASURES AS REQUIRED BY OWNER.

MATERIALS REMOVED DURING CONSTRUCTION ARE TO BE RECYCLED TO THE GREATEST EXTENT POSSIBLE.

WHERE EQUIPMENT ANCHORED TO BUILDING CONSTRUCTION IS INDICATED FOR REMOVAL BUT BUILDING CONSTRUCTION WILL REMAIN, REMOVE ANCHORING DEVICES IN THEIR ENTIRETY. DO NOT CUT ANCHORING DEVICES AND LEAVE PORTIONS EMBEDDED IN EXISTING CONSTRUCTION TO REMAIN.

WHEN REMOVING EXISTING FINISHED FLOOR ASSEMBLIES, REMOVE ALL COMPONENTS TO THE ORIGINAL SUBFLOOR. REMOVE ALL LOOSE MATERIALS INCLUDING ADHESIVES AND RENDER THE SUBFLOORING READY FOR REFINISHING OPERATIONS OR APPLICATION OF NEW FINISHED FLOOR AS NOTED.

COORDINATE DEMOLITION ACTIVITIES WITH THE WORK OF ALL SUBCONTRACTORS.

COORDINATE THE REMOVAL OF ANY HAZARDOUS MATERIALS WITH THE OWNER & ARCHITECT.

WHEN REMOVING WALLS CONTAINING ELECTRICAL EQUIPMENT - OUTLETS, SWITCHES, ETC. - REROUTE WIRING FOR INSTALLATION OF FIXTURE IN NEW LOCATION.

RELOCATION OF OPENINGS MAY NECESSITATE THE RELOCATION OF OUTLETS, SWITCHES ETC. COORDINATE WITH ARCHITECT IN FIELD REGARDING NEW LOCATIONS FOR RELOCATED FIXTURES.

DEMOLITION NOTES (XX)

- REMOVE EXISTING STOREFRONT, HARDWARE, ANCHORAGES, FRAME & TRIM. PREP SURROUNDING WALLS, FLOOR AND CEILING FOR THE INTRODUCTION OF NEW STOREFRONT.
- REMOVE EXISTING KNEE WALLS AND DISPLAY SHELVES. PREP FLOOR UNDER WALLS AND SHELVES FOR INTRODUCTION OF NEW FLOORING TO MATCH EXISTING.
- REMOVE EXISTING DOOR, DOOR HARDWARE, DOOR FRAME & TRIM. COORDINATE REMOVAL OF SURROUNDING WALL WITH SIZE OF PROPOSED DOOR/FRAME.
- COORDINATE REMOVAL OR PREPARATION OF EXISTING LIGHT FIXTURES THAT INTERFERE WITH NEW CONSTRUCTION. TERMINATE WIRING IN ACCORDANCE WITH APPLICABLE CODES IN PREPARATION FOR INSTALLATION OF NEW FIXTURES.
- REMOVE BUILT-IN CABINETRY, FIXTURES, FITTINGS AND SHELVING DOWN TO SUBSTRATE. REMOVE ALL BRACKETS AND ANCHORING DEVICES PER GENERAL DEMOLITION NOTES.
- REMOVE EXISTING FINISH FLOOR. COORDINATE EXTENT OF DEMOLITION WITH REQUIREMENTS OF NEW CONSTRUCTION.
- REMOVE EXISTING ROLL UP SECURITY GATES, GATE TRACKS, SECURITY GATE SPINDLE STRUCTURE INCLUDING ANCHORAGES.
- REMOVE EXISTING SIGNAGE - SALVAGE FOR REUSE.
- REMOVE EXISTING SIDING MATERIAL AND MOISTURE BARRIER. CONFIRM THE INTEGRITY OF THE SUBSTRATE. IF SUBSTRATE IS COMPROMISED, ROTTED, CRACKED, ETC., NOTIFY ARCHITECT IN WRITING PRIOR TO REPLACEMENT - COORDINATE WITH ARCHITECT IN FIELD.
- REMOVE METAL COPING AND SURROUNDS. PREP SUBSTRATE FOR NEW COPING AND BREAK-METAL SURROUNDS.

517-519 Avenue of the States
Chester, PA 19013
City of Chester

DEMO AND PROPOSED PLANS

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REVISIONS:

DATE	REVISION #

DATE	03/21/2025
SCALE	
DRAWN	
CHECK	
FILE	

ED RAHME ARCHITECT
2006 LENAPE UNIONVILLE ROAD
KENNETT SQUARE PA, 19348
p: 610 453 7874

A101

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- KAWNEER STOREFRONT (Basis of Design)
- CORTEN PANELS
- GYPSUM BOARD
- METAL COPING
- KYNAR PAINT
- PAINT (Basis of Design)

END OF TABLE OF CONTENTS

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
 - 1. Exterior joints in the following conditions:
 - a. Perimeter joints between materials listed in other Sections of this specification and frames of doors and windows.
 - b. Roofing Sealants as required by roofing products manufacturers.
 - c. Other joints as indicated.
 - 2. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
 - a. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and baseboards
 - b. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - c. Other joints as indicated.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

- D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- E. Field Test Report Log: For each elastomeric sealant application.
- F. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than four pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the commencement of the Work.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
 - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
 - 3. Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

4. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
 2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of nonelastomeric sealant and joint substrate indicated.
 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
- F. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F
 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids: Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component Nonsag Urethane Sealant [ES-~~#~~]:
 - 1. Products:
 - a. Sika Corporation, Inc.; Sikaflex - 1a.
 - b. Sonneborn, Division of ChemRex Inc.; Ultra.
 - c. Sonneborn, Division of ChemRex Inc.; NP 1.
 - d. Tremco; Vulkem 116.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood
- F. Single-Component Nonsag Urethane Sealant
 - 1. Products:

- a. Bostik Findley; Chem-Calk 900.
 - b. Bostik Findley; Chem-Calk 915.
 - c. Bostik Findley; Chem-Calk 916 Textured.
 - d. Bostik Findley; Chem-Calk 2639.
 - e. Pecora Corporation; Dynatrol I-XL.
 - f. Polymeric Systems Inc.; Flexiprene 1000.
 - g. Polymeric Systems Inc.; PSI-901.
 - h. Schnee-Morehead, Inc.; Permthane SM7100.
 - i. Schnee-Morehead, Inc.; Permthane SM7108.
 - j. Schnee-Morehead, Inc.; Permthane SM7110.
 - k. Sika Corporation, Inc.; Sikaflex - 15LM.
 - l. Tremco; DyMonic.
 - m. Tremco; Vulkem 921.
 - n. Tremco; Vulkem 931.
- 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25 and 50
 - 4. Use Related to Exposure: NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood

2.4 LATEX JOINT SEALANTS

- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.
- B. Products:
 - 1. Bostik Findley; Chem-Calk 600.
 - 2. Pecora Corporation; AC-20+.
 - 3. Schnee-Morehead, Inc.; SM 8200.
 - 4. Sonneborn, Division of ChemRex Inc.; Sonolac.
 - 5. Tremco; Tremflex 834.

2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at

temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

- F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 4. Provide flush joint configuration where indicated per Figure 5B in ASTM C 1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- H. Installation of Preformed Tapes: Install according to manufacturer's written instructions.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed elastomeric sealant joints as follows:
 - a. Perform two tests for the first 20 feet of joint length for each type of elastomeric sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
 4. Inspect tested joints and report on the following:
 - a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

- b. Whether sealants filled joint cavities and are free of voids.
 - c. Whether sealant dimensions and configurations comply with specified requirements.
 - 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07920

SECTION 084113: ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

This suggested guide specification has been developed using the current edition of the Construction Specifications Institute (CSI) "Manual of Practice," including the recommendations for the CSI three-part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MasterSpec® Program has been recognized in the preparation of this guide specification. Neither CSI, AIA, USGBC, nor ILFI endorse specific manufacturers and products. The preparation of the guide specification assumes the use of standard contract documents and forms, including the "Conditions of the Contract," published by the AIA.

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section covers Kawneer Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of storefront units.
- B. Types of Kawneer Aluminum Storefront Systems include:
 - 1. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication

1.3 DEFINITIONS

- A. For fenestration industry standard terminology and definitions, refer to the Fenestration & Glazing Industry Alliance (FGIA) Glossary (AAMA AG-13).

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance:
 - 1. Product to comply with the specified performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction, as determined by testing of aluminum storefront systems representing those indicated for this project.
 - 2. Aluminum storefront systems shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 - 3. Failure includes any of these events:
 - a. Thermal stresses transferring to building structure
 - b. Glass breakage

- c. Loosening or weakening of fasteners, attachments, and other components
 - d. Failure of operating units
- B. Delegated Design:
 - 1. Design aluminum storefront systems, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- C. Air Leakage:
 - 1. The test specimen shall be tested in accordance with ASTM E 283.
 - 2. With interior seal, air leakage rate shall not exceed 0.06 cfm/ft² (0.3 l/s · m²) at a static air pressure differential of 6.2 psf (300 Pa).
 - 3. Without interior seal, air leakage rate shall not exceed 0.06 cfm/ft² (0.3 l/s · m²) at a static air pressure differential of 1.6 psf (75 Pa).
 - 4. CSA A440 Fixed Rating
- D. Water Resistance:
 - 1. The test specimen shall be tested in accordance with ASTM E 331.
 - 2. There shall be no leakage at a minimum static air pressure differential of 10 psf (479 Pa) as defined in AAMA 501.
 - 3. CSA A440 B5 Rating
- E. Uniform Load Structural:
 - 1. A static air design load of 30 psf (1436 Pa) shall be applied in the positive and negative direction in accordance with ASTM E 330.
 - 2. There shall be no deflection in excess of L/175 of the span of any framing member.
 - 3. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
 - 4. CSA A440 C2 Rating
 - 5. If using CI: When tested to CSA A-440, the CI shall not be less than listed here:
 - a. Trifab® Versaglaze® 601 Framing System, Front Plane 38_{frame} and 57_{glass} (low-e)
 - b. Trifab® Versaglaze® 601T Framing System, Front Plane 63_{frame} and 61_{glass} (low-e)
 - c. Trifab® Versaglaze® 601UT Framing System, Front Plane 68_{frame} and 65_{glass} (low-e)
- F. Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC):
 - 1. Sound transmission loss test results in accordance with AAMA 1801 are based upon 1" (25.4 mm) clear double laminated insulating glass with PVB interlayer (1/8", 0.030", 1/8", 1/2" AS, 1/8", 0.030", 1/8").
 - 2. Ratings shall not be less than listed here:
 - a. Trifab® VersaGlaze® 601/601T/601UT Framing System, Center Plane laminated glass STC 37 and OITC 31
 - b. Trifab® VersaGlaze® 601/601T/601UT Framing System, Front Plane laminated glass STC 36 and OITC 30
 - c. Trifab® VersaGlaze® 601/601T/601UT Framing System, Front Plane non-laminated glass STC 31 and OITC 25

- G. Impact Resistance Performance (Center Plane Only):
 - 1. The test specimen shall be tested in accordance with ASTM E 1886, information in ASTM E 1996 and TAS 201/203.
 - 2. Large-Missile Impact: For aluminum-framed systems located within 30 feet (9.1 m) of grade.
 - 3. Small-Missile Impact: For aluminum-framed systems located above 30 feet (9.1 m) of grade.
- H. Environmental Product Declaration (EPD): Shall have a Type III Product-Specific EPD created from a Product Category Rule.
- I. Material Ingredient Reporting:
 - 1. Shall have a complete list of chemical ingredients to at least 100 ppm (0.01%) that covers 100% of the product.
 - 2. Acceptable documentation includes:
 - a. Manufacturer's inventory with Chemical Abstract Service Registration Number (CASRN or CAS#):
 - 1) Kawneer's Material Transparency Summary (MTS)
 - b. (Trifab® Versaglaze® 601T and 601UT only)Cradle to Cradle certification; either document listed below is acceptable for this option:
 - 1) Cradle to Cradle Certified™ with Material Health section Silver or higher
 - 2) Silver Level or higher Material Health Certificate
 - c. Red List Free DECLARE label

1.5 SUBMITTALS

- A. Product Data:
 - 1. For each type of aluminum-framed storefront system indicated, include:
 - a. Construction details
 - b. Material descriptions
 - c. Dimensions of individual components and profiles
 - d. Hardware
 - e. Finishes
 - f. Installation instructions
 - 2. Recycled Content:
 - a. Provide documentation that aluminum has a minimum of 50% mixed pre- and post-consumer recycled content.
 - b. Provide a sample document illustrating project-specific information that will be provided after product shipment.
 - c. After product has shipped, provide project-specific recycled content information:
 - 1) Indicate recycled content, including the percentage of pre- and post-consumer recycled content per unit of product.
 - 2) Indicate the relative dollar value of recycled content product to the total dollar value of product included in the project.
 - 3) Indicate the location for recovery of recycled content.
 - 4) Indicate the location of the manufacturing facility.

3. Environmental Product Declaration (EPD):
 - a. Include a Type III Product-Specific EPD created from a Product Category Rule.
4. Material Ingredient Reporting:
 - a. Include documentation for material reporting that has a complete list of chemical ingredients to at least 100 ppm (0.01%) that covers 100% of the product.
- B. Shop Drawings:
 1. Plans
 2. Elevations
 3. Sections
 4. Details
 5. Hardware
 6. Attachments to other work
 7. Operational clearances
 8. Installation details
- C. Samples for Initial Selection:
 1. Provide samples for units with factory-applied color finishes.
 2. Provide samples of hardware and accessories involving color selection.
- D. Samples for Verification:
 1. Provide a verification sample for aluminum-framed storefront system and required components.
- E. Product Test Reports:
 1. Provide test reports for each type of aluminum-framed storefront used in the project.
 2. Test reports must be based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency.
 3. Test reports must indicate compliance with performance requirements.
- F. Fabrication Sample:
 1. Provide a fabrication sample of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12" (304.8 mm) lengths of full-size components and showing details of the following:
 - a. Joinery, including concealed welds
 - b. Anchorage
 - c. Expansion provisions
 - d. Glazing
 - e. Flashing and drainage
- G. Entrance Door Hardware Schedule:
 1. Schedule shall be prepared by or under the supervision of supplier.
 2. Schedule shall detail fabrication and assembly of entrance door hardware, including procedures and diagrams.

3. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer must have successfully installed the same or similar units required for the project and other projects of similar size and scope.

B. Manufacturer Qualifications:

1. Manufacturer must be capable of providing aluminum-framed storefront systems that meet or exceed performance the stated performance requirements.
2. Manufacturer must document this performance by the inclusion of test reports and calculations.

C. Source Limitations:

1. Obtain aluminum-framed storefront system through one source from a single manufacturer.

D. Product Options:

1. Drawings indicate size, profiles, and dimensional requirements of aluminum-framed storefront system and are based on the specific system indicated. Refer to Division 01 Product Requirements Section. Do not modify size and dimensional requirements.
2. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Mockups:

1. Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
2. Build mockups for the type(s) of storefront elevation(s) indicated, in location(s) shown on drawings.

F. Pre-installation Conference:

1. Conduct conference at project site to comply with requirements in Division 01 Project Management and Coordination Section.

G. Structural-Sealant Glazing must comply with ASTM C 1401, "Guide for Structural Sealant Glazing" for design and installation of structural-sealant-glazed systems.

H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

1.7 PROJECT CONDITIONS

A. Field Measurements:

1. Verify actual dimensions of aluminum-framed storefront openings by field measurements before fabrication.
2. Indicate measurements on shop drawings.

1.8 WARRANTY

- A. Submit manufacturer's standard warranty for owner's acceptance.
- B. Warranty Period:
 - 1. Two years from Date of Substantial Completion of the project provided however that in no event shall the Limited Warranty begin later than six months from date of shipment by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product:
 - 1. Kawneer Company, Inc.
 - 2. Trifab® Versaglaze® 601 Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Non-thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 3. Trifab® Versaglaze® 601T Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 4. Trifab® Versaglaze® 601T Framing System - Impact Glazing
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 5. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 6. Trifab® Versaglaze® 601 Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Non-thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
 - 7. Trifab® Versaglaze® 601T Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal

- c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
 - 8. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
- B. Subject to compliance with requirements, provide a comparable product by the following:
 - 1. Manufacturer: (_____)
 - 2. Series: (_____)
 - 3. Profile Dimension: (_____)
- C. Substitutions:
 - 1. Refer to Division 01 Substitutions Section for procedures and submission requirements.
 - 2. Pre-Contract (Bidding Period) Substitutions:
 - a. Submit written requests ten (10) days prior to bid date.
 - 3. Post-Contract (Construction Period) Substitutions:
 - a. Submit written request in order to avoid installation and construction delays.
 - 4. Product Literature and Drawings:
 - a. Submit product literature and drawings modified to suit specific project requirements and job conditions.
 - 5. Certificates:
 - a. Submit certificate(s) certifying that the substitute manufacturer (1) attests to adherence to specification requirements for storefront system performance criteria, and (2) has been engaged in the design, manufacture, and fabrication of aluminum storefronts for a period of not less than ten (10) years. (*Company Name*)
 - 6. Test Reports:
 - a. Submit test reports verifying compliance with each test requirement required by the project.
 - 7. Samples:
 - a. Provide samples of typical product sections and finish samples in manufacturer's standard sizes.
- D. Substitution Acceptance:
 - 1. Acceptance will be in written form, either as an addendum or modification.
 - 2. Acceptance will be documented by a formal change order signed by the owner and contractor.

2.2 MATERIALS

- A. Aluminum Extrusions:
 - 1. Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish.
 - 2. Not less than 0.070" (1.8 mm) wall thickness at any location for the main frame

3. Complying with ASTM B221: 6063-T6 alloy and temper
4. Recycled Content:
 - a. Shall have a minimum of 50% mixed pre- and post-consumer recycled content.
 - b. Indicate recycled content, including the percentage of pre- and post-consumer recycled content per unit of product.
 - c. Indicate the relative dollar value of recycled content product to the total dollar value of product included in the project.
 - d. Indicate the location for recovery of recycled content.
 - e. Indicate the location of the manufacturing facility.

- B. Fasteners:
 - 1. Nonmagnetic stainless steel or other materials must be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.
- C. Anchors, Clips, and Accessories:
 - 1. Anchors, clips, and accessories shall provide sufficient strength to withstand the design pressure indicated.
- D. Reinforcing Members:
- E. Sealant:
 - 1. For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- F. Tolerances:
 - 1. References to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
- G. Red List Free:
 - 1. All parts and materials comply with the Living Building Challenge/DECLARE Red List and the Cradle-to-Cradle (C2C) Banned List:
 - a. PVC-free
 - b. Neoprene-free
 - 2. Product does not contain PVC or Neoprene.

2.3 STOREFRONT FRAMING SYSTEM

- A. Thermal Barrier:
 - 1. Trifab® Versaglaze® 601T:
 - a. Kawneer IsoLock™ Thermal Break with a nominal 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
 - 2. Trifab® Versaglaze® 601UT:
 - a. Kawneer IsoLock® Thermal Break with dual nominal 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
 - b. Thermal break shall be designed in accordance with AAMA TIR-A8 and tested in accordance with AAMA 505.
- B. Brackets and Reinforcements:
 - 1. Manufacturer's standard high-strength aluminum with non-staining, non-ferrous shims for aligning system components.
- C. Fasteners and Accessories:
 - 1. Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories must be compatible with adjacent materials.

2. Where exposed, fasteners and accessories shall be stainless steel.
- D. Perimeter Anchors:
 1. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
- E. Packing, Shipping, Handling, and Unloading:
 1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- F. Storage and Protection:
 1. Store materials so that they are protected from exposure to harmful weather conditions.
 2. Handle material and components to avoid damage.
 3. Protect material against damage from elements, construction activities, and other hazards before, during, and after installation.

2.4 GLAZING SYSTEMS

- A. Glazing to meet requirements in Division 08 Glazing Section.
- B. Glazing Gaskets:
 1. Manufacturer's standard compression types
 2. Replaceable, extruded EPDM rubber
- C. Spacers and Setting Blocks:
 1. Manufacturer's standard elastomeric type
- D. Bond-Breaker Tape:
 1. Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- E. Glazing Sealants for structural-sealant-glazed systems as recommended by manufacturer for joint type, and as follows:
 1. Weatherseal sealant:
 - a. ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O
 - b. Single-component neutral-curing formulation that is compatible with the structural sealant and other system components with which it comes in contact
 - c. Recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use
 - d. Color: Matching structural sealant

2.5 ENTRANCE DOOR SYSTEMS

- A. Refer to Entrance Doors as specified in Division 084113 Aluminum-Framed Entrances and Storefronts Section.
- B. Refer to Entrance Door Hardware as specified in Division 084113 Door Hardware Section.

2.6 ACCESSORY MATERIALS

- A. Versoleil® SunShade:
 - 1. Anchors shall be painted:
 - a. Select from Kawneer's standard paints and colors. Custom colors are available upon request.
 - 2. Louvers and fascia shall be painted or anodized:
 - a. Painted: Select from Kawneer's standard paints and colors. Custom colors are available upon request.
 - b. Anodized: Select from Kawneer's anodized finishes.
- B. InLighten® Light Shelf:
 - 1. Aluminum light shelf system that consists of anchor channels, support beams, fascia trims, and Aluminum Composite Material (ACM) panels.
 - 2. Anchored directly to the curtain wall intermediate horizontal members.
 - 3. Interior-mounted to reflect daylight deeper into interior space.
 - 4. Light Shelf system consists of:
 - a. Aluminum Composite Material (ACM) panel, 4 mm thick.
 - b. Translucent polycarbonate panel, 4 mm or 16 mm thick.
 - c. ACM finish on upper and lower surface selected from Kawneer standard finishes.
 - d. Extruded aluminum outriggers and fascia.
 - e. Extruded aluminum anchor designed to secure to compatible verticals of framing system.
 - f. Anchor shall be designed to engage shelf so as to allow the shelf to rotate down and safely hang on its own for cleaning.
 - g. Extruded aluminum shear blocks designed to hinge on the anchors to allow rotating individual shelves for cleaning.
 - h. Panel/shelf projection not exceeding 30" (762 mm).
 - i. Mullion spacing of framing system shall not exceed 6' (1.83 m) on center.
 - j. Panel/shelf deflection shall not exceed 1/120 of horizontal span length.
 - 5. Framing system to support Light Shelf (select one from list):
 - a. Curtain wall framing system
 - b. Storefront framing system

6. Submittals for Light Shelf:
 - a. Manufacturer's installation instructions
 - b. Samples for verification:
 - 1) Factory-applied finish as selected by architect
 - 2) Functioning Light Shelf sample demonstrating operation
 - c. Shop drawing, including plans, elevations, sections, fabrication, and installation details
 - d. Validation from manufacturer of single-source for light shelf and framing system and compatibility between the systems
- C. Joint Sealants:
 1. For installation at perimeter of aluminum-framed systems, as specified in Division 07 Joint Sealants Section.
- D. Bituminous Paint:
 1. Cold-applied asphalt-mastic paint
 2. Complies with SSPC-Paint 12 requirements except containing no asbestos
 3. Formulated for 30-mil (0.762 mm) thickness per coat

2.7 FABRICATION

- A. Fabricate framing member components that, when assembled, have the following characteristics:
 1. Profiles that are sharp, straight, and free of defects or deformations
 2. Accurately fitted joints that are flush, hairline, and weatherproof
 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior
 4. Physical and thermal isolation of glazing from framing members
 5. Accommodations for thermal and mechanical movements of glazing and framing that maintain required glazing edge clearances
 6. Provisions for field replacement of glazing
 7. Fasteners, anchors, and connection devices that are concealed from view to the greatest extent possible
- B. Mechanically Glazed Framing Members:
 1. Fabricate for flush glazing without projecting stops.
- C. Structural-Sealant-Glazed Framing Members:
 1. Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
- D. Storefront Framing:
 1. Fabricate components for assembly using manufacturer's standard installation instructions.
- E. After fabrication, clearly mark components to identify their locations in project according to shop drawings.

2.8 ALUMINUM FINISHES

- A. Finish designations that are prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Factory Finishing:
 - 1. Kawneer Permanodic® AA-M10C21A44, AAMA 611, Architectural Class I Color Anodic Coating Color - Black

PART 3 EXECUTION

3.1 EXAMINATION

- A. With installer present, examine openings, substrates, structural support, anchorage, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work:
 - 1. Verify rough opening dimensions.
 - 2. Verify levelness of sill plate.
 - 3. Verify operational clearances.
 - 4. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components for proper water management.
 - 5. Masonry Surfaces:
 - a. Masonry surfaces must be visibly dry and free of excess mortar, sand, and other construction debris.
 - 6. Wood Frame Walls:
 - a. Wood frame walls must be dry, clean, sound, well nailed, free of voids, and without offsets at joints.
 - b. Ensure that nail heads are driven flush with surfaces in opening and within 3" (76.2 mm) of opening.
 - 7. Metal Surfaces:
 - a. Metal surfaces must be dry and clean (free of grease, oil, dirt, rust, corrosion, and welding slag).
 - b. Ensure that metal surfaces are without sharp edges or offsets at joints.
- B. Proceed with installation only after correcting unsatisfactory conditions.

3.2 INSTALLATION

- A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum-framed storefront system, accessories, and other components.
- B. Install aluminum-framed storefront system so that components:
 - 1. Are level, plumb, square, and true to line
 - 2. Are without distortion and do not impede thermal movement
 - 3. Are anchored securely in place to structural support
 - 4. Are in proper relation to wall flashing and other adjacent construction

- C. Set sill members in bed of sealant or with gaskets, as indicated, for weather-tight construction.
- D. Install aluminum-framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within aluminum-framed storefront system to the exterior.
- E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 FIELD QUALITY CONTROL

A. Field Tests:

- 1. Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured.
- 2. Conduct tests for air infiltration and water penetration with manufacturer's representative present.
- 3. Tests that do not meet the specified performance requirements and units that have deficiencies shall be corrected as part of the contract amount.
- 4. Testing shall be performed per AAMA 503 by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements.
- 5. Air Infiltration Tests:
 - a. Conduct tests in accordance with ASTM E 783.
 - b. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.
- 6. Water Infiltration Tests:
 - a. Conduct tests in accordance with ASTM E 1105.
 - b. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.2 psf (300 Pa).

B. Manufacturer's Field Services:

- 1. Upon owner's written request, provide periodic site visit by manufacturer's field service representative.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjusting: Not applicable.
- B. Protection:
 - 1. Protect installed product's finish surfaces from damage during construction.
- C. Cleaning:
 - 1. Clean glass immediately after installation.
 - a. Comply with glass manufacturer's written recommendations for final cleaning and maintenance.
 - b. Remove non-permanent labels and clean surfaces.
 - 2. Clean aluminum surfaces.
 - 3. Avoid damaging protective coatings and finishes.
 - 4. Remove excess sealants, glazing materials, dirt, and other substances.
 - 5. Repair or replace damaged installed products.
 - 6. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.
 - 7. Remove construction debris from project site and legally dispose of debris.

END OF SECTION 084113

NOTES AND DISCLAIMERS

Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor. It is the responsibility of the owner, the specifier, the architect, the general contractor, and the installer and the fabricator/transformer, consistent with their roles, to determine the appropriate materials for a project in strict conformity to all applicable national, regional and local building codes and regulations.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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Architectural Wall Products

Guide Specifications

Western States Metal Roofing
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FORMED METAL WALL PANELS

This Guide Specification is to be used to develop an office master specification 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.

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and other contract documents, listed in the agreement between the Owner and Contractor, apply to this section.

1.2 SUMMARY

- A. Section includes:
 - 1. Preformed metal wall panels.
 - 2. Preformed metal soffit panels.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Conference: Conduct conference at project site.
- B. Coordination:
 - 1. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
 - 2. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leak proof, secure, and noncorrosive installation.

1.4 SUBMITTALS

- A. Product Data:

1. Include construction details, material descriptions, dimensions of individual components and profiles and finishes for each type of panel and accessory.
- B. Shop Drawings:
 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, accessories and special details.
 2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Initial Selection: For each type of metal panel indicated with factory- applied color finishes.
- D. Samples for Verification: For each type of exposed finish required, prepared on samples of size indicated below:
 1. Metal Panels: 12 inches long by actual panel width. Include fasteners, closures, and other metal panel accessories.
- E. Qualification Data: For Installer.
- F. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- G. Filed quality – control reports.
- H. Sample Warranties: No Warranties: A 606 – 4 Weathering Steel

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Mockups: Build mockup; to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver components, metal panels and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Store metal panels in a manner to prevent bending, warping, twisting and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weather tight and ventilated covering. Store metal panels to ensure dryness with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting or other surface damage.
- D. Retain strippable protective covering on metal panels during installation.

1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

PART 2 – PRODUCTS

2.1 MANUFACTURER

- A. Western States Decking, Inc., DBA - Western States Metal Roofing, 901 W. Watkins St., Phoenix, AZ 85007; Phone: (877) 787-5467; Fax: (602) 261-7726.

Email: sales@cortenroofing.com
Website: www.cortenroofing.com

- B. Substitutions: In accordance with contract documents.

2.2 METAL WALL PANELS

- A. Flush- Profile: Formed with vertical panel edges and a flat pan between panel edges; with flush joint between panels.

- 1. Panel Designation: Rustwall ® Panel
- 2. Steel Sheet: A 606-4 Weathering Steel: ASTM A 606-04 High Strength Low Alloy Weathering Steel

- a. Nominal Thickness: [22 gauge]

- 3. Panel Width: [8 inches] [10 inches] [12 inches] [14 inches] [16 inches] [18 inches]

- a. Custom widths can be ordered up to 20 inches

- 4. Panel Height: Nominal 1.0 inch

2.3 ACCESSORIES

- A. Panel Accessories: Provide components required for a complete, weather tight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
 - 1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.
 - 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
 - 3. Closure Strips: Closed- cell, expanded, cellular, rubber, or cross linked, polyolefin- foam or

closed cell laminated polyethylene; minimum 1 inch thick, flexible closure strip; cut or pre-molded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weather tight construction.

- B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish systems adjacent metal panels.
- C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory- applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- D. Panel Sealants: Provide sealant type recommended by manufacturers that are compatible with panel materials, are non-staining and do not damage panel finish.
- E. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic.

2.4 FABRICATION

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturers standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendation in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one- half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Steel Panels and Accessories:
 - 1. A 606 – 4 Weathering Steel or Stainless Steel

PART 3- EXECUTION

3.1 EXAMINATION

- A. Examine substrates, area, and conditions, with installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the work.
 - 1. Examine wall framing to verify that girths, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerance required by metal wall panel manufacturer.
 - 2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacture.
 - a. Verify that air or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Miscellaneous Supports; Install sub framing, furring and other miscellaneous panel support members and anchorage according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.3 METAL PANEL INSTALLATION

- A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the work securely in place, with provisions for thermal and structural movement.
- B. Fasteners:
 - 1. Steel Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use stainless steel fasteners for surfaces exposed to the interior.
- C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic.
- D. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
 - 1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weather tight enclosure.

2. Provide metal backed washers under heads of exposed fasteners bearing on weather side of metal panels.
 3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
 4. Install screw fasteners with power tools having controlled torque adjusted to compress Washer tightly without damage to washer, screw threads or panels. Install screws in predrilled holes.
 5. Flash and seal pans with weather closures at perimeter of all openings.
- E. Accessory Installation: install accessories with positive anchorage to building and weather tight Mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components, required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips and similar items. Provide types indicated by metal wall panel manufacturer; or, if not indicated, provide types recommended by metal panel manufacturer.
- F. Flashing and Trim: Comply with performance requirements manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints and seams that are permanently watertight.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joint at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

3.5 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
- C. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 09250 - GYSPUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior gypsum board.
 - 2. Reglets.
- B. Related Sections include the following:
 - 1. Division 9 Painting Sections for primers applied to gypsum board surfaces.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. Mockups: Before beginning gypsum board installation, install mockups of at least 4 feet in length to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Dropped lighting soffits
 - 2. Simulate finished lighting conditions for review of mockups.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.
- B. Type X:
 - 1. Thickness: 1/2" or 5/8 inch – match existing
 - 2. Long Edges: Tapered
 - 3. Special fire-Type X gypsum board has fire-resistive capability greater than that of standard Type X. For rated assemblies, panels from different manufacturers cannot be intermixed because ratings apply only to assemblies identical in materials and construction to those

tested. Design designations of independent testing agencies indicated on Drawings generally determine product requirements for special Type X gypsum board.

2.3 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A108.1.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. USG Corporation; DUROCK Cement Board.
3. Thickness: 1/2 inch

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Gypsum Wall Board accessories: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet
2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.

B. Exposed Aluminum Trim: Exposed, extruded accessories of profiles and dimensions indicated.

1. Basis of Design Products:
 - a. Manufacturer: Fry Reglet Corp.
 - b. Product: "F" Reveal Molding DRMF 50-50 – 1/2", 1/2".
 - c. Color: Black.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound

D. Joint Compound for Exterior Applications:

E. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 1. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."
- F. Thermal Insulation: As specified in Division 7 Section "Building Insulation."
- G. Vapor Retarder: As specified in Division 7 Section "Building Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: In all locations except where noted.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.

2. On partitions/walls, apply gypsum panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1, at all locations scheduled to receive tile, including floors
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners
 2. Bullnose Bead: Use where indicated
 3. LC-Bead: Use at exposed panel edges where indicated or as directed by architect
 4. L-Bead: Use where indicated
 5. U-Bead: Use at exposed panels edges and where indicated or directed by Architect.
- D. Aluminum Trim: Install in locations as indicated on Drawings.

3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, beveled edges, and damaged surface areas.

- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 3:
 - 3. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated
 - a. Primer and its application to surfaces are specified in other Division 9 Sections.
 - b. Level 5 is suitable for surfaces receiving gloss and semigloss enamels and surfaces subject to severe lighting. It is considered a high-quality gypsum board finish.
- E Cementitious Backer Units: Finish according to manufacturer's written instructions.

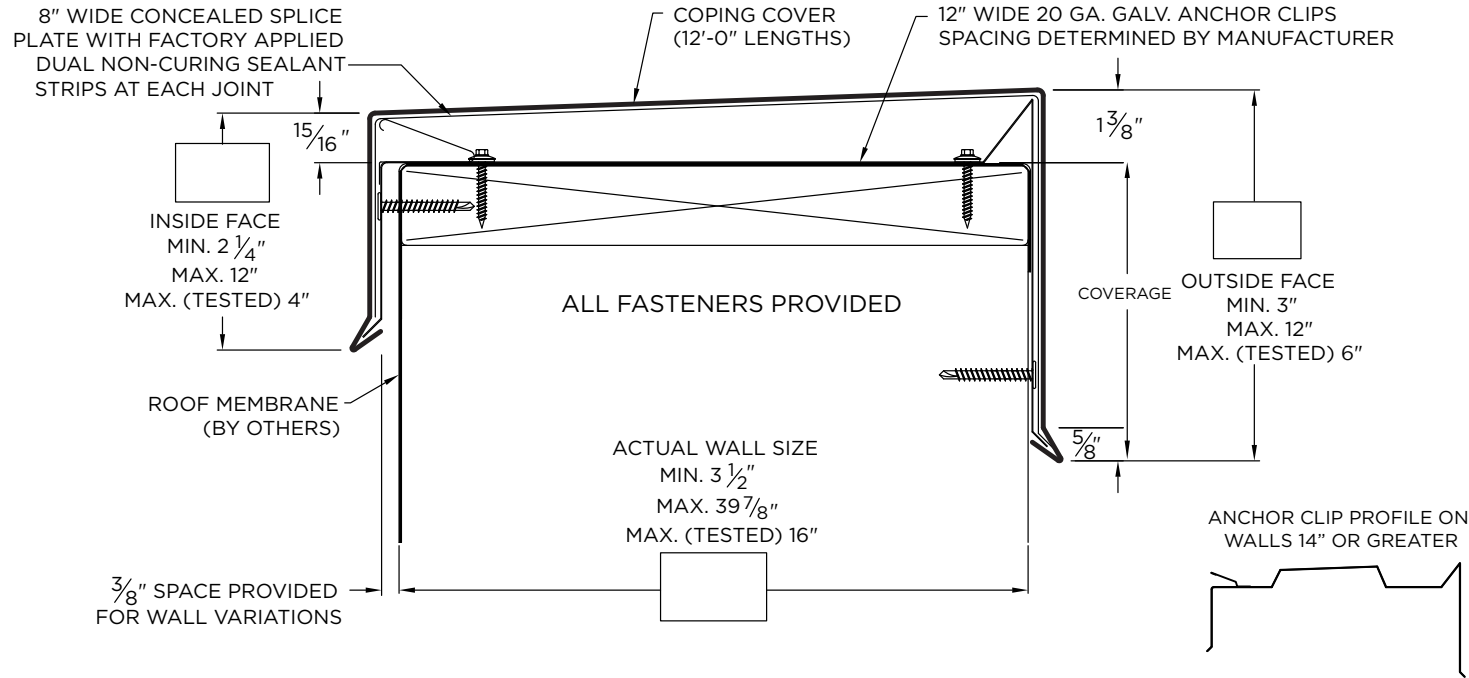
3.7 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09250

PERMA-TITE COPING

TAPERED



* NOTES

- Oil canning can occur on larger face heights and wall widths; recommend 22 Ga., .050" or .063" Aluminum for face height over 8" or wall width over 12".

- 24 Ga. and .040" Aluminum covers available for wall sizes 3.5" to 24" ONLY

- Unless otherwise noted, fabrication of miters and accessories are furnished standard utilizing a non-penetrating quicklock joint, then factory sealed watertight

- Welded accessories require a minimum material thickness of .050" Aluminum

- For non-90 miters, see separate print approval

- Product should be installed per provided installation instructions

- ANSI/SPRI/FM 4435/ES-1 test pressures up to 226 psf (Horizontal) and 391 psf (Vertical)

PROJECT INFO

Project Name: _____

Architect: _____

Roofing Contractor: _____

Project Type:

☐ By selecting this box you have verified and confirmed that dimensions, sizes, and quantities are correct. All products will be installed in strict accordance with printed instructions.

Date: _____

Metal-Era LLC
1600 Airport Rd.
Waukesha, WI 53188
Phone: 800-558-2162
www.metalera.com

SHT# 1 of 2

DATE: 05/31/23

DRN BY: JJC

CKD BY: MM

DWG #: 11011-19115

REV: J

APPROVALS*

ANSI/SPRI/FM 4435/ES-1
Test Pressures listed in notes



MIAMI-DADE COUNTY
APPROVED

MATERIAL*

- ☐ 24 Ga. Galv. Steel
☐ 22 Ga. Galv. Steel
☐ .040" Aluminum
☐ .050" Aluminum
☐ .063" Aluminum
☐ OTHER: _____

Color: _____

Finish: _____

Substrate: (For Top Fasteners)

if substrate is not given, wood fasteners will be provided.

- ☐ Wood
☐ Masonry
☐ Metal

QUANTITIES

_____ Lineal Feet (12'-0" Lengths)

_____ Outside Miter (90°)

_____ Inside Miter (90°)

_____ Right Endcaps

_____ Left Endcaps

Accessory Type* : ☐ Quicklock (Default) ☐ Welded (Surcharge)

_____ Right Endwall Flashing (Coping Version)

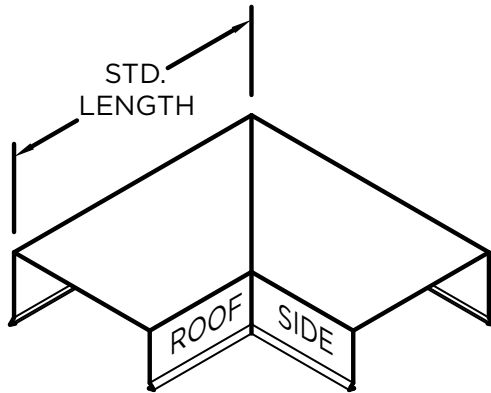
_____ Left Endwall Flashing (Coping Version)

_____ Right Endwall Flashing (Splice Plate Version)

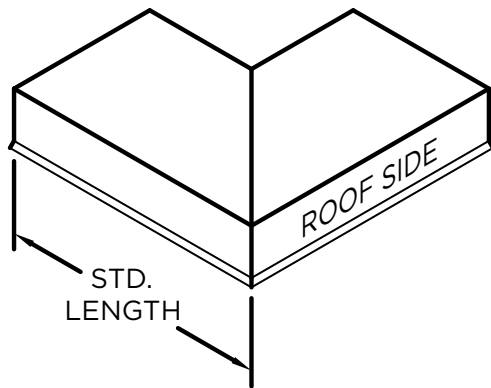
_____ Left Endwall Flashing (Splice Plate Version)

PERMA-TITE COPING

STANDARD ACCESSORIES

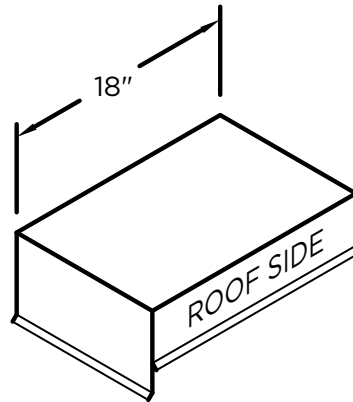


OUTSIDE MITER

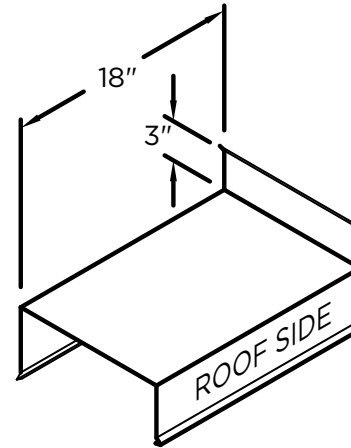


INSIDE MITER

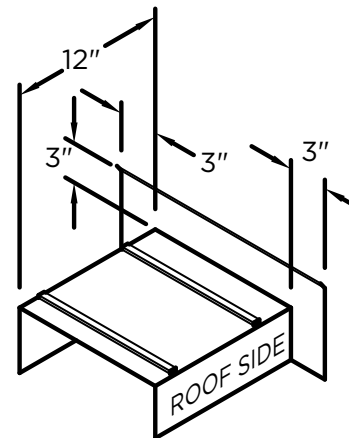
MITER STANDARD LEG LENGTH:
WALL SIZE + $9 \frac{5}{8}"$ = LENGTH



ENDCAP
(LEFT HAND SHOWN)



ENDWALL FLASHING
COPING VERSION
(RIGHT HAND SHOWN)



ENDWALL FLASHING
SPLICE PLATE VERSION
(RIGHT HAND SHOWN)
(AVAILABLE ONLY IN
.040" WELDED, PAINTED
TO MATCH COPING)

NOTES

Additional accessories are available including:

- Transition Miters
- Straight Transition Miters
- "T" Miters
- "Z" Miters
- Step-up Miters
- Peak / Valley Miters
- Pilaster Caps
- Radius Coping
- Arched Coping

For additional accessory requirements, attach sketches or call manufacturer for assistance.

SHT# 2 of 2

DATE: 05/31/23

DRN BY: JJC

CKD BY: MM

DWG #: 11011-19115

REV: J

Metal-Era LLC
1600 Airport Rd.
Waukesha, WI 53188
Phone: 800-558-2162
www.metalera.com



KYNAR 500®FSF®

LIQUID COIL AND EXTRUSION COATINGS GUIDE SPECIFICATIONS

SECTION 05 05 13
SHOP-APPLIED FLUOROPOLYMER
COATINGS FOR METAL

THIS GUIDE SPECIFICATION IS WRITTEN
ACCORDING TO CSI SECTIONFORMAT®

FOR THE LATEST UPDATES,
PLEASE VISIT KYNAR500.COM

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CALL 1-800-KYNAR-50

WALL PANELS



SIDING



ROOFING



WINDOW PROFILES



SECTION 05 05 13

SHOP-APPLIED FLUOROPOLYMER COATINGS FOR METAL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. [Shop-applied, coil coating system, 70% [Kynar 500® FSF® resin-based], fluoropolymer coating system, on aluminum.]
2. [Shop-applied, coil coating system, 50% [Kynar® resin-based], fluoropolymer coating system on steel.]

1.2 DEFINITIONS

- A. FSF® resin: Arkema Inc. trademark denoting a PVDF resin made without the use of a fluorosurfactant.
- B. PVDF: Polyvinylidene Fluoride.
- C. LEED®: Leadership in Energy and Environmental Design (LEED®) is a sustainable (green) building rating systems developed by the U.S. Green Building Council (USGBC).
- D. VOC: Volatile Organic Compounds.

1.3 REFERENCE STANDARDS

- A. American Architectural Manufacturers Association (AAMA).
1. AAMA 2604 Voluntary Specification, Performance Requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels.
 2. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
 3. AAMA 621 Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum.
- B. ASTM International (ASTM)
1. ASTM B 117 – Practice for Operating Salt Spray (Fog) Apparatus.
 2. ASTM B 244 – Standard Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments.
 3. ASTM D 523 – Standard Test Method for Specular Gloss.
 4. ASTM D 968 – Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
 5. ASTM D 1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
 6. ASTM D 1400 – Standard Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base.
 7. ASTM D 1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
 8. ASTM D 2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
 9. ASTM D 2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
 10. ASTM D 2248 – Standard Practice for Detergent Resistance of Organic Finishes.

11. ASTM D 2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
12. ASTM D 3359 – Standard Test Methods for Measuring Adhesion by Tape Test.
13. ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test.
14. ASTM D 4214 – Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.
15. ASTM E 1980 – Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.4 SUBMITTALS

- A. Section [01 33 00 - Submittal Procedures] <insert section number and title>: Requirements for submittals.

A list of the standard colors available by Kynar 500® FSF® trademark licensee can be accessed through the following web site:

<http://www.Kynar500.com>

- B. Samples for Initial Selection:
 1. Submit manufacturer's complete set of color samples for initial selection.
- C. Certificates: Certify formulations being provided [are manufactured with Arkema PVDF resin,] [contain Kynar 500® FSF® resin,] [contain Kynar® resin,] [are free of fluorosurfactants][,] and meet or exceed specified requirements of this section.
- D. Test and Evaluation Reports: Submit reports indicating conformance with physical properties specified and requirements of AAMA 2605.
- E. Qualification Statements: Submit documentation indicating that coating manufacturer is a [Kynar® licensee] [Kynar 500® FSF® licensee] [licensee of the resin manufacturer].

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Section [01 81 13 - Sustainable Design Requirements] <insert section number and title>: Requirements for sustainable design submittals.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in the manufacture of coatings specified in this section that is a [Kynar® licensee] [Kynar 500® FSF® licensee] [licensee of the resin manufacturer].
- B. Applicator: Company specializing in the applications of coatings specified in this section in adherence to [AAMA 2604] [AAMA2605] [AAMA 621] and is approved by the coating manufacturer.

1.7 MOCKUP

- A. Section [01 40 00 - Quality Requirements] <insert section number and title>: Requirements for mockup.
- B. Apply coating system to mockups of assemblies specified in other Sections to receive coating system as a finish. Apply coating systems to mockups in compliance with the requirements of this Section.

1.8 WARRANTY

- A. Section [01 70 00 - Execution and Closeout Requirements] <insert section number and title>: Requirements for warranties.

- B. Coating Applicator's Warranty: Applicator agrees to repair finish or replace coated items that demonstrate deterioration of [shop-applied, spray coating system] [shop-applied, coil coating system] finished within warranty period indicated.
1. Exposed Coating: Deterioration includes but is not limited to:
 - a. Color fading in excess of 5 Delta E Hunter units per ASTM D 2244.
 - b. Peeling, checking, or cracking of coating adhesion to metal.
 - c. Chalking in excess of a No. 8 when tested per Method D 4214.
 - d. Corrosion of substrate in excess of a No. 6 on cut edges and a No. 9 on field surfaces, when measured per ASTM D1654.
 2. Warranty Period: [10] [20] [25] [30] years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURES

- A. Manufacturer, Resin: Subject to compliance with requirements, provide coating systems containing [Kynar 500® FSF® PVDF resin by:

1. Arkema Inc.

2.2 Superior Performance Organic Coatings on Aluminum Panels

- A. Superior Performance Liquid Fluoropolymer Coil Coatings, AAMA 2605: Minimum 70 percent Kynar 500® FSF® PVDF resin, by weight, in color coat.=
1. Pencil Hardness, ASTM D3363: F minimum.
 2. Dry Film Thickness, ASTM D1400: 0.20 mil primer coat plus 1.0 mil color coat, 1.20 mil total, minimum thickness.
 3. Dry Film Thickness, ASTM D1400: 0.20 mil primer coat plus [1 mil barrier coat,] 1.0 mil color coat and 0.4 mil clear topcoat, [1.6 mil] [2.6 mil] total, minimum thickness.

2.3 PRIMER MATERIALS

- A. Manufacturer's standard for finish and substrate indicated.

2.4 SHOP FINISHING METHODS

- A. Mechanically clean and chemically pretreat fabricated items in accordance with the coating manufacturer's requirements and AAMA requirements for the finish indicated.
- B. Apply primer and finish coats in accordance with the coating manufacturer's requirements for the finish indicated.

END OF SECTION



EXTERIOR ELASTOMERIC MASONRY, STUCCO & BRICK PAINT

NO. 68 WHITE



PRODUCT INFORMATION

BEHR PREMIUM® Elastomeric Masonry, Stucco & Brick Paint is a flexible, high-build coating designed to expand and contract, bridging hairline cracks in exterior, vertical masonry surfaces. This waterproofing paint is extremely durable and is mildew and dirt resistant. It has superior elasticity and elongation properties, stretching up to 600%. This 100% acrylic latex formula provides a breathable film, releasing moisture vapor that builds in walls. This low-sheen paint has excellent color retention and is available in 55 custom tinted colors.

RECOMMENDED USES:

This product is ideal for use on properly prepared and primed vertical surfaces such as:

- Concrete
- Concrete Block/CMU
- Cement Board Siding
- Brick
- Stucco

PRODUCT SPECIFICATIONS:

Tint Bases/Max Tint Load:

No. 68 124 oz. / 6 oz.
No. 67 116 oz. / 14 oz.

Gloss: <10 @ 60°

Sheen: 0-6 @ 85°

Resin Type: 100% Acrylic

Weight per Gallon: 10.9 lbs.

% Solids by Volume: 48.0%

% Solids by Weight: 60.4%

VOC: <50 g/L

Flash Point: N/A

Viscosity: 120-135 KU

Recommended Film Thickness:

Wet: 21.3 mils / Dry: 10.2 mils @ 75 Sq. Ft./Gal.
Wet: 12.8 mils / Dry: 6.1 mils @ 125 Sq. Ft./Gal.

Coverage: 75-125 Sq. Ft./Gal. depending on application method and substrate porosity. Does not include the loss of material from spraying.

APPLICATION:

Brush: Nylon/polyester

Roller: 3/4"-1 1/4" Nap

Airless Spray: At packaged consistency

Tip: .025"-.029"

Filter: 60 mesh

Thinning: Do Not Thin

Dry Time: @ 77° & 50% RH

Longer dry time may be required in cooler temperatures and higher humidity.

To Touch: 4-6 hours

To Recoat: 24 hours

Full Cure: 2 weeks

SURFACE PREPARATION:

All surfaces must be clean, free of dust, chalk, oil, grease, wax, polish, mold and mildew stains, loose and peeling paint, rust, and all other foreign substances.

Stainblocking: After priming, test for stain bleedthrough by applying the topcoat to a small section. If the stain bleeds through the topcoat, apply a second coat of primer and test again before top-coating the entire area. If bleeding continues, a longer dry time of the primer may be needed before top-coating.

Masonry: All masonry surfaces must be cured at least 30 days before painting. The pH must be 10.0 or lower prior to coating. Smooth masonry may require an adequate profile for adhesion. For all other smooth concrete, create a profile using a product such as a muriatic acid etcher to achieve a textured profile. Use a cleaner to remove loose aggregate and debris.

Non-Ferrous Metal: The oil film on new non-ferrous metal must be removed before it is painted. Remove oil film with a detergent and water solution. For better paint adhesion, sand the surface with sandpaper, steel wool, or by using a product such as a muriatic acid etcher to achieve a textured profile.

New Surfaces: Wipe down clean metal surfaces prior to painting with a vinegar solution, one part vinegar to five parts water (1:5). Bare metal must be primed the same day it is cleaned. Metal: Remove all rust and mill scale using sandpaper, steel wool, abrasive blasting, or other abrading methods to create a profile on the metal's surface. Clean the metal by scrubbing the surface with a detergent and water solution, followed by a thorough rinsing with clean water. Bare metal must be coated the same day it is cleaned.

WARNING! If you scrape, sand or remove old paint, you may release lead dust. **LEAD IS TOXIC.** Contact the National Lead Information Center at 1-800-424-LEAD or visit www.epa.gov/lead.

COMPLIES WITH THE BELOW AS OF 9/1/2015

SCAQMD	YES	LADCO	YES
CARB	YES	AIM	YES
OTC	YES	LEED v.3 (2009) [†]	YES

RECOMMENDED PRIMER/SYSTEMS:

PROPERLY PREPARED NEW SURFACES:

Masonry:

- BEHR PREMIUM PLUS® Exterior Water-Based Primer & Sealer No. 436

Masonry with pH Levels up to 13.0:

- BEHR PREMIUM PLUS Exterior Water-Based Primer & Sealer No. 436
- KILZ KLEAR® Interior/Exterior Water-Based Primer

New Surfaces:

- All surfaces must be clean, free of dust, chalk, oil, grease, wax, polish, mold and mildew stains, loose and peeling paint, rust and all other foreign substances.

PREVIOUSLY PAINTED SURFACES:

- Use a full coat or spot prime with BEHR PREMIUM PLUS® Exterior Water-Based Primer & Sealer No. 436 on properly prepared surfaces.

TEST SPECIFICATIONS:

Scrubability:

ASTM D2486, Scrub > 500

Accelerated Weathering:

ASTM D4587, 1000 hrs. exposure - Pass

Resistance Wind Driven Rain:

ASTM D6904/TT-C-555B - Pass

Flexibility:

ASTM D522, method B - Pass

Biological Growth:

ASTM D3273 (4 weeks) - Pass

Tensile Strength, Elongation and Recovery:

ASTM D2370, Elongation > 600%
ASTM D2370, Tensile Strength > 200 psi

Low Temperature Flexibility:

ASTM D1737 - Pass



EXTERIOR ELASTOMERIC MASONRY, STUCCO & BRICK PAINT

NO. 68 WHITE

Resistance Wind Driven Rain:

ASTM D6904/TT-C-555B - Pass

ASTM D6904/TT-C-555B - Pass:

Apply 2 coats at min. 6.1 mils DFT for a min.

12.2 mils total system DFT.

CLEAN UP:

Clean all tools and equipment with clean water. For disposal of empty containers and unused product, contact your household refuse collection service.

CAUTIONS/LIMITATIONS:

- Protect from freezing.
- Do not use on garage floors and driveways.
- For best results, apply at temperatures between 50°F - 90°F. Temperatures above 90°F may affect the application such as drying too fast. Avoid painting in direct sun. NOTE: If the surface is hot to the touch it should be considered too hot to apply this coating.
- Avoid heavy traffic for 24 hours.
- Allow four weeks before washing or cleaning for full cure.
- Shelf life under normal conditions is two years unopened.

GENERAL INFORMATION:



Warning! Causes eye and skin irritation. Harmful if swallowed. Wear protective clothing, gloves, eye, and face protection. Do not eat, drink, or smoke when using this product. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Collect spillage and avoid release to the environment. Dispose of unused, contents, container and other contaminated wastes in accordance with local, state, federal and provincial regulations.

First aid: If in eyes: Rinse cautiously with water for several minutes and remove contacts if present and easy to do. Continue rinsing and get medical attention if eye irritation persists. **If on skin:** Wash with plenty of soap and water.

If swallowed: Rinse mouth and get medical attention if you feel unwell.

City of Chester – 531-533 Avenue of the States

March 21, 2025

Ali's Styles

533

Ali's Outlet

531

Paradise Oils
Black Seed
Soap Oil
& Products

Architect:

THINKArchitecture

2006 Lenape Unionville Road
Kennett Square, PA 19348
(610) 453-7874

Contact: Ed Rahme AIA, LEED-AP

TABLE OF CONTENTS

- JOINT SEALANTS
- KAWNEER STOREFRONT (Basis of Design)
- PELLA WINDOWS (Basis of Design)
- METAL COPING
- GYPSUM BOARD
- PAINT (Basis of Design)

END OF TABLE OF CONTENTS

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
 - 1. Exterior joints in the following conditions:
 - a. Perimeter joints between materials listed in other Sections of this specification and frames of doors and windows.
 - b. Roofing Sealants as required by roofing products manufacturers.
 - c. Other joints as indicated.
 - 2. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
 - a. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and baseboards
 - b. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - c. Other joints as indicated.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

- D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- E. Field Test Report Log: For each elastomeric sealant application.
- F. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than four pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the commencement of the Work.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
 - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
 - 3. Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

4. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
 2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of nonelastomeric sealant and joint substrate indicated.
 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
- F. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F
 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Minimum two years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids: Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component Nonsag Urethane Sealant [ES-~~#~~]:
 - 1. Products:
 - a. Sika Corporation, Inc.; Sikaflex - 1a.
 - b. Sonneborn, Division of ChemRex Inc.; Ultra.
 - c. Sonneborn, Division of ChemRex Inc.; NP 1.
 - d. Tremco; Vulkem 116.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood
- F. Single-Component Nonsag Urethane Sealant
 - 1. Products:

- a. Bostik Findley; Chem-Calk 900.
 - b. Bostik Findley; Chem-Calk 915.
 - c. Bostik Findley; Chem-Calk 916 Textured.
 - d. Bostik Findley; Chem-Calk 2639.
 - e. Pecora Corporation; Dynatrol I-XL.
 - f. Polymeric Systems Inc.; Flexiprene 1000.
 - g. Polymeric Systems Inc.; PSI-901.
 - h. Schnee-Morehead, Inc.; Permthane SM7100.
 - i. Schnee-Morehead, Inc.; Permthane SM7108.
 - j. Schnee-Morehead, Inc.; Permthane SM7110.
 - k. Sika Corporation, Inc.; Sikaflex - 15LM.
 - l. Tremco; DyMonic.
 - m. Tremco; Vulkem 921.
 - n. Tremco; Vulkem 931.
- 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25 and 50
 - 4. Use Related to Exposure: NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - a. Use O Joint Substrates: aluminum coated with a high-performance coating, ceramic tile, and wood

2.4 LATEX JOINT SEALANTS

- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.
- B. Products:
 - 1. Bostik Findley; Chem-Calk 600.
 - 2. Pecora Corporation; AC-20+.
 - 3. Schnee-Morehead, Inc.; SM 8200.
 - 4. Sonneborn, Division of ChemRex Inc.; Sonolac.
 - 5. Tremco; Tremflex 834.

2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at

temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

- F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 4. Provide flush joint configuration where indicated per Figure 5B in ASTM C 1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- H. Installation of Preformed Tapes: Install according to manufacturer's written instructions.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed elastomeric sealant joints as follows:
 - a. Perform two tests for the first 20 feet of joint length for each type of elastomeric sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
 4. Inspect tested joints and report on the following:
 - a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

- b. Whether sealants filled joint cavities and are free of voids.
 - c. Whether sealant dimensions and configurations comply with specified requirements.
 - 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07920

SECTION 084113: ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

This suggested guide specification has been developed using the current edition of the Construction Specifications Institute (CSI) "Manual of Practice," including the recommendations for the CSI three-part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MasterSpec® Program has been recognized in the preparation of this guide specification. Neither CSI, AIA, USGBC, nor ILFI endorse specific manufacturers and products. The preparation of the guide specification assumes the use of standard contract documents and forms, including the "Conditions of the Contract," published by the AIA.

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section covers Kawneer Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of storefront units.
- B. Types of Kawneer Aluminum Storefront Systems include:
 - 1. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication

1.3 DEFINITIONS

- A. For fenestration industry standard terminology and definitions, refer to the Fenestration & Glazing Industry Alliance (FGIA) Glossary (AAMA AG-13).

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance:
 - 1. Product to comply with the specified performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction, as determined by testing of aluminum storefront systems representing those indicated for this project.
 - 2. Aluminum storefront systems shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 - 3. Failure includes any of these events:
 - a. Thermal stresses transferring to building structure
 - b. Glass breakage

- c. Loosening or weakening of fasteners, attachments, and other components
 - d. Failure of operating units
- B. Delegated Design:
 - 1. Design aluminum storefront systems, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- C. Air Leakage:
 - 1. The test specimen shall be tested in accordance with ASTM E 283.
 - 2. With interior seal, air leakage rate shall not exceed 0.06 cfm/ft² (0.3 l/s · m²) at a static air pressure differential of 6.2 psf (300 Pa).
 - 3. Without interior seal, air leakage rate shall not exceed 0.06 cfm/ft² (0.3 l/s · m²) at a static air pressure differential of 1.6 psf (75 Pa).
 - 4. CSA A440 Fixed Rating
- D. Water Resistance:
 - 1. The test specimen shall be tested in accordance with ASTM E 331.
 - 2. There shall be no leakage at a minimum static air pressure differential of 10 psf (479 Pa) as defined in AAMA 501.
 - 3. CSA A440 B5 Rating
- E. Uniform Load Structural:
 - 1. A static air design load of 30 psf (1436 Pa) shall be applied in the positive and negative direction in accordance with ASTM E 330.
 - 2. There shall be no deflection in excess of L/175 of the span of any framing member.
 - 3. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
 - 4. CSA A440 C2 Rating
 - 5. If using CI: When tested to CSA A-440, the CI shall not be less than listed here:
 - a. Trifab® Versaglaze® 601 Framing System, Front Plane 38_{frame} and 57_{glass} (low-e)
 - b. Trifab® Versaglaze® 601T Framing System, Front Plane 63_{frame} and 61_{glass} (low-e)
 - c. Trifab® Versaglaze® 601UT Framing System, Front Plane 68_{frame} and 65_{glass} (low-e)
- F. Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC):
 - 1. Sound transmission loss test results in accordance with AAMA 1801 are based upon 1" (25.4 mm) clear double laminated insulating glass with PVB interlayer (1/8", 0.030", 1/8", 1/2" AS, 1/8", 0.030", 1/8").
 - 2. Ratings shall not be less than listed here:
 - a. Trifab® VersaGlaze® 601/601T/601UT Framing System, Center Plane laminated glass STC 37 and OITC 31
 - b. Trifab® VersaGlaze® 601/601T/601UT Framing System, Front Plane laminated glass STC 36 and OITC 30
 - c. Trifab® VersaGlaze® 601/601T/601UT Framing System, Front Plane non-laminated glass STC 31 and OITC 25

- G. Impact Resistance Performance (Center Plane Only):
 - 1. The test specimen shall be tested in accordance with ASTM E 1886, information in ASTM E 1996 and TAS 201/203.
 - 2. Large-Missile Impact: For aluminum-framed systems located within 30 feet (9.1 m) of grade.
 - 3. Small-Missile Impact: For aluminum-framed systems located above 30 feet (9.1 m) of grade.
- H. Environmental Product Declaration (EPD): Shall have a Type III Product-Specific EPD created from a Product Category Rule.
- I. Material Ingredient Reporting:
 - 1. Shall have a complete list of chemical ingredients to at least 100 ppm (0.01%) that covers 100% of the product.
 - 2. Acceptable documentation includes:
 - a. Manufacturer's inventory with Chemical Abstract Service Registration Number (CASRN or CAS#):
 - 1) Kawneer's Material Transparency Summary (MTS)
 - b. (Trifab® Versaglaze® 601T and 601UT only)Cradle to Cradle certification; either document listed below is acceptable for this option:
 - 1) Cradle to Cradle Certified™ with Material Health section Silver or higher
 - 2) Silver Level or higher Material Health Certificate
 - c. Red List Free DECLARE label

1.5 SUBMITTALS

- A. Product Data:
 - 1. For each type of aluminum-framed storefront system indicated, include:
 - a. Construction details
 - b. Material descriptions
 - c. Dimensions of individual components and profiles
 - d. Hardware
 - e. Finishes
 - f. Installation instructions
 - 2. Recycled Content:
 - a. Provide documentation that aluminum has a minimum of 50% mixed pre- and post-consumer recycled content.
 - b. Provide a sample document illustrating project-specific information that will be provided after product shipment.
 - c. After product has shipped, provide project-specific recycled content information:
 - 1) Indicate recycled content, including the percentage of pre- and post-consumer recycled content per unit of product.
 - 2) Indicate the relative dollar value of recycled content product to the total dollar value of product included in the project.
 - 3) Indicate the location for recovery of recycled content.
 - 4) Indicate the location of the manufacturing facility.

3. Environmental Product Declaration (EPD):
 - a. Include a Type III Product-Specific EPD created from a Product Category Rule.
4. Material Ingredient Reporting:
 - a. Include documentation for material reporting that has a complete list of chemical ingredients to at least 100 ppm (0.01%) that covers 100% of the product.
- B. Shop Drawings:
 1. Plans
 2. Elevations
 3. Sections
 4. Details
 5. Hardware
 6. Attachments to other work
 7. Operational clearances
 8. Installation details
- C. Samples for Initial Selection:
 1. Provide samples for units with factory-applied color finishes.
 2. Provide samples of hardware and accessories involving color selection.
- D. Samples for Verification:
 1. Provide a verification sample for aluminum-framed storefront system and required components.
- E. Product Test Reports:
 1. Provide test reports for each type of aluminum-framed storefront used in the project.
 2. Test reports must be based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency.
 3. Test reports must indicate compliance with performance requirements.
- F. Fabrication Sample:
 1. Provide a fabrication sample of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12" (304.8 mm) lengths of full-size components and showing details of the following:
 - a. Joinery, including concealed welds
 - b. Anchorage
 - c. Expansion provisions
 - d. Glazing
 - e. Flashing and drainage
- G. Entrance Door Hardware Schedule:
 1. Schedule shall be prepared by or under the supervision of supplier.
 2. Schedule shall detail fabrication and assembly of entrance door hardware, including procedures and diagrams.

3. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer must have successfully installed the same or similar units required for the project and other projects of similar size and scope.

B. Manufacturer Qualifications:

1. Manufacturer must be capable of providing aluminum-framed storefront systems that meet or exceed performance the stated performance requirements.
2. Manufacturer must document this performance by the inclusion of test reports and calculations.

C. Source Limitations:

1. Obtain aluminum-framed storefront system through one source from a single manufacturer.

D. Product Options:

1. Drawings indicate size, profiles, and dimensional requirements of aluminum-framed storefront system and are based on the specific system indicated. Refer to Division 01 Product Requirements Section. Do not modify size and dimensional requirements.
2. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Mockups:

1. Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
2. Build mockups for the type(s) of storefront elevation(s) indicated, in location(s) shown on drawings.

F. Pre-installation Conference:

1. Conduct conference at project site to comply with requirements in Division 01 Project Management and Coordination Section.

G. Structural-Sealant Glazing must comply with ASTM C 1401, "Guide for Structural Sealant Glazing" for design and installation of structural-sealant-glazed systems.

H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

1.7 PROJECT CONDITIONS

A. Field Measurements:

1. Verify actual dimensions of aluminum-framed storefront openings by field measurements before fabrication.
2. Indicate measurements on shop drawings.

1.8 WARRANTY

- A. Submit manufacturer's standard warranty for owner's acceptance.
- B. Warranty Period:
 - 1. Two years from Date of Substantial Completion of the project provided however that in no event shall the Limited Warranty begin later than six months from date of shipment by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product:
 - 1. Kawneer Company, Inc.
 - 2. Trifab® Versaglaze® 601 Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Non-thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 3. Trifab® Versaglaze® 601T Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 4. Trifab® Versaglaze® 601T Framing System - Impact Glazing
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 5. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Center Plane
 - d. Screw Spline Fabrication
 - 6. Trifab® Versaglaze® 601 Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Non-thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
 - 7. Trifab® Versaglaze® 601T Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal

- c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
 - 8. Trifab® Versaglaze® 601UT Framing System
 - a. 2" x 6" (50.8 mm x 152.4 mm) nominal dimension
 - b. Thermal
 - c. Front Plane
 - d. Screw Spline, Shear Block and Stick Fabrication Fabrication
- B. Subject to compliance with requirements, provide a comparable product by the following:
 - 1. Manufacturer: (_____)
 - 2. Series: (_____)
 - 3. Profile Dimension: (_____)
- C. Substitutions:
 - 1. Refer to Division 01 Substitutions Section for procedures and submission requirements.
 - 2. Pre-Contract (Bidding Period) Substitutions:
 - a. Submit written requests ten (10) days prior to bid date.
 - 3. Post-Contract (Construction Period) Substitutions:
 - a. Submit written request in order to avoid installation and construction delays.
 - 4. Product Literature and Drawings:
 - a. Submit product literature and drawings modified to suit specific project requirements and job conditions.
 - 5. Certificates:
 - a. Submit certificate(s) certifying that the substitute manufacturer (1) attests to adherence to specification requirements for storefront system performance criteria, and (2) has been engaged in the design, manufacture, and fabrication of aluminum storefronts for a period of not less than ten (10) years. (*Company Name*)
 - 6. Test Reports:
 - a. Submit test reports verifying compliance with each test requirement required by the project.
 - 7. Samples:
 - a. Provide samples of typical product sections and finish samples in manufacturer's standard sizes.
- D. Substitution Acceptance:
 - 1. Acceptance will be in written form, either as an addendum or modification.
 - 2. Acceptance will be documented by a formal change order signed by the owner and contractor.

2.2 MATERIALS

- A. Aluminum Extrusions:
 - 1. Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish.
 - 2. Not less than 0.070" (1.8 mm) wall thickness at any location for the main frame

3. Complying with ASTM B221: 6063-T6 alloy and temper
4. Recycled Content:
 - a. Shall have a minimum of 50% mixed pre- and post-consumer recycled content.
 - b. Indicate recycled content, including the percentage of pre- and post-consumer recycled content per unit of product.
 - c. Indicate the relative dollar value of recycled content product to the total dollar value of product included in the project.
 - d. Indicate the location for recovery of recycled content.
 - e. Indicate the location of the manufacturing facility.

- B. Fasteners:
 - 1. Nonmagnetic stainless steel or other materials must be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.
- C. Anchors, Clips, and Accessories:
 - 1. Anchors, clips, and accessories shall provide sufficient strength to withstand the design pressure indicated.
- D. Reinforcing Members:
- E. Sealant:
 - 1. For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- F. Tolerances:
 - 1. References to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
- G. Red List Free:
 - 1. All parts and materials comply with the Living Building Challenge/DECLARE Red List and the Cradle-to-Cradle (C2C) Banned List:
 - a. PVC-free
 - b. Neoprene-free
 - 2. Product does not contain PVC or Neoprene.

2.3 STOREFRONT FRAMING SYSTEM

- A. Thermal Barrier:
 - 1. Trifab® Versaglaze® 601T:
 - a. Kawneer IsoLock™ Thermal Break with a nominal 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
 - 2. Trifab® Versaglaze® 601UT:
 - a. Kawneer IsoLock® Thermal Break with dual nominal 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
 - b. Thermal break shall be designed in accordance with AAMA TIR-A8 and tested in accordance with AAMA 505.
- B. Brackets and Reinforcements:
 - 1. Manufacturer's standard high-strength aluminum with non-staining, non-ferrous shims for aligning system components.
- C. Fasteners and Accessories:
 - 1. Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories must be compatible with adjacent materials.

2. Where exposed, fasteners and accessories shall be stainless steel.
- D. Perimeter Anchors:
 1. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
- E. Packing, Shipping, Handling, and Unloading:
 1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- F. Storage and Protection:
 1. Store materials so that they are protected from exposure to harmful weather conditions.
 2. Handle material and components to avoid damage.
 3. Protect material against damage from elements, construction activities, and other hazards before, during, and after installation.

2.4 GLAZING SYSTEMS

- A. Glazing to meet requirements in Division 08 Glazing Section.
- B. Glazing Gaskets:
 1. Manufacturer's standard compression types
 2. Replaceable, extruded EPDM rubber
- C. Spacers and Setting Blocks:
 1. Manufacturer's standard elastomeric type
- D. Bond-Breaker Tape:
 1. Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- E. Glazing Sealants for structural-sealant-glazed systems as recommended by manufacturer for joint type, and as follows:
 1. Weatherseal sealant:
 - a. ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O
 - b. Single-component neutral-curing formulation that is compatible with the structural sealant and other system components with which it comes in contact
 - c. Recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use
 - d. Color: Matching structural sealant

2.5 ENTRANCE DOOR SYSTEMS

- A. Refer to Entrance Doors as specified in Division 084113 Aluminum-Framed Entrances and Storefronts Section.
- B. Refer to Entrance Door Hardware as specified in Division 084113 Door Hardware Section.

2.6 ACCESSORY MATERIALS

- A. Versoleil® SunShade:
 - 1. Anchors shall be painted:
 - a. Select from Kawneer's standard paints and colors. Custom colors are available upon request.
 - 2. Louvers and fascia shall be painted or anodized:
 - a. Painted: Select from Kawneer's standard paints and colors. Custom colors are available upon request.
 - b. Anodized: Select from Kawneer's anodized finishes.
- B. InLighten® Light Shelf:
 - 1. Aluminum light shelf system that consists of anchor channels, support beams, fascia trims, and Aluminum Composite Material (ACM) panels.
 - 2. Anchored directly to the curtain wall intermediate horizontal members.
 - 3. Interior-mounted to reflect daylight deeper into interior space.
 - 4. Light Shelf system consists of:
 - a. Aluminum Composite Material (ACM) panel, 4 mm thick.
 - b. Translucent polycarbonate panel, 4 mm or 16 mm thick.
 - c. ACM finish on upper and lower surface selected from Kawneer standard finishes.
 - d. Extruded aluminum outriggers and fascia.
 - e. Extruded aluminum anchor designed to secure to compatible verticals of framing system.
 - f. Anchor shall be designed to engage shelf so as to allow the shelf to rotate down and safely hang on its own for cleaning.
 - g. Extruded aluminum shear blocks designed to hinge on the anchors to allow rotating individual shelves for cleaning.
 - h. Panel/shelf projection not exceeding 30" (762 mm).
 - i. Mullion spacing of framing system shall not exceed 6' (1.83 m) on center.
 - j. Panel/shelf deflection shall not exceed 1/120 of horizontal span length.
 - 5. Framing system to support Light Shelf (select one from list):
 - a. Curtain wall framing system
 - b. Storefront framing system

- 6. Submittals for Light Shelf:
 - a. Manufacturer's installation instructions
 - b. Samples for verification:
 - 1) Factory-applied finish as selected by architect
 - 2) Functioning Light Shelf sample demonstrating operation
 - c. Shop drawing, including plans, elevations, sections, fabrication, and installation details
 - d. Validation from manufacturer of single-source for light shelf and framing system and compatibility between the systems
- C. Joint Sealants:
 - 1. For installation at perimeter of aluminum-framed systems, as specified in Division 07 Joint Sealants Section.
- D. Bituminous Paint:
 - 1. Cold-applied asphalt-mastic paint
 - 2. Complies with SSPC-Paint 12 requirements except containing no asbestos
 - 3. Formulated for 30-mil (0.762 mm) thickness per coat

2.7 FABRICATION

- A. Fabricate framing member components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations
 - 2. Accurately fitted joints that are flush, hairline, and weatherproof
 - 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior
 - 4. Physical and thermal isolation of glazing from framing members
 - 5. Accommodations for thermal and mechanical movements of glazing and framing that maintain required glazing edge clearances
 - 6. Provisions for field replacement of glazing
 - 7. Fasteners, anchors, and connection devices that are concealed from view to the greatest extent possible
- B. Mechanically Glazed Framing Members:
 - 1. Fabricate for flush glazing without projecting stops.
- C. Structural-Sealant-Glazed Framing Members:
 - 1. Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
- D. Storefront Framing:
 - 1. Fabricate components for assembly using manufacturer's standard installation instructions.
- E. After fabrication, clearly mark components to identify their locations in project according to shop drawings.

2.8 ALUMINUM FINISHES

- A. Finish designations that are prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Factory Finishing:
 - 1. Kawneer Permanodic® AA-M10C21A44, AAMA 611, Architectural Class I Color Anodic Coating Color - Black

PART 3 EXECUTION

3.1 EXAMINATION

- A. With installer present, examine openings, substrates, structural support, anchorage, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work:
 - 1. Verify rough opening dimensions.
 - 2. Verify levelness of sill plate.
 - 3. Verify operational clearances.
 - 4. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components for proper water management.
 - 5. Masonry Surfaces:
 - a. Masonry surfaces must be visibly dry and free of excess mortar, sand, and other construction debris.
 - 6. Wood Frame Walls:
 - a. Wood frame walls must be dry, clean, sound, well nailed, free of voids, and without offsets at joints.
 - b. Ensure that nail heads are driven flush with surfaces in opening and within 3" (76.2 mm) of opening.
 - 7. Metal Surfaces:
 - a. Metal surfaces must be dry and clean (free of grease, oil, dirt, rust, corrosion, and welding slag).
 - b. Ensure that metal surfaces are without sharp edges or offsets at joints.
- B. Proceed with installation only after correcting unsatisfactory conditions.

3.2 INSTALLATION

- A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum-framed storefront system, accessories, and other components.
- B. Install aluminum-framed storefront system so that components:
 - 1. Are level, plumb, square, and true to line
 - 2. Are without distortion and do not impede thermal movement
 - 3. Are anchored securely in place to structural support
 - 4. Are in proper relation to wall flashing and other adjacent construction

- C. Set sill members in bed of sealant or with gaskets, as indicated, for weather-tight construction.
- D. Install aluminum-framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within aluminum-framed storefront system to the exterior.
- E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 FIELD QUALITY CONTROL

A. Field Tests:

- 1. Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured.
- 2. Conduct tests for air infiltration and water penetration with manufacturer's representative present.
- 3. Tests that do not meet the specified performance requirements and units that have deficiencies shall be corrected as part of the contract amount.
- 4. Testing shall be performed per AAMA 503 by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements.
- 5. Air Infiltration Tests:
 - a. Conduct tests in accordance with ASTM E 783.
 - b. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.
- 6. Water Infiltration Tests:
 - a. Conduct tests in accordance with ASTM E 1105.
 - b. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.2 psf (300 Pa).

B. Manufacturer's Field Services:

- 1. Upon owner's written request, provide periodic site visit by manufacturer's field service representative.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjusting: Not applicable.
- B. Protection:
 - 1. Protect installed product's finish surfaces from damage during construction.
- C. Cleaning:
 - 1. Clean glass immediately after installation.
 - a. Comply with glass manufacturer's written recommendations for final cleaning and maintenance.
 - b. Remove non-permanent labels and clean surfaces.
 - 2. Clean aluminum surfaces.
 - 3. Avoid damaging protective coatings and finishes.
 - 4. Remove excess sealants, glazing materials, dirt, and other substances.
 - 5. Repair or replace damaged installed products.
 - 6. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.
 - 7. Remove construction debris from project site and legally dispose of debris.

END OF SECTION 084113

NOTES AND DISCLAIMERS

Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and curtain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor. It is the responsibility of the owner, the specifier, the architect, the general contractor, and the installer and the fabricator/transformer, consistent with their roles, to determine the appropriate materials for a project in strict conformity to all applicable national, regional and local building codes and regulations.

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Product Selection Guide

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Unit Sections	LS-DH-24

Document Navigation Tips:

Items listed in the table of contents above are active links that will take you to the corresponding page.

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_LS-Dual.pdf

CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/08552.rtf

Detailed Product Description (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaLifestyleSrs-DH_DPD.rtf

Size Tables (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/LSCDHE_D.dwg

CAD cross sections (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/LS-DH_XSEC_D.dwg

3D & BIM (requires appropriate software to read and use):

https://media.pella.com/professional/adm/RevitFiles/LS-Revit/Window-Double-Hung-Pella-Lifestyle_Series.zip

Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaSKP_LifestyleSeries_Double-Hung.zip

Combination Recommendations:

https://media.pella.com/professional/adm/Clad-Wood/D_Combinations.pdf

Installation Details:

https://media.pella.com/professional/adm/Clad-Wood/F_InstallationDetails.pdf

Bay/Bow Details:

https://media.pella.com/professional/adm/Clad-Wood/Pella-Wood_BayBowWindows.pdf

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Lifestyle Series Double-Hung

Size and Performance Data

		Dual-Pane
Sizes		
Standard double-hung vent/fixed sizes		●
Transom sizes		●
Egress sizes		●
Special sizes available		●
Performance ₁		
Meets or Exceeds AAMA / WDMA Ratings		H-LC25-LC50 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 1.57 psf wind pressure) ₂		0.11
Water Resistance		7.5 psf
Design Pressure		25–50 psf
Other Performance Criteria		
Forced Entry Resistance Level (Minimum Security Grade) ₃		10
Operating Force (lb) Initiate Motion / Maintain Motion (of Hallmark tested size and glazing) ₄		40/40

Sound Transmission Class / Outdoor-Indoor Transmission Class

Product	Frame Size Tested ₅	Glazing System				STC Rating	OITC Rating
		Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness	Third Pane Thickness (HGP)		
Pella Lifestyle Series	37" x 59"	11/16"	2.5mm	2.5mm	—	27	23
Double-Hung	37" x 59"	11/16"	5mm	3mm	—	31	27

(—) = Not Available

(1) Maximum performance for single unit when glazed with the appropriate glass thickness. See Design Data pages in this section for specific product performance class and grade values.

(2) Published performance data for air infiltration is determined by testing a minimum of four (4) products of NFRC model size. Testing is conducted in accordance with ASTM E283. Air infiltration ratings for products will differ by size. The performance data does not apply to combination assemblies unless noted. Actual product performance may vary for a number of reasons including installation and product care.

(3) The higher the level, the greater the product's ability to resist forced entry.

(4) Glazing configurations may result in higher operational forces.

(5) ASTM E 1425 defines standard sizes for acoustical testing. Ratings achieved at that size are representative of all sizes of the same configuration.

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LS-DH-2



Lifestyle Series Double-Hung

Features and Options

Standard	Options / Upgrades
Glazing	
Glazing Type	
Dual-Pane Insulating Glass	—
Insulated Glass Options/Low-E Types	
Advanced Low-E	SunDefense™ Low-E
	SunDefense+ Low-E
	AdvancedComfort Low-E
	NaturalSun Low-E
	NaturalSun+ Low-E
Additional Glass Options	
Annealed Glass	STC Glazing Options
	Tempered Glass
	Obscure Glass ₁
Gas Fill/High Altitude	
Argon	High altitude (Air-filled only)
Exterior	
EnduraClad® protective finish	—
Cladding Colors	
12 Standard colors ₁	—
Interior₁	
Unfinished wood	Factory primed
	Factory prefinished paint ₁
	Factory prefinished stain ₁
Wood Types	
Pine	—
Hardware	
Finishes	
Champagne, Matte Black, White or Brown	Oil Rubbed Bronze, Satin Nickel
Sash Locks/Sash Lifts	
Cam-action lock	Sash lifts ₂
Tilt-Wash Cleaning	
Tilt to interior on both sashes	—
Grilles	
Grilles-Between-the-Glass	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Simulated Divided Light with Optional Spacer₃	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Screens	
—	Full-Size InView™ screens, Hidden Screen ₁

(—) = Not Available

(1) Contact your local Pella sales representative for current color options.

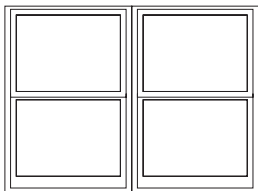
(2) Sold separately for Pella® Lifestyle Series double-hung windows.

(3) Available with Low-E argon-insulated glass only.

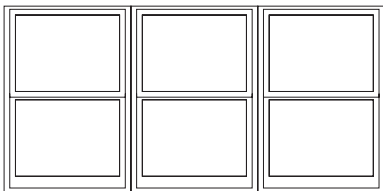


Combination Assemblies

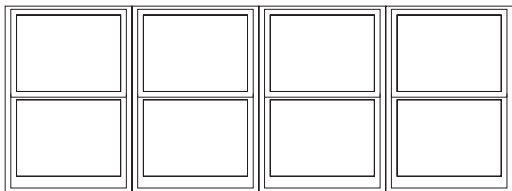
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullioned together by a direct or reinforcing mullion. Pella window combinations are available in an endless variety of arrangements. Refer to Combinations section for requirements and limitations. Contact your local Pella sales representative for more information.



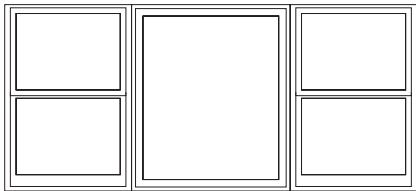
Two-Wide



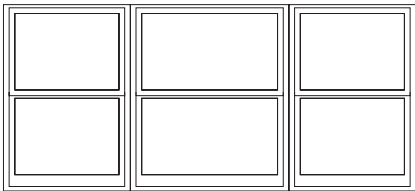
Three-Wide Equal



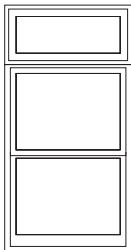
Four-Wide Equal



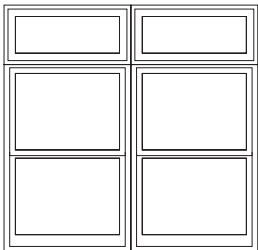
Center Fixed with Flankers



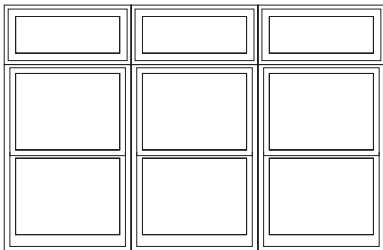
Three-Wide Unequal



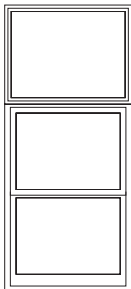
Transom over
Single



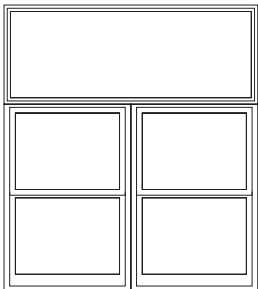
Two-Wide Transoms over
Two-Wide



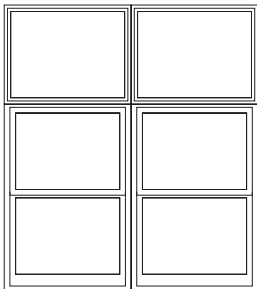
Three-Wide Transoms over
Three-Wide



Clad Frame over
Single



Single Clad Frame over
Two-Wide



Two Wide Clad Frame over
Two-Wide

**WINDOW SIZES
AS FIELD VERIFIED**



Lifestyle Series Double-Hung

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.			Canada ₂		
										Zone			ER	Zone	
Dual-Pane Vent										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-35-00514-00001	2.5	2.5	argon	0.30	0.30	0.56	56						
	with grilles-between-the-glass	PEL-N-35-00515-00001				0.30	0.27	0.50	56						
	with Simulated Divided Light	PEL-N-35-00516-00001				0.30	0.27	0.50	56						
11/16"	Advanced LowE IG	PEL-N-35-00517-00001	3	3	argon	0.30	0.30	0.56	55						
	with grilles-between-the-glass	PEL-N-35-00518-00001				0.30	0.27	0.50	55						
	with Simulated Divided Light	PEL-N-35-00519-00001				0.30	0.27	0.50	55						
11/16"	SunDefense™ Low-E IG	PEL-N-35-00550-00001	2.5	2.5	argon	0.29	0.22	0.52	56				S		
	with grilles-between-the-glass	PEL-N-35-00551-00001				0.29	0.20	0.47	56				S		
	with Simulated Divided Light	PEL-N-35-00552-00001				0.29	0.20	0.47	56				S		
11/16"	SunDefense Low-E IG	PEL-N-35-00553-00001	3	3	argon	0.29	0.22	0.52	55				S		
	with grilles-between-the-glass	PEL-N-35-00554-00001				0.29	0.20	0.46	55				S		
	with Simulated Divided Light	PEL-N-35-00555-00001				0.29	0.20	0.46	55				S		
11/16"	SunDefense+ Low-E IG	PEL-N-35-00568-00001	2.5	2.5	argon	0.25	0.22	0.51	45		NC	SC	S		
	with grilles-between-the-glass	PEL-N-35-00569-00001				0.25	0.20	0.46	45		NC	SC	S		
	with Simulated Divided Light	PEL-N-35-00570-00001				0.25	0.20	0.46	45		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-35-00571-00001	3	3	argon	0.25	0.22	0.51	44		NC	SC	S		
	with grilles-between-the-glass	PEL-N-35-00572-00001				0.25	0.20	0.45	44		NC	SC	S		
	with Simulated Divided Light	PEL-N-35-00573-00001				0.25	0.20	0.45	44		NC	SC	S		

ACCEPTABLE GLAZING

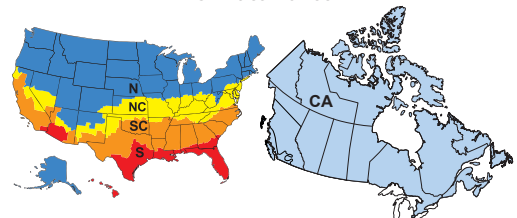
	with Simulated Divided Light	PEL-N-35-00534-00001				0.26	0.27	0.49	45						
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00535-00001	3	3	argon	0.26	0.29	0.55	44						
	with grilles-between-the-glass	PEL-N-35-00536-00001				0.26	0.26	0.49	44						
	with Simulated Divided Light	PEL-N-35-00537-00001				0.26	0.26	0.49	44						
11/16"	NaturalSun LowE IG	PEL-N-35-00478-00001	2.5	2.5	argon	0.30	0.56	0.64	55					34	CA
	with grilles-between-the-glass	PEL-N-35-00479-00001				0.30	0.50	0.57	55						
	with Simulated Divided Light	PEL-N-35-00480-00001				0.30	0.50	0.57	55						
11/16"	NaturalSun LowE IG	PEL-N-35-00481-00001	3	3	argon	0.30	0.55	0.63	54					34	CA
	with grilles-between-the-glass	PEL-N-35-00482-00001				0.30	0.49	0.57	54						
	with Simulated Divided Light	PEL-N-35-00483-00001				0.30	0.49	0.57	54						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00496-00001	2.5	2.5	argon	0.26	0.51	0.63	44	N				35	CA
	with grilles-between-the-glass	PEL-N-35-00497-00001				0.26	0.46	0.56	44	N					
	with Simulated Divided Light	PEL-N-35-00498-00001				0.26	0.46	0.56	44	N					
11/16"	NaturalSun+ LowE IG	PEL-N-35-00499-00001	3	3	argon	0.26	0.50	0.62	43	N				35	CA
	with grilles-between-the-glass	PEL-N-35-00500-00001				0.26	0.45	0.55	43	N					
	with Simulated Divided Light	PEL-N-35-00501-00001				0.26	0.45	0.55	43	N					

R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
VLT % = Visible Light Transmission
CR = Condensation Resistance
ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (version 7) criteria.

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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

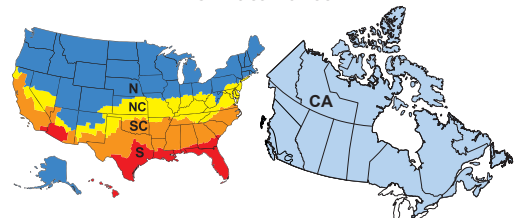
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Vent – High Altitude Glazing										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-35-00523-00001	2.5	2.5	air	0.33	0.30	0.57	52						
	with grilles-between-the-glass	PEL-N-35-00524-00001				0.33	0.27	0.50	52						
	with Simulated Divided Light	PEL-N-35-00525-00001				0.33	0.27	0.50	52						
11/16"	Advanced LowE IG	PEL-N-35-00526-00001	3	3	air	0.33	0.30	0.56	52						
	with grilles-between-the-glass	PEL-N-35-00527-00001				0.33	0.27	0.50	52						
	with Simulated Divided Light	PEL-N-35-00528-00001				0.33	0.27	0.50	52						
11/16"	SunDefense™ Low-E IG	PEL-N-35-00559-00001	2.5	2.5	air	0.33	0.22	0.52	53						
	with grilles-between-the-glass	PEL-N-35-00560-00001				0.33	0.20	0.47	53						
	with Simulated Divided Light	PEL-N-35-00561-00001				0.33	0.20	0.47	53						
11/16"	SunDefense Low-E IG	PEL-N-35-00562-00001	3	3	air	0.33	0.23	0.52	52						
	with grilles-between-the-glass	PEL-N-35-00563-00001				0.33	0.20	0.46	52						
	with Simulated Divided Light	PEL-N-35-00564-00001				0.33	0.20	0.46	52						
11/16"	SunDefense+ Low-E IG	PEL-N-35-00577-00001	2.5	2.5	air	0.28	0.22	0.51	42				SC	S	
	with grilles-between-the-glass	PEL-N-35-00578-00001				0.28	0.20	0.46	42				SC	S	
	with Simulated Divided Light	PEL-N-35-00579-00001				0.28	0.20	0.46	42				SC	S	
11/16"	SunDefense+ Low-E IG	PEL-N-35-00580-00001	3	3	air	0.28	0.22	0.51	41				SC	S	
	with grilles-between-the-glass	PEL-N-35-00581-00001				0.28	0.20	0.45	41				SC	S	
	with Simulated Divided Light	PEL-N-35-00582-00001				0.28	0.20	0.45	41				SC	S	
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00541-00001	2.5	2.5	air	0.28	0.30	0.55	41						
	with grilles-between-the-glass	PEL-N-35-00542-00001				0.28	0.27	0.49	41						
	with Simulated Divided Light	PEL-N-35-00543-00001				0.28	0.27	0.49	41						
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00544-00001	3	3	air	0.28	0.29	0.55	40						
	with grilles-between-the-glass	PEL-N-35-00545-00001				0.28	0.26	0.49	40						
	with Simulated Divided Light	PEL-N-35-00546-00001				0.28	0.26	0.49	40						
11/16"	NaturalSun LowE IG	PEL-N-35-00487-00001	2.5	2.5	air	0.34	0.56	0.64	52						
	with grilles-between-the-glass	PEL-N-35-00488-00001				0.34	0.50	0.57	52						
	with Simulated Divided Light	PEL-N-35-00489-00001				0.34	0.50	0.57	52						
11/16"	NaturalSun LowE IG	PEL-N-35-00490-00001	3	3	air	0.34	0.55	0.63	51						
	with grilles-between-the-glass	PEL-N-35-00491-00001				0.34	0.49	0.57	51						
	with Simulated Divided Light	PEL-N-35-00492-00001				0.34	0.49	0.57	51						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00505-00001	2.5	2.5	air	0.28	0.51	0.63	41						
	with grilles-between-the-glass	PEL-N-35-00506-00001				0.28	0.46	0.56	41						
	with Simulated Divided Light	PEL-N-35-00507-00001				0.28	0.46	0.56	41						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00508-00001	3	3	air	0.29	0.50	0.62	40						
	with grilles-between-the-glass	PEL-N-35-00509-00001				0.29	0.45	0.62	40						
	with Simulated Divided Light	PEL-N-35-00510-00001				0.29	0.45	0.55	40						

R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
VLT % = Visible Light Transmission
CR = Condensation Resistance
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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Fixed										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-229-00861-00001	2.5	2.5	argon	0.27	0.31	0.58	58						
	with grilles-between-the-glass	PEL-N-229-00862-00001				0.27	0.28	0.52	58						
	with Simulated Divided Light	PEL-N-229-00863-00001				0.28	0.28	0.52	58						
11/16"	Advanced LowE IG	PEL-N-229-00949-00001	3	3	argon	0.27	0.31	0.58	57						
	with grilles-between-the-glass	PEL-N-229-00950-00001				0.27	0.28	0.51	57						
	with Simulated Divided Light	PEL-N-229-00951-00001				0.28	0.28	0.51	57						
11/16"	Advanced LowE IG	PEL-N-229-00965-00001	4	4	argon	0.28	0.30	0.57	55						
	with grilles-between-the-glass	PEL-N-229-00966-00001				0.29	0.28	0.51	55						
	with Simulated Divided Light	PEL-N-229-00967-00001				0.29	0.28	0.51	55						
11/16"	SunDefense™ Low-E IG	PEL-N-229-01045-00001	2.5	2.5	argon	0.27	0.23	0.54	58			SC	S		
	with grilles-between-the-glass	PEL-N-229-01046-00001				0.27	0.21	0.48	58			SC	S		
	with Simulated Divided Light	PEL-N-229-01047-00001				0.28	0.21	0.48	58			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01053-00001	3	3	argon	0.27	0.23	0.53	57			SC	S		
	with grilles-between-the-glass	PEL-N-229-01054-00001				0.27	0.21	0.48	57			SC	S		
	with Simulated Divided Light	PEL-N-229-01055-00001				0.28	0.21	0.48	57			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01061-00001	4	4	argon	0.28	0.23	0.53	55			SC	S		
	with grilles-between-the-glass	PEL-N-229-01062-00001				0.29	0.21	0.47	55				S		
	with Simulated Divided Light	PEL-N-229-01063-00001				0.29	0.21	0.47	55				S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01493-00001	2.5	2.5	argon	0.23	0.22	0.53	46		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01494-00001				0.23	0.20	0.47	46		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01495-00001				0.24	0.20	0.47	46		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01501-00001	3	3	argon	0.23	0.22	0.52	45		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01502-00001				0.23	0.20	0.47	45		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01503-00001				0.24	0.20	0.47	45		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01509-00001	4	4	argon	0.24	0.22	0.52	43		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01510-00001				0.25	0.20	0.46	43		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01511-00001				0.25	0.20	0.46	43		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-229-00997-00001	2.5	2.5	argon	0.23	0.30	0.57	46		NC				
	with grilles-between-the-glass	PEL-N-229-00998-00001				0.23	0.27	0.51	46		NC				
	with Simulated Divided Light	PEL-N-229-00999-00001				0.24	0.27	0.51	46		NC				
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01005-00001	3	3	argon	0.23	0.30	0.56	45		NC				
	with grilles-between-the-glass	PEL-N-229-01006-00001				0.23	0.27	0.50	45		NC				
	with Simulated Divided Light	PEL-N-229-01007-00001				0.24	0.27	0.50	45		NC				
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01013-00001	4	4	argon	0.24	0.30	0.55	43		NC				
	with grilles-between-the-glass	PEL-N-229-01014-00001				0.25	0.27	0.50	43		NC				
	with Simulated Divided Light	PEL-N-229-01015-00001				0.25	0.27	0.50	43		NC				

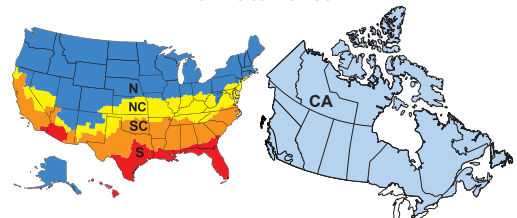
ACCEPTABLE GLAZING

R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
VLT % = Visible Light Transmission
CR = Condensation Resistance
ER = Canadian Energy Rating

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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

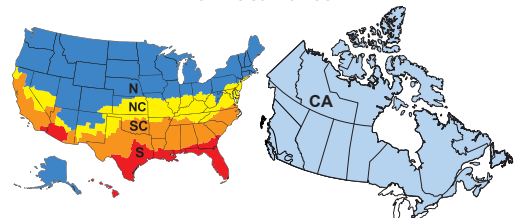
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Fixed (continued)										N	NC	SC	S	CA	
11/16"	NaturalSun LowE IG	PEL-N-229-00901-00001	2.5	2.5	argon	0.28	0.58	0.66	57					38	CA
	with grilles-between-the-glass	PEL-N-229-00902-00001				0.28	0.52	0.59	57					35	CA
	with Simulated Divided Light	PEL-N-229-00903-00001				0.29	0.52	0.59	57					34	CA
11/16"	NaturalSun LowE IG	PEL-N-229-00909-00001	3	3	argon	0.28	0.57	0.65	56					38	CA
	with grilles-between-the-glass	PEL-N-229-00910-00001				0.28	0.51	0.58	56					34	CA
	with Simulated Divided Light	PEL-N-229-00911-00001				0.29	0.51	0.58	56						
11/16"	NaturalSun LowE IG	PEL-N-229-00917-00001	4	4	argon	0.29	0.55	0.65	55					35	CA
	with grilles-between-the-glass	PEL-N-229-00918-00001				0.30	0.50	0.58	55						
	with Simulated Divided Light	PEL-N-229-00919-00001				0.30	0.50	0.58	55						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01445-00001	2.5	2.5	argon	0.24	0.53	0.64	45	N				41	CA
	with grilles-between-the-glass	PEL-N-229-01446-00001				0.24	0.47	0.58	45	N				37	CA
	with Simulated Divided Light	PEL-N-229-01447-00001				0.25	0.47	0.58	45	N				36	CA
11/16"	NaturalSun+ LowE IG	PEL-N-229-01453-00001	3	3	argon	0.24	0.52	0.64	44	N				40	CA
	with grilles-between-the-glass	PEL-N-229-01454-00001				0.24	0.46	0.57	44	N				37	CA
	with Simulated Divided Light	PEL-N-229-01455-00001				0.25	0.46	0.57	44	N				35	CA
11/16"	NaturalSun+ LowE IG	PEL-N-229-01461-00001	4	4	argon	0.25	0.50	0.63	42	N				38	CA
	with grilles-between-the-glass	PEL-N-229-01462-00001				0.26	0.45	0.56	42	N					
	with Simulated Divided Light	PEL-N-229-01463-00001				0.26	0.45	0.56	42	N					

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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Fixed – High Altitude Glazing										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-229-00857-00001	2.5	2.5	air	0.31	0.31	0.58	54						
	with grilles-between-the-glass	PEL-N-229-00858-00001				0.31	0.28	0.52	54						
	with Simulated Divided Light	PEL-N-229-00859-00001				0.32	0.28	0.52	54						
11/16"	Advanced LowE IG	PEL-N-229-00945-00001	3	3	air	0.31	0.31	0.58	53						
	with grilles-between-the-glass	PEL-N-229-00946-00001				0.31	0.28	0.51	53						
	with Simulated Divided Light	PEL-N-229-00947-00001				0.32	0.28	0.51	53						
11/16"	Advanced LowE IG	PEL-N-229-00961-00001	4	4	air	0.33	0.31	0.57	51						
	with grilles-between-the-glass	PEL-N-229-00962-00001				0.34	0.28	0.51	51						
	with Simulated Divided Light	PEL-N-229-00963-00001				0.34	0.28	0.51	51						
11/16"	SunDefense™ Low-E IG	PEL-N-229-01041-00001	2.5	2.5	air	0.31	0.23	0.54	55				S		
	with grilles-between-the-glass	PEL-N-229-01042-00001				0.31	0.21	0.48	55				S		
	with Simulated Divided Light	PEL-N-229-01043-00001				0.28	0.21	0.48	53			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01049-00001	3	3	air	0.31	0.23	0.53	54				S		
	with grilles-between-the-glass	PEL-N-229-01050-00001				0.31	0.21	0.48	54				S		
	with Simulated Divided Light	PEL-N-229-01051-00001				0.32	0.21	0.48	54				S		
11/16"	SunDefense Low-E IG	PEL-N-229-01057-00001	4	4	air	0.32	0.23	0.53	52				S		
	with grilles-between-the-glass	PEL-N-229-01058-00001				0.34	0.21	0.47	52						
	with Simulated Divided Light	PEL-N-229-01059-00001				0.34	0.21	0.47	52						
11/16"	SunDefense+ Low-E IG	PEL-N-229-01489-00001	2.5	2.5	air	0.25	0.23	0.53	42		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01490-00001				0.25	0.21	0.47	42		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01491-00001				0.26	0.21	0.47	42			SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01497-00001	3	3	air	0.26	0.23	0.52	41			SC	S		
	with grilles-between-the-glass	PEL-N-229-01498-00001				0.26	0.21	0.47	41			SC	S		
	with Simulated Divided Light	PEL-N-229-01499-00001				0.27	0.21	0.47	41			SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01505-00001	4	4	air	0.27	0.23	0.52	39			SC	S		
	with grilles-between-the-glass	PEL-N-229-01506-00001				0.28	0.21	0.46	39			SC	S		
	with Simulated Divided Light	PEL-N-229-01507-00001				0.28	0.21	0.46	39			SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-229-00993-00001	2.5	2.5	air	0.26	0.30	0.57	42						
	with grilles-between-the-glass	PEL-N-229-00994-00001				0.26	0.27	0.51	42						
	with Simulated Divided Light	PEL-N-229-00995-00001				0.26	0.27	0.51	42						
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01001-00001	3	3	air	0.26	0.30	0.56	41						
	with grilles-between-the-glass	PEL-N-229-01002-00001				0.26	0.27	0.50	41						
	with Simulated Divided Light	PEL-N-229-01003-00001				0.27	0.27	0.50	41						
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01009-00001	4	4	air	0.27	0.30	0.55	39						
	with grilles-between-the-glass	PEL-N-229-01010-00001				0.28	0.27	0.50	39						
	with Simulated Divided Light	PEL-N-229-01011-00001				0.28	0.27	0.50	39						
11/16"	NaturalSun LowE IG	PEL-N-229-00897-00001	2.5	2.5	air	0.32	0.57	0.66	54						
	with grilles-between-the-glass	PEL-N-229-00898-00001				0.32	0.52	0.59	54						
	with Simulated Divided Light	PEL-N-229-00899-00001				0.33	0.52	0.59	54						
11/16"	NaturalSun LowE IG	PEL-N-229-00905-00001	3	3	air	0.32	0.56	0.65	53						
	with grilles-between-the-glass	PEL-N-229-00906-00001				0.32	0.51	0.58	53						
	with Simulated Divided Light	PEL-N-229-00907-00001				0.33	0.51	0.58	53						
11/16"	NaturalSun LowE IG	PEL-N-229-00913-00001	4	4	air	0.34	0.55	0.65	51						
	with grilles-between-the-glass	PEL-N-229-00914-00001				0.35	0.49	0.58	51						
	with Simulated Divided Light	PEL-N-229-00915-00001				0.35	0.49	0.58	51						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01441-00001	2.5	2.5	air	0.26	0.52	0.64	41	N				37	CA
	with grilles-between-the-glass	PEL-N-229-01442-00001				0.26	0.47	0.58	41	N				35	CA
	with Simulated Divided Light	PEL-N-229-01443-00001				0.27	0.47	0.58	41						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01449-00001	3	3	air	0.27	0.51	0.64	40					36	CA
	with grilles-between-the-glass	PEL-N-229-01450-00001				0.27	0.46	0.57	40						
	with Simulated Divided Light	PEL-N-229-01451-00001				0.28	0.46	0.57	40						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01457-00001	4	4	air	0.28	0.50	0.63	38					34	CA
	with grilles-between-the-glass	PEL-N-229-01458-00001				0.29	0.45	0.56	38						
	with Simulated Divided Light	PEL-N-229-01459-00001				0.29	0.45	0.56	38						

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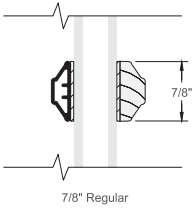
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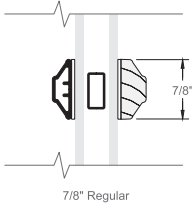
Grilles

Grille Profiles

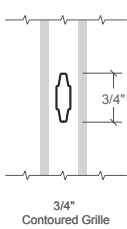
Simulated-Divided-Light
Grilles



Simulated-Divided-Light
Grilles with optional spacer

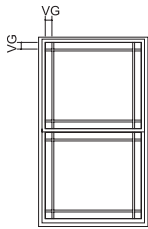


Grilles-Between-the-Glass

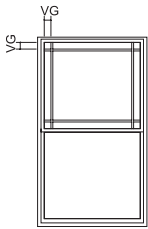


Grille Patterns

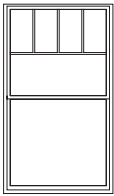
Grilles-Between-the-Glass and Simulated-Divided-Light Grilles



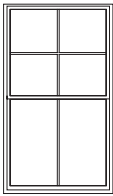
9-Lite Prairie



9-Lite Prairie
Top Sash Only



Top Row



Cross

- 9-Lite Prairie**
- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
 - Available in transoms ≥ 1'3" height and width.
- Cross**
- Minimum DH frame height 35".
 - Horizontal bar will be at 1/2" of the VG height of the top sash.
- Top Row**
- Minimum DH frame height 35".
 - Horizontal bar will be at 1/2" of the VG height of the top sash.

For traditional patterns, see size tables.

VG = Visible Glass
(1) Grilles are available in traditional patterns only.
Lite dimensions noted can vary.
For size and pattern availability contact your local Pella sales representative.



Lifestyle Series Double-Hung

Design Data - Replacement Double-Hung

Replacement Vent

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
23.5 x 35.5		20-5/16	14-1/2	2.0	3.7	2.5	3	LC50
23.5 x 37.5		20-5/16	15-1/2	2.1	4.0	2.5	3	LC50
23.5 x 41.5		20-5/16	17-1/2	2.4	4.5	2.5	3	LC50
23.5 x 45.5		20-5/16	19-1/2	2.7	5.0	2.5	3	LC50
23.5 x 47.5		20-5/16	20-1/2	2.8	5.3	2.5	3	LC50
23.5 x 51.5		20-5/16	22-1/2	3.1	5.8	2.5	3	LC50
23.5 x 53.5		20-5/16	23-1/2	3.3	6.1	2.5	3	LC40/LC50
23.5 x 57.5		20-5/16	25-1/2	3.5	6.6	2.5	3	LC40/LC50
23.5 x 59.5		20-5/16	26-1/2	3.7	6.8	2.5	3	LC40/LC50
23.5 x 61.5		20-5/16	27-1/2	3.8	7.1	2.5	3	LC40/LC50
23.5 x 65.5		20-5/16	29-1/2	4.1	7.6	2.5	3	LC30/LC50
23.5 x 71.5		20-5/16	32-1/2	4.5	8.4	2.5	3	LC30/LC50
27.5 x 35.5		24-5/16	14-1/2	2.4	4.6	2.5	3	LC50
27.5 x 37.5		24-5/16	15-1/2	2.6	4.9	2.5	3	LC50
27.5 x 41.5		24-5/16	17-1/2	2.9	5.5	2.5	3	LC50
27.5 x 45.5		24-5/16	19-1/2	3.2	6.1	2.5	3	LC50
27.5 x 47.5		24-5/16	20-1/2	3.4	6.4	2.5	3	LC50
27.5 x 51.5		24-5/16	22-1/2	3.7	7.1	2.5	3	LC50
27.5 x 53.5		24-5/16	23-1/2	3.9	7.4	2.5	3	LC40/LC50
27.5 x 57.5		24-5/16	25-1/2	4.3	8.0	2.5	3	LC40/LC50
27.5 x 59.5		24-5/16	26-1/2	4.4	8.3	2.5	3	LC40/LC50
27.5 x 61.5		24-5/16	27-1/2	4.6	8.6	2.5	3	LC40/LC50
27.5 x 65.5		24-5/16	29-1/2	4.9	9.2	2.5	3	LC30/LC50
27.5 x 71.5	E1	24-5/16	32-1/2	5.4	10.2	2.5	3	LC30/LC50
29.5 x 35.5		26-5/16	14-1/2	2.6	5.0	2.5	3	LC50
29.5 x 37.5		26-5/16	15-1/2	2.8	5.3	2.5	3	LC50
29.5 x 41.5		26-5/16	17-1/2	3.1	6.0	2.5	3	LC50
29.5 x 45.5		26-5/16	19-1/2	3.5	6.7	2.5	3	LC50
29.5 x 47.5		26-5/16	20-1/2	3.7	7.0	2.5	3	LC40/LC50
29.5 x 51.5		26-5/16	22-1/2	4.1	7.7	2.5	3	LC40/LC50
29.5 x 53.5		26-5/16	23-1/2	4.2	8.0	2.5	3	LC40/LC50
29.5 x 57.5		26-5/16	25-1/2	4.6	8.7	2.5	3	LC40/LC50
29.5 x 59.5		26-5/16	26-1/2	4.8	9.0	2.5	3	LC35/LC50
29.5 x 61.5	E1	26-5/16	27-1/2	5.0	9.4	2.5	3	LC35/LC50
29.5 x 65.5	E1	26-5/16	29-1/2	5.3	10.1	2.5	3	LC30/LC50
29.5 x 71.5	E	26-5/16	32-1/2	5.9	11.1	2.5	3	LC30/LC50

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.



Lifestyle Series Double-Hung

Design Data - Replacement Double-Hung

Replacement Vent								
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
31.5 x 35.5		28-5/16	14-1/2	2.8	5.4	2.5	3	LC50
31.5 x 37.5		28-5/16	15-1/2	3.0	5.7	2.5	3	LC50
31.5 x 41.5		28-5/16	17-1/2	3.4	6.5	2.5	3	LC50
31.5 x 45.5		28-5/16	19-1/2	3.8	7.2	2.5	3	LC50
31.5 x 47.5		28-5/16	20-1/2	4.0	7.6	2.5	3	LC40/LC50
31.5 x 51.5		28-5/16	22-1/2	4.4	8.3	2.5	3	LC40/LC50
31.5 x 53.5		28-5/16	23-1/2	4.6	8.7	2.5	3	LC40/LC50
31.5 x 57.5	E1	28-5/16	25-1/2	5.0	9.4	2.5	3	LC40/LC50
31.5 x 59.5	E1	28-5/16	26-1/2	5.2	9.8	2.5	3	LC35/LC50
31.5 x 61.5	E1	28-5/16	27-1/2	5.4	10.2	2.5	3	LC35/LC50
31.5 x 65.5	E	28-5/16	29-1/2	5.8	10.9	2.5	3	LC30/LC50
31.5 x 71.5	E	28-5/16	32-1/2	6.3	12.0	2.5	3	LC30/LC50
35.5 x 35.5		32-5/16	14-1/2	3.2	6.2	2.5	3	LC35/LC50
35.5 x 37.5		32-5/16	15-1/2	3.4	6.6	2.5	3	LC35/LC50
35.5 x 41.5		32-5/16	17-1/2	3.9	7.5	2.5	3	LC35/LC50
35.5 x 45.5		32-5/16	19-1/2	4.3	8.3	2.5	3	LC35/LC50
35.5 x 47.5		32-5/16	20-1/2	4.6	8.7	2.5	3	LC35/LC50
35.5 x 51.5		32-5/16	22-1/2	5.0	9.6	2.5	3	LC35/LC50
35.5 x 53.5		32-5/16	23-1/2	5.2	10.0	2.5	3	LC35/LC50
35.5 x 57.5	E1	32-5/16	25-1/2	5.7	10.8	2.5	3	LC35/LC50
35.5 x 59.5	E	32-5/16	26-1/2	5.9	11.3	2.5	3	LC35/LC50
35.5 x 61.5	E	32-5/16	27-1/2	6.1	11.7	2.5	3	LC35/LC50
35.5 x 65.5	E	32-5/16	29-1/2	6.6	12.5	2.5	3	LC30/LC50
35.5 x 71.5	E	32-5/16	32-1/2	7.2	13.8	2.5	3	LC30/LC50
39.5 x 35.5		36-5/16	14-1/2	3.6	7.0	2.5	3	LC30
39.5 x 37.5		36-5/16	15-1/2	3.9	7.5	2.5	3	LC30
39.5 x 41.5		36-5/16	17-1/2	4.4	8.4	2.5	3	LC30
39.5 x 45.5		36-5/16	19-1/2	4.9	9.4	2.5	3	LC30
39.5 x 47.5		36-5/16	20-1/2	5.1	9.9	2.5	3	LC30
39.5 x 51.5		36-5/16	22-1/2	5.6	10.8	2.5	3	LC30
39.5 x 53.5		36-5/16	23-1/2	5.9	11.3	2.5	3	LC30
39.5 x 57.5	E	36-5/16	25-1/2	6.4	12.3	2.5	3	LC30
39.5 x 59.5	E	36-5/16	26-1/2	6.6	12.7	2.5	3	LC30
39.5 x 61.5	E	36-5/16	27-1/2	6.9	13.2	2.5	3	LC30
39.5 x 65.5	E	36-5/16	29-1/2	7.4	14.2	2.5	3	LC30
39.5 x 71.5	E	36-5/16	32-1/2	8.1	15.6	2.5	3	LC30
41.5 x 35.5		38-5/16	14-1/2	3.6	7.4	2.5	3	LC30
41.5 x 37.5		38-5/16	15-1/2	3.9	7.9	2.5	3	LC30
41.5 x 41.5		38-5/16	17-1/2	4.4	8.9	2.5	3	LC30
41.5 x 45.5		38-5/16	19-1/2	4.9	9.9	2.5	3	LC30
41.5 x 47.5		38-5/16	20-1/2	5.1	10.4	2.5	3	LC30
41.5 x 51.5		38-5/16	22-1/2	5.6	11.5	2.5	3	LC30
41.5 x 53.5		38-5/16	23-1/2	5.9	12.0	2.5	3	LC30
41.5 x 57.5	E	38-5/16	25-1/2	6.4	13.0	2.5	3	LC30
41.5 x 59.5	E	38-5/16	26-1/2	6.6	13.5	2.5	3	LC30
41.5 x 61.5	E	38-5/16	27-1/2	6.9	14.0	2.5	3	LC30
41.5 x 65.5	E	38-5/16	29-1/2	7.4	15.0	2.5	3	LC30
41.5 x 71.5	E	38-5/16	32-1/2	8.1	16.5	2.5	3	LC30

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.



Lifestyle Series Double-Hung

Design Data - Replacement Fixed and Transoms

Replacement Fixed				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Annealed	Tempered	
41 x 35.5	7.7	3	3	LC50
41 x 37.5	8.2	3	3	LC50
41 x 41.5	9.2	3	3	LC50
41 x 45.5	10.2	3	3	LC50
41 x 47.5	10.7	3	3	LC50
41 x 51.5	11.7	3	3	LC50
41 x 53.5	12.2	3	3	LC50
41 x 57.5	13.2	3	3	LC50
41 x 59.5	13.7	3	3	LC50
41 x 61.5	14.2	3	3	LC50
41 x 65.5	15.2	3	3	LC50
41 x 71.5	16.7	3	3	LC45/LC50
47 x 35.5	8.9	3	3	LC50
47 x 37.5	9.5	3	3	LC50
47 x 41.5	10.7	3	3	LC50
47 x 45.5	11.9	3	3	LC50
47 x 47.5	12.4	3	3	LC50
47 x 51.5	13.6	3	3	LC50
47 x 53.5	14.2	3	3	LC50
47 x 57.5	15.4	3	3	LC50
47 x 59.5	15.9	3	3	LC45/LC50
47 x 61.5	16.5	3	3	LC45/LC50
47 x 65.5	17.7	3	3	LC40/LC50
47 x 71.5	19.5	4	4	LC50
53 x 35.5	10.2	3	3	LC50
53 x 37.5	10.9	3	3	LC50
53 x 41.5	12.2	3	3	LC50
53 x 45.5	13.5	3	3	LC50
53 x 47.5	14.2	3	3	LC50
53 x 51.5	15.6	3	3	LC50
53 x 53.5	16.2	3	4	LC45/LC50
53 x 57.5	17.6	3	4	LC40/LC50
53 x 59.5	18.2	4	4	LC50
53 x 61.5	18.9	4	4	LC50
53 x 65.5	20.2	4	4	LC50
53 x 71.5	22.2	4	4	LC50
59 x 35.5	11.5	3	3	LC50
59 x 37.5	12.2	3	3	LC50
59 x 41.5	13.7	3	3	LC50
59 x 45.5	15.2	3	3	LC50
59 x 47.5	16.0	3	3	LC45/LC50
59 x 51.5	17.5	3	4	LC45/LC50
59 x 53.5	18.2	4	4	LC50
59 x 57.5	19.7	4	4	LC50
59 x 59.5	20.5	4	4	LC50
59 x 61.5	21.2	4	4	LC50
59 x 65.5	22.8	4	4	LC50
59 x 71.5	25.0	4	4	LC45/LC50

Replacement Fixed Transom				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Annealed	Tempered	
23.5 x 14	1.2	3	3	LC50
23.5 x 17	1.6	3	3	LC50
23.5 x 25	2.6	3	3	LC50
27.5 x 14	1.4	3	3	LC50
27.5 x 17	1.9	3	3	LC50
27.5 x 25	3.1	3	3	LC50
29.5 x 14	1.5	3	3	LC50
29.5 x 17	2.1	3	3	LC50
29.5 x 25	3.4	3	3	LC50
31.5 x 14	1.7	3	3	LC50
31.5 x 17	2.2	3	3	LC50
31.5 x 25	3.7	3	3	LC50
35.5 x 14	1.9	3	3	LC50
35.5 x 17	2.6	3	3	LC50
35.5 x 25	4.3	3	3	LC50
39.5 x 14	2.2	3	3	LC50
39.5 x 17	2.9	3	3	LC50
39.5 x 25	4.8	3	3	LC50
41.5 x 14	2.3	3	3	LC50
41.5 x 17	3.1	3	3	LC50
41.5 x 25	5.1	3	3	LC50

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.

To convert areas to square meters (m²), multiply square feet by 0.0929.



Lifestyle Series Double-Hung

Detailed Product Description

Frame

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine.
- Exterior surfaces are clad with aluminum.
- Components are assembled with screws, staples and concealed corner locks.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94mm).
- Jamb liner shall be high-impact polyvinyl chloride backed by continuous hard-tempered aluminum springs.
- Optional factory applied jamb extensions are available.
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.
- Optional factory-installed Pella Steady Set Installation System.

Sash

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine.
- Exterior surfaces are clad with aluminum, lap-jointed and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-5/8" (41 mm).
- Sashes tilt for easy cleaning.

Weatherstripping

- Foam with 3 mm skin at head and bottom rail. Thermal-plastic elastomer bulb with slip-coating set into upper sash for tight contact at check rail.
- Secondary polyvinyl chloride leaf-type weatherstrip on bottom sash at sill.
- Jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- High altitude glazing available.
- Silicone groove-glazed 11/16" [obscure] dual-seal insulating glass [[annealed] [tempered]] [[Advanced] [SunDefense™] [SunDefense+] [AdvancedComfort] [NaturalSun] [NaturalSun+] Low-E [with argon]].

Exterior

- Exterior aluminum surfaces are finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
- Color is [White] [Tan] [Putty] [Brown] [Poplar White] [Portobello] [Hartford Green] [Morning Sky Gray] [Brick Red] [Black].

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen] [Bright White] [stain₁]].

Hardware

- Galvanized block-and-tackle balances are connected to sash with a polyester cord and concealed within the frame.
- Factory installed self-aligning surface-mounted sash lock. Two sash locks on units with frame width 33-1/4" and greater.
- Optional Sash lift furnished for field installation. Two lifts on units with frame width 33-1/4" and greater.
- Finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [Satin Brass] [Satin Nickel].
- Champagne locks are standard on unfinished units; White locks are standard on factory prefinished white units.

Optional Products

Grilles

- Simulated-Divided-Light [with optional spacer]
 - 7/8" Grilles permanently bonded to the interior and exterior of glass.
 - Patterns are [Traditional] [Prairie] [Cross] [Top Row] [Custom – Equally Divided].
 - Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain₁]]. Exterior grilles to match the exterior cladding color.
 - Available only on units glazed with Low-E insulated glass with argon.
– or –
- Grilles-Between-the-Glass₂
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Top Row] [Custom – Equally Divided].
 - Interior color is [White] [Ivory] [Tan₃] [Brickstone] [Black] [Putty₃] [Brown₃] [Harvest] [Cordovan].
 - Exterior color [matched to the exterior cladding color] [White]₄.

Screens

- InView™ screens
 - Full-size Vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.
- Hidden screens₅
 - Vinyl-coated 18/18 mesh fiberglass screen cloth, set in aluminum channels hidden within the sash, supplied complete with all necessary hardware.
 - Finish color [White] [Black] [Brown] [Fossil] [Iron Ore].

Hardware

- Optional factory applied limited opening device available for vent units in steel, nominal 3-3/4" opening.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

Sensors

- Optional factory installed integrated security sensors available in vent units.

(1) Contact your local Pella sales representative for current designs and color options.

(2) Available on units glazed with Low-E insulated glass with argon, and obscure insulated glass.

(3) Tan, brown and putty Interior GBG colors are available only with matching interior and exterior colors.

(4) Appearance of exterior grille color will vary depending on Low-E coating on glass.

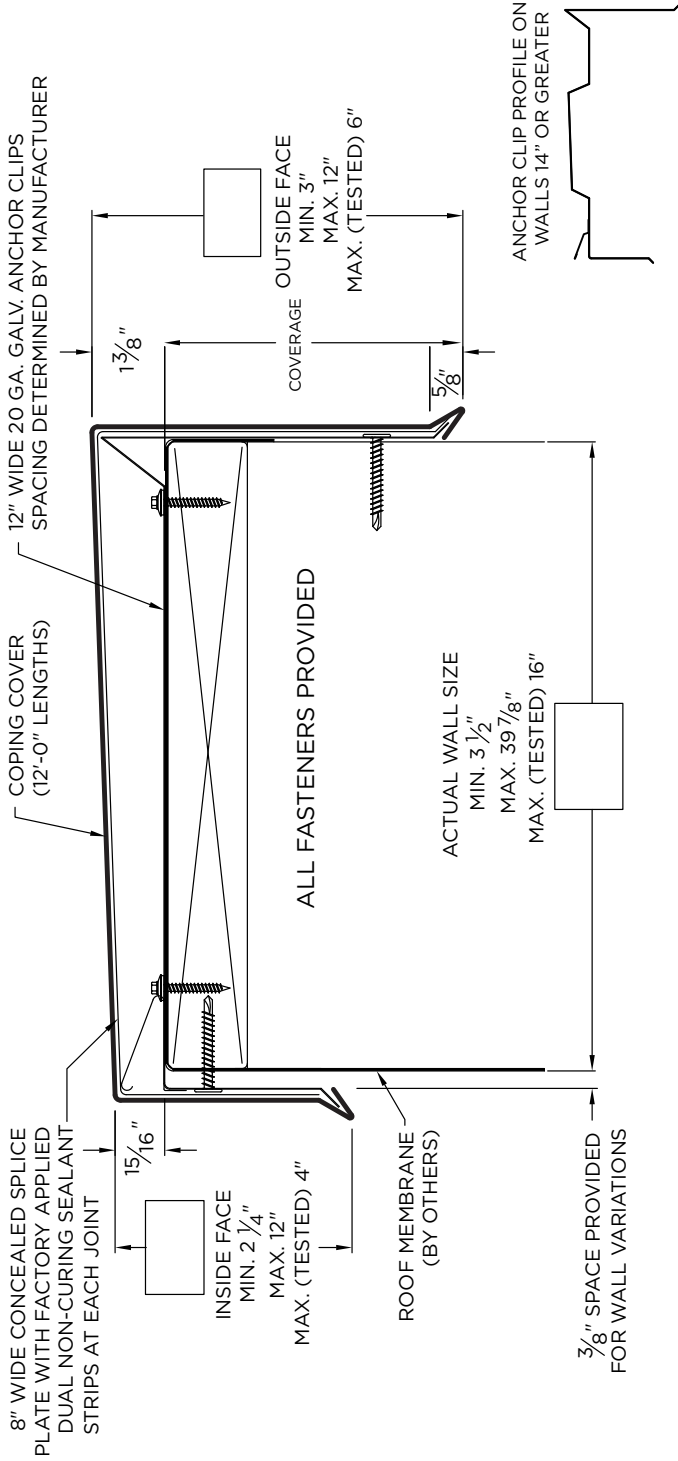
(5) Not compatible with Limited Opening Hardware.



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* NOTES

- Oil canning can occur on larger face heights and wall widths; recommend 22 Ga., .050" or .063" Aluminum for face height over 8" or wall width over 12".
- 24 Ga. and .040" Aluminum covers available for wall sizes 3.5" to 24" ONLY
- Unless otherwise noted, fabrication of miters and accessories are furnished standard utilizing a non-penetrating quicklock joint, then factory sealed watertight
- Welded accessories require a minimum material thickness of .050" Aluminum
- For non-90 miters, see separate print approval
- Product should be installed per provided installation instructions
- ANSI/SPRI/FM 4435/ES-1 test pressures up to 226 psf (Horizontal) and 391 psf (Vertical)



PROJECT INFO

Project Name:

Architect:

Roofing Contractor:

Project Type:

☐

By selecting this box you have verified and confirmed that dimensions, sizes, and quantities are correct. All products will be installed in strict accordance with printed instructions.

SHT# 1 of 2
DATE: 05/31/23
DRN BY: JJC
CKD BY: MM
DWG #: 1101-19115
REV: J

Date:

Metal-Era LLC
1600 Airport Rd.
Waukesha, WI 53188
Phone: 800-558-2162
www.metalera.com

APPROVALS*

ANSI/SPRI/FM 4435/ES-1
Test Pressures listed in notes



MIAMI-DADE COUNTY
APPROVED

MATERIAL*

- Color: _____
Finish: _____
Substrate: (For Top Fasteners)
☐ 24 Ga. Galv. Steel
☐ 22 Ga. Galv. Steel
☐ .040" Aluminum
☐ .050" Aluminum
☐ .063" Aluminum
☐ OTHER: _____
☐ Wood
☐ Masonry
☐ Metal

QUANTITIES

- Accessory Type* : ☐ Quicklock (Default) ☐ Welded (Surcharge)
- _____ Lineal Feet (12'-0" Lengths)
_____ Outside Miter (90°)
_____ Inside Miter (90°)
_____ Right Endcaps
_____ Left Endcaps
- _____ Right Endwall Flashing (Coping Version)
_____ Left Endwall Flashing (Coping Version)
_____ Right Endwall Flashing (Splice Plate Version)
_____ Left Endwall Flashing (Splice Plate Version)



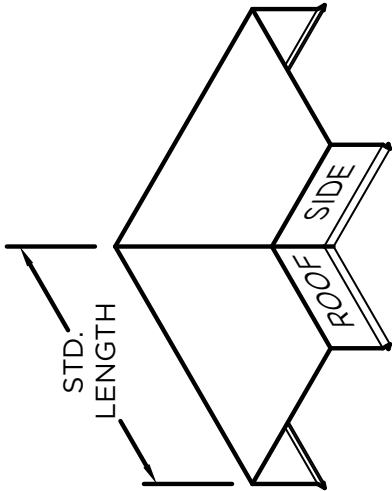
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STANDARD ACCESSORIES

NOTES

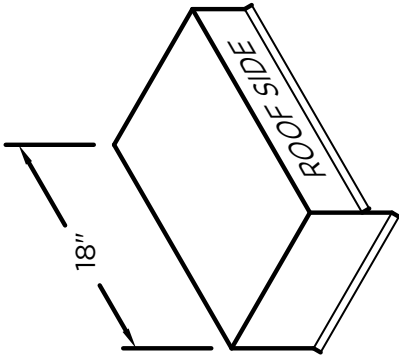
Additional accessories are available including:

- Transition Miters
- Straight Transition Miters
- "T" Miters
- "Z" Miters
- Step-up Miters
- Peak / Valley Miters
- Plaster Caps
- Radius Coping
- Arched Coping

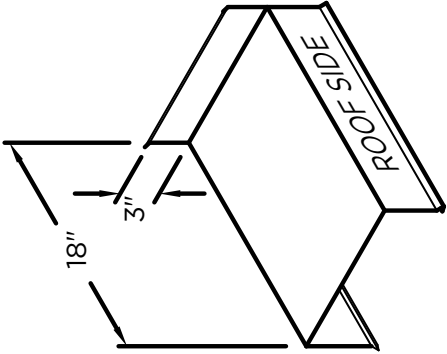
For additional accessory requirements, attach sketches or call manufacturer for assistance.



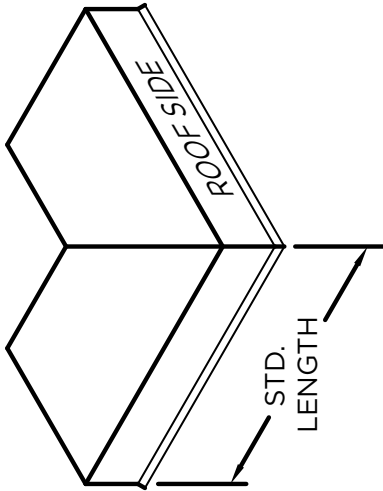
OUTSIDE MITER



ENDCAP
(LEFT HAND SHOWN)

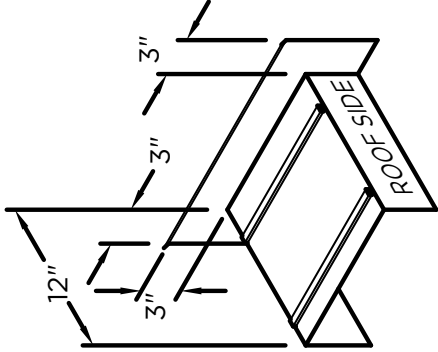


ENDWALL FLASHING
COPING VERSION
(RIGHT HAND SHOWN)



INSIDE MITER

MITER STANDARD LEG LENGTH:
WALL SIZE + 9 5/8" = LENGTH



ENDWALL FLASHING
SPLICE PLATE VERSION
(RIGHT HAND SHOWN)
(AVAILABLE ONLY IN
.040" WELDED, PAINTED
TO MATCH COPING)

Metal-Era LLC
1600 Airport Rd.
Waukesha, WI 53188
Phone: 800-558-2162
www.metalera.com

SHT# **2** of **2**
DATE: **05/31/23**
DRN BY: **JJC**
CKD BY: **MM**
DWG #: 1101-19115
REV: **J**

SECTION 09250 - GYSPUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior gypsum board.
 - 2. Reglets.
- B. Related Sections include the following:
 - 1. Division 9 Painting Sections for primers applied to gypsum board surfaces.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. Mockups: Before beginning gypsum board installation, install mockups of at least 4 feet in length to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Dropped lighting soffits
 - 2. Simulate finished lighting conditions for review of mockups.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.
- B. Type X:
 - 1. Thickness: 1/2" or 5/8 inch – match existing
 - 2. Long Edges: Tapered
 - 3. Special fire-Type X gypsum board has fire-resistive capability greater than that of standard Type X. For rated assemblies, panels from different manufacturers cannot be intermixed because ratings apply only to assemblies identical in materials and construction to those

tested. Design designations of independent testing agencies indicated on Drawings generally determine product requirements for special Type X gypsum board.

2.3 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A108.1.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. USG Corporation; DUROCK Cement Board.
3. Thickness: 1/2 inch

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Gypsum Wall Board accessories: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet
2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.

B. Exposed Aluminum Trim: Exposed, extruded accessories of profiles and dimensions indicated.

1. Basis of Design Products:
 - a. Manufacturer: Fry Reglet Corp.
 - b. Product: "F" Reveal Molding DRMF 50-50 – 1/2", 1/2".
 - c. Color: Black.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound

D. Joint Compound for Exterior Applications:

E. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 1. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."
- F. Thermal Insulation: As specified in Division 7 Section "Building Insulation."
- G. Vapor Retarder: As specified in Division 7 Section "Building Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: In all locations except where noted.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.

2. On partitions/walls, apply gypsum panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1, at all locations scheduled to receive tile, including floors
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners
 2. Bullnose Bead: Use where indicated
 3. LC-Bead: Use at exposed panel edges where indicated or as directed by architect
 4. L-Bead: Use where indicated
 5. U-Bead: Use at exposed panels edges and where indicated or directed by Architect.
- D. Aluminum Trim: Install in locations as indicated on Drawings.

3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, beveled edges, and damaged surface areas.

- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 3:
 - 3. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated
 - a. Primer and its application to surfaces are specified in other Division 9 Sections.
 - b. Level 5 is suitable for surfaces receiving gloss and semigloss enamels and surfaces subject to severe lighting. It is considered a high-quality gypsum board finish.
- E Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.7 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09250



EXTERIOR ELASTOMERIC MASONRY, STUCCO & BRICK PAINT

NO. 68 WHITE



PRODUCT INFORMATION

BEHR PREMIUM® Elastomeric Masonry, Stucco & Brick Paint is a flexible, high-build coating designed to expand and contract, bridging hairline cracks in exterior, vertical masonry surfaces. This waterproofing paint is extremely durable and is mildew and dirt resistant. It has superior elasticity and elongation properties, stretching up to 600%. This 100% acrylic latex formula provides a breathable film, releasing moisture vapor that builds in walls. This low-sheen paint has excellent color retention and is available in 55 custom tinted colors.

RECOMMENDED USES:

This product is ideal for use on properly prepared and primed vertical surfaces such as:

- Concrete
- Concrete Block/CMU
- Cement Board Siding
- Brick
- Stucco

PRODUCT SPECIFICATIONS:

Tint Bases/Max Tint Load:

No. 68 124 oz. / 6 oz.
No. 67 116 oz. / 14 oz.

Gloss: <10 @ 60°

Sheen: 0-6 @ 85°

Resin Type: 100% Acrylic

Weight per Gallon: 10.9 lbs.

% Solids by Volume: 48.0%

% Solids by Weight: 60.4%

VOC: <50 g/L

Flash Point: N/A

Viscosity: 120-135 KU

Recommended Film Thickness:

Wet: 21.3 mils / Dry: 10.2 mils @ 75 Sq. Ft./Gal.
Wet: 12.8 mils / Dry: 6.1 mils @ 125 Sq. Ft./Gal.

Coverage: 75-125 Sq. Ft./Gal. depending on application method and substrate porosity. Does not include the loss of material from spraying.

APPLICATION:

Brush: Nylon/polyester

Roller: 3/4"-1 1/4" Nap

Airless Spray: At packaged consistency

Tip: .025"-.029"

Filter: 60 mesh

Thinning: Do Not Thin

Dry Time: @ 77° & 50% RH

Longer dry time may be required in cooler temperatures and higher humidity.

To Touch: 4-6 hours

To Recoat: 24 hours

Full Cure: 2 weeks

SURFACE PREPARATION:

All surfaces must be clean, free of dust, chalk, oil, grease, wax, polish, mold and mildew stains, loose and peeling paint, rust, and all other foreign substances.

Stainblocking: After priming, test for stain bleedthrough by applying the topcoat to a small section. If the stain bleeds through the topcoat, apply a second coat of primer and test again before top-coating the entire area. If bleeding continues, a longer dry time of the primer may be needed before top-coating.

Masonry: All masonry surfaces must be cured at least 30 days before painting. The pH must be 10.0 or lower prior to coating. Smooth masonry may require an adequate profile for adhesion. For all other smooth concrete, create a profile using a product such as a muriatic acid etcher to achieve a textured profile. Use a cleaner to remove loose aggregate and debris.

Non-Ferrous Metal: The oil film on new non-ferrous metal must be removed before it is painted. Remove oil film with a detergent and water solution. For better paint adhesion, sand the surface with sandpaper, steel wool, or by using a product such as a muriatic acid etcher to achieve a textured profile.

New Surfaces: Wipe down clean metal surfaces prior to painting with a vinegar solution, one part vinegar to five parts water (1:5). Bare metal must be primed the same day it is cleaned. Metal: Remove all rust and mill scale using sandpaper, steel wool, abrasive blasting, or other abrading methods to create a profile on the metal's surface. Clean the metal by scrubbing the surface with a detergent and water solution, followed by a thorough rinsing with clean water. Bare metal must be coated the same day it is cleaned.

WARNING! If you scrape, sand or remove old paint, you may release lead dust. **LEAD IS TOXIC.** Contact the National Lead Information Center at 1-800-424-LEAD or visit www.epa.gov/lead.

COMPLIES WITH THE BELOW AS OF 9/1/2015

SCAQMD	YES	LADCO	YES
CARB	YES	AIM	YES
OTC	YES	LEED v.3 (2009) [†]	YES

RECOMMENDED PRIMER/SYSTEMS:

PROPERLY PREPARED NEW SURFACES:

Masonry:

- BEHR PREMIUM PLUS® Exterior Water-Based Primer & Sealer No. 436

Masonry with pH Levels up to 13.0:

- BEHR PREMIUM PLUS Exterior Water-Based Primer & Sealer No. 436
- KILZ KLEAR® Interior/Exterior Water-Based Primer

New Surfaces:

- All surfaces must be clean, free of dust, chalk, oil, grease, wax, polish, mold and mildew stains, loose and peeling paint, rust and all other foreign substances.

PREVIOUSLY PAINTED SURFACES:

- Use a full coat or spot prime with BEHR PREMIUM PLUS® Exterior Water-Based Primer & Sealer No. 436 on properly prepared surfaces.

TEST SPECIFICATIONS:

Scrubability:

ASTM D2486, Scrub > 500

Accelerated Weathering:

ASTM D4587, 1000 hrs. exposure - Pass

Resistance Wind Driven Rain:

ASTM D6904/TT-C-555B - Pass

Flexibility:

ASTM D522, method B - Pass

Biological Growth:

ASTM D3273 (4 weeks) - Pass

Tensile Strength, Elongation and Recovery:

ASTM D2370, Elongation > 600%
ASTM D2370, Tensile Strength > 200 psi

Low Temperature Flexibility:

ASTM D1737 - Pass





EXTERIOR ELASTOMERIC MASONRY, STUCCO & BRICK PAINT

NO. 68 WHITE

Resistance Wind Driven Rain:

ASTM D6904/TT-C-555B - Pass

ASTM D6904/TT-C-555B - Pass:

Apply 2 coats at min. 6.1 mils DFT for a min.

12.2 mils total system DFT.

CLEAN UP:

Clean all tools and equipment with clean water. For disposal of empty containers and unused product, contact your household refuse collection service.

CAUTIONS/LIMITATIONS:

- Protect from freezing.
- Do not use on garage floors and driveways.
- For best results, apply at temperatures between 50°F - 90°F. Temperatures above 90°F may affect the application such as drying too fast. Avoid painting in direct sun. NOTE: If the surface is hot to the touch it should be considered too hot to apply this coating.
- Avoid heavy traffic for 24 hours.
- Allow four weeks before washing or cleaning for full cure.
- Shelf life under normal conditions is two years unopened.

GENERAL INFORMATION:



Warning! Causes eye and skin irritation. Harmful if swallowed. Wear protective clothing, gloves, eye, and face protection. Do not eat, drink, or smoke when using this product. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Collect spillage and avoid release to the environment. Dispose of unused, contents, container and other contaminated wastes in accordance with local, state, federal and provincial regulations.

First aid: If in eyes: Rinse cautiously with water for several minutes and remove contacts if present and easy to do. Continue rinsing and get medical attention if eye irritation persists. **If on skin:** Wash with plenty of soap and water.

If swallowed: Rinse mouth and get medical attention if you feel unwell.

