SECTION 08560

VINYL WINDOWS AND PATIO DOORS, ALUMINUM CLAD VINYL WINDOWS AND PATIO DOORS

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\*\* NOTE TO SPECIFIER \*\* Ply Gem Canada; windows, doors, patio doors, and siding.
This section is based on the products of Ply Gem Canada, which is located at:

7140 40 St. S.E.
Calgary, AB, Canada T2C 2B6
Toll Free Tel: (800) 297-6102
Email: canada@plygem.com
Web: https://www.plygem.ca
 [ [Click Here](https://www.arcat.com/arcatcos/cos50/arc50344.html) ] for additional information.

For more than 75 years, Ply Gem has led the industry with an unmatched portfolio of Canadian made windows, patio doors and entry doors. Ply Gem's best-in-class service helps builders, renovators, architects and designers complete their projects faster and easier by offering the most complete solution of exterior building products that work flawlessly together.

Ply Gem is part of the Cornerstone Building Brands family, the largest manufacturer of exterior building products in North America with 23 manufacturing plants including state of the art facilities in Calgary, Alberta and Brantford, St. Thomas & Woodbridge, Ontario.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Vinyl windows.
		2. Aluminum clad vinyl windows.
		3. Vinyl patio doors.
		4. Aluminum clad patio doors.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06100 - Rough carpentry: Rough opening and framing for windows.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. AAMA/WDMA/CSA 101/I.S.2/A440 - NAFS - North American Fenestration Standard/Specification for windows, doors and skylights.
		2. CSA A440S1 - Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440 - NAFS.
		3. U.S. Department of Energy - Energy Star Windows Program.
		4. National Resources Canada - Energy Star Windows Program.
		5. National Fenestration Rating Council (NFRC) 100 - Procedure for Determining Fenestration Product U-factors.
		6. National Fenestration Rating Council (NFRC) 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
		7. National Fenestration Rating Council (NFRC) 700 - Product Certification Program.
	1. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Provide drawing elevations of each opening with details of rough openings, anchorage and installation.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colours have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of colour chips representing manufacturer's full range of available colours and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, colour, and patterns.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
		2. Installer Qualifications: Minimum 2 year experience installing similar products.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	1. PRE-INSTALLATION MEETINGS
		1. Convene minimum two weeks prior to starting work of this section.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
		2. Handling: Handle materials to avoid damage.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. SEQUENCING
		1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	5. WARRANTY
		1. Manufacturer warrants the following for its window products:
			1. Unless otherwise specifically noted, skilled labor to repair or replace any affected component shall be provided for two years from the date of delivery.
			2. IGU failure (evidenced by moisture within the IGU caused by failure of the hermetic seal), manufacturer shall supply a replacement unit (or complete sash, including IGU, at manufacturer's discretion) for the failed unit free of charge for as long as the ownership of the home by the purchaser.
			3. Vinyl Window Extrusions: Peeling, cracking, flaking or blistering under normal use, application and proper care are warranted for twenty years from the date of delivery.
			4. Factory Painted Vinyl and Aluminum Extrusions: Peeling, cracking, flaking or blistering under normal use, application and proper care are warranted for ten years from the date of delivery.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Ply Gem Canada 7140 40 St. S.E. Calgary, AB, Canada T2C 2B6;
		 Toll Free Tel: (800) 297-6102; Email: canada@plygem.com; Web: https://www.plygem.ca

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

\*\* NOTE TO SPECIFIER \*\* More value. More performance. More solutions. Known for energy efficiency, durability and low maintenance, vinyl windows are the most commonly used window type in North America today. MITTEN Building Products offers a wide variety of vinyl window style and shapes. There are 4 series of vinyl windows to suit your needs. Varying from double- to triple-glazing and interior or exterior glazed. These series are: Vista, Comfort, Classic and Enviro. Delete window type not required.

* 1. PERFORMANCE REQUIREMENTS
		1. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
		2. Performance Class and Grade: Rated per AAMA/WDMA/CSA 101/I.S.2/A440.
			1. In Canada, Performance Grades for windows, doors and skylights shall be selected according to the Canadian Supplement A440S1 so as to be appropriate for the conditions and geographic location in which the window, door or skylight will be installed.
		3. Thermal Transmittance: Tested and certified per NFRC 100 maximum total fenestration product U-factor.
		4. Solar Heat-Gain Coefficient (SHGC): Tested and certified per NFRC 200 maximum total fenestration product SHGC.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. DOUBLE GLAZED VINYL WINDOWS

\*\* NOTE TO SPECIFIER \*\* Delete product not required.

* + 1. Product: Vista as manufactured by Ply Gem Canada.

\*\* NOTE TO SPECIFIER \*\* Delete style not required.

* + - 1. Style: Fixed casement.
			2. Style: Slider.
			3. Style: Casement.
			4. Style: Single hung.
			5. Style: Picture/Direct Set.
			6. Style: Awning.
			7. Style: Basement Slider.

\*\* NOTE TO SPECIFIER \*\* Delete product not required.

* + 1. Product: Classic as manufactured by Ply Gem Canada.

\*\* NOTE TO SPECIFIER \*\* Delete style not required.

* + - 1. Style: Fixed casement.
			2. Style: Slider.
			3. Style: Casement.
			4. Style: Single hung.
			5. Style: Picture.
			6. Style: Awning.
		1. Sizes: Refer to Drawings.
		2. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete frame finish not required.

* + - 1. Frame Color: White.
			2. Applied Exterior Frame Color: None. Frame color.
			3. Applied Exterior Frame Color: Fusion Color Wrap Black.
			4. Applied Exterior Frame Color: Fusion Color Quartz Grey.
			5. Applied Exterior Frame Color: Fusion Color Saddle Brown.
			6. Applied Interior Frame Color: None. Frame color.
			7. Applied Interior Frame Color: Fusion Color Wrap Black.
			8. Applied Interior Frame Color: Fusion Color Wrap Quartz Grey.
			9. Applied Interior Frame Color: Fusion Color Wrap Saddle Brown.
			10. Applied Interior Frame Color: Fusion Color Wrap Paintable, Stainable Woodgrain.

\*\* NOTE TO SPECIFIER \*\* Delete hardware colour not required.

* + - 1. Hardware Color: White.

\*\* NOTE TO SPECIFIER \*\* Delete grille if not required.

* + 1. Grille:

\*\* NOTE TO SPECIFIER \*\* Delete grille design not required.

* + - 1. Design: SDL.
			2. Design: SML.

\*\* NOTE TO SPECIFIER \*\* Delete pattern options not required.

* + - 1. Pattern: 1 inch (25 mm) Flat.
			2. Pattern: 13/16 inch (21 mm) Flat.
			3. Pattern: 5/8 inch (16 mm) Flat.
			4. Pattern: 5/16 inch (8 mm) Flat.
			5. Pattern: 1 inch (25 mm) Contour.
			6. Pattern: 3/4 inch (19 mm) Contour.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. TRIPLE GLAZED VINYL WINDOWS - COMFORT SERIES
		1. Product: Comfort as manufactured by Ply Gem Canada.

\*\* NOTE TO SPECIFIER \*\* Delete styles not required.

* + - 1. Style: Fixed casement.
			2. Style: Slider.
			3. Style: Casement.
			4. Style: Single hung.
			5. Style: Picture.
			6. Style: Awning.

\*\* NOTE TO SPECIFIER \*\* Delete frame colors not required.

* + - 1. Finish: Frame Color: White.
			2. Finish: Applied Exterior Frame Color: None (Frame Color).
			3. Finish: Applied Exterior Frame Color: Fusion Color Wrap Black.
			4. Finish: Applied Exterior Frame Color: Fusion Color Quartz Grey.
			5. Finish: Applied Exterior Frame Color: Fusion Color Saddle Brown.
			6. Finish: Applied Interior Frame Color: None (Frame Color).
			7. Finish: Applied Interior Frame Color: Fusion Color Wrap Black.
			8. Finish: Applied Interior Frame Color: Fusion Color Wrap Quartz Grey.
			9. Finish: Applied Interior Frame Color: Fusion Color Wrap Saddle Brown.
			10. Finish: Applied Interior Frame Color: Fusion Color Wrap Paintable, Stainable Woodgrain.

\*\* NOTE TO SPECIFIER \*\* Delete hardware colors not required.

* + - 1. Hardware Color: White.
			2. Hardware Color: Beige.
			3. Hardware Color: Brushed Nickel.
			4. Hardware Color: Black.
			5. Hardware Color: Oil Rubbed Bronze.
			6. Hardware Color: Brushed Chrome.
		1. Sizes: Refer to Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete grille if not required or delete grille design not required.

* + 1. Grille:
			1. Design: SDL.
			2. Design: SML.

\*\* NOTE TO SPECIFIER \*\* Delete patterns not required.

* + - 1. Pattern: 1 inch (25 mm) Flat.
			2. Pattern: 13/16 inch (21 mm) Flat.
			3. Pattern: 5/8 inch (16 mm) Flat.
			4. Pattern: 5/16 inch (8 mm) Flat.
			5. Pattern: 1 inch (25 mm) Contour.
			6. Pattern: 3/4 inch (19 mm) Contour.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. TRIPLE GLAZED VINYL WINDOWS - ENVIRO SERIES
		1. Product: Enviro as manufactured by Ply Gem Canada.

\*\* NOTE TO SPECIFIER \*\* Delete styles not required.

* + - 1. Style: Fixed casement.
			2. Style: Slider.
			3. Style: Casement.
			4. Style: Single hung.
			5. Style: Picture.
			6. Style: Awning.

\*\* NOTE TO SPECIFIER \*\* Delete frame colors not required.

* + - 1. Finish: Applied Exterior Frame Color: White.
			2. Finish: Applied Exterior Frame Color: Beige.
			3. Finish: Applied Interior Frame Color: White.
			4. Finish: Applied Interior Frame Color: Beige.

\*\* NOTE TO SPECIFIER \*\* Delete hardware colors not required.

* + - 1. Hardware Color: White.
			2. Hardware Color: Beige.
			3. Hardware Color: Brushed Nickel.
			4. Hardware Color: Black.
			5. Hardware Color: Oil Rubbed Bronze.
			6. Hardware Color: Brushed Chrome.
		1. Sizes: Refer to Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete grille if not required or delete grille design not required.

* + 1. Grille:
			1. Design: SDL.
			2. Design: SML.

\*\* NOTE TO SPECIFIER \*\* Delete patterns not required.

* + - 1. Pattern: 1 inch (25 mm) Flat.
			2. Pattern: 13/16 inch (21 mm) Flat.
			3. Pattern: 5/8 inch (16 mm) Flat.
			4. Pattern: 5/16 inch (8 mm) Flat.
			5. Pattern: 1 inch (25 mm) Contour.
			6. Pattern: 3/4 inch (19 mm) Contour.

\*\* NOTE TO SPECIFIER \*\* Make a bold statement. Aluminum-clad vinyl windows offer the best of both worlds: durable, colourful exteriors and maintenance-free vinyl interiors. With the Design series in both double- and triple-glazing and with the interior matching the Classic series vinyl window, you can mix and match these windows on different elevations for a design upgrade. Delete article if not required.

* 1. ALUMINUM CLAD VINYL WINDOWS AND PATIO DOORS

\*\* NOTE TO SPECIFIER \*\* Delete product option not required.

* + 1. Product: Design as manufactured by Ply Gem Canada.
			1. Exterior Clad:
				1. Sizes: Refer to Drawings.
		2. Product: Design Architectural as manufactured by Ply Gem Canada.
			1. Exterior and Interior Clad:
				1. Sizes: Refer to Drawings.
		3. Style:

\*\* NOTE TO SPECIFIER \*\* Delete style not required.

* + - 1. Fixed casement.
			2. Slider.
			3. Casement.
			4. Single hung.
			5. Picture/Direct Set.
			6. Awning.

\*\* NOTE TO SPECIFIER \*\* ECP is added to darker colors on Ply Gem metal clad windows and doors to resist fading and chalking. This premium paint utilizes acroflur™, a Kynar® based coating which offers significantly better resistance to fading and chalking compared to Acrylic/Polyester paints common in the window industry.

* + 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete interior frame finish option if not required.

* + - 1. Applied interior frame color: Black AAMA 2604 high performance organic coating.

\*\* NOTE TO SPECIFIER \*\* Delete exterior frame color not required.

* + - 1. Exterior Frame Color: White AAMA 2603 organic coating.
			2. Exterior Frame Color: Beige AAMA 2603 organic coating.
			3. Exterior Frame Color: Cashmere AAMA 2603 organic coating.
			4. Exterior Frame Color: Sable AAMA 2603 organic coating.
			5. Exterior Frame Color: Slate Grey AAMA 2603 organic coating.
			6. Exterior Frame Color: Clear Anodized Class II, 10&#181; film thickness.
			7. Exterior Frame Color: Brown AAMA 2604 high performance organic coating.
			8. Exterior Frame Color: Black AAMA 2604 high performance organic coating.

\*\* NOTE TO SPECIFIER \*\* Delete hardware color not required.

* + - 1. Hardware Color: White.
			2. Hardware Color: Beige.
			3. Hardware Color: Brushed Nickel.
			4. Hardware Color: Black.
			5. Hardware Color: Oil Rubbed Bronze.
			6. Hardware Color: Brushed Chrome.

\*\* NOTE TO SPECIFIER \*\* Delete grille if not required.

* + 1. Grille:

\*\* NOTE TO SPECIFIER \*\* Delete grille design not required.

* + - 1. Design: SDL.
			2. Design: SML.

\*\* NOTE TO SPECIFIER \*\* Delete pattern not required.

* + - 1. Pattern: 1 inch (25 mm) Flat.
			2. Pattern: 13/16 inch (21 mm) Flat.
			3. Pattern: 5/8 inch (16 mm) Flat.
			4. Pattern: 5/16 inch (8 mm) Flat.
			5. Pattern: 1 inch (25 mm) Contour.
			6. Pattern: 3/4 inch (19 mm) Contour.
	1. GLAZING

\*\* NOTE TO SPECIFIER \*\* Refer to manufacturer's literature for performance of glass required.

* + 1. IGU Performance:

\*\* NOTE TO SPECIFIER \*\* Energy Star 2020 or BCBC/NBC Section 9.36 Zone compliant glass performance.

* + - 1. ENERGY STAR Canada (2020): One Zone.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Energy Efficiency Requirement - BCBC Section 9.36 Zone: \_\_\_\_\_.
			2. Energy Efficiency Requirement - NBC Section 9.36 Zone: \_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Part 9 Section 9.36 prescriptive Zone compliant glass performance, BCBC (U value only) or NBC (U value or energy rating). Delete one or both if not required.

* + - 1. Glass Thickness: \_\_\_\_\_.
			2. OD: \_\_\_\_\_.
			3. Grills: \_\_\_\_\_.
			4. U-Value Imperial: \_\_\_\_\_.
			5. U-Value Metric: \_\_\_\_\_.
			6. Energy Rating: \_\_\_\_\_.
			7. SHGC: \_\_\_\_\_.
			8. VT: \_\_\_\_\_.
			9. CR: \_\_\_\_\_.
		1. IGU Unit Construction - Primary LowE:

\*\* NOTE TO SPECIFIER \*\* Provides the highest levels of year-round comfort and energy savings, making it the perfect glass no matter where you live. It sports an unprecedented three layers of silver which reduce solar gain, reflect furnace heat back into the room and let light stream in. Delete if not required.

* + - 1. Eco Max Shield 366.

\*\* NOTE TO SPECIFIER \*\* Eco Shield 270 reduces solar heat gain coefficient by 50% or more compared to ordinary glass in the summer and keeps homes cozy by blocking heat loss in the winter. It blocks 86% of the sun's UV rays yet lets light stream in due to its exceptional clarity without a heavy bronze or smoke-coloured tint. Delete if not required.

* + - 1. Eco Shield 270.

\*\* NOTE TO SPECIFIER \*\* Eco Gain 180 provides excellent insulating capability by blocking heat loss to the outside and reflecting heat back into the room. It is the ideal glass for passive solar applications as it allows the winter sun's heat to pass into the home and provide "free heat." It also blocks 76% of the sun's harmful UV rays. Delete if not required.

* + - 1. Eco Gain 180.

\*\*NOTE TO SPECIFYER\*\* A secondary LowE coating can provide an improvement in the overall unit U value that is better than an additional Pane of Clear glass.

* + 1. Secondary LowE:
			1. Double Glazed:
				1. i89 (Surface No. 4)
			2. Triple Glazed:
				1. Eco Gain 180.
				2. Same as Primary LowE

\*\*NOTE TO SPECIFIER\*\* i89 Secondary LowE provides maximum energy efficiency in a double-pane unit. In a triple-pane unit, Eco Gain 180 provides higher SHGC and VT values than Same as Primary when the primary is Eco Max. Shield 366 or Eco Shield 270, often without compromising the overall unit U value.

1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction.
	4. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION