SECTION 08 53 13
uPVC WINDOWS

(Vistaza Vi5 Series / Vi6 Series)
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*** NOTE TO SPECIFIER ** Vistaza Inc.; uPVC (rigid polyvinyl chloride) windows, terrace doors and sliding doors.*

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This section is based on the products of Vistaza Inc., which is located at:
6007 16th Avenue
Brooklyn, NY 11204
Email: architect@vistaza.com
Web: architect.vistaza.com

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Vistaza manufactures European-style uPVC in-swing casement, hopper and fixed windows, terrace doors and sliding doors for multifamily and commercial projects. Registered architects can browse the full glass library, build a performance submittal for their project, and see budgetary pricing at architect.vistaza.com.

PART 1 — GENERAL

1.1 SECTION INCLUDES

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

A. Fixed windows (Vi5 Series, Vi6 Series).

B. In-swing casement windows (Vi5 Series, Vi6 Series).

C. Hopper windows (Vi6 Series).

D. In-swing terrace doors (Vi5 Series, Vi6 Series); out-swing terrace doors (Vi6 Series).

E. Sliding doors, OX/XO configuration (Vi5 Series).

F. Factory glazing, hardware, insect screens, anchors, receptors, trims, panning and accessories for the above.

1.2 RELATED SECTIONS

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

A. Section 04 20 00 - Unit Masonry: Openings in masonry.

B. Section 06 10 00 - Rough Carpentry: Framed openings.

C. Section 07 21 00 - Thermal Insulation: Insulation at window perimeter.

D. Section 07 62 00 - Sheet Metal Flashing and Trim: Flashing associated with windows and doors.

E. Section 07 84 13 - Penetration Firestopping.

F. Section 07 92 00 - Joint Sealants: Perimeter joint sealant and backer rod.

G. Section 08 80 00 - Glazing.

1.3 REFERENCES

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

A. AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) - North American Fenestration Standard/Specification for windows, doors, and skylights.

B. AAMA 303 - Voluntary Specification for Rigid Polyvinyl Chloride (PVC) Exterior Profiles.

C. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products.

D. AAMA 513 - Voluntary Specification for Operating Force and Motion of Fenestration Products.

E. AAMA 701/702 - Voluntary Specification for Pile Weatherstrip and Replaceable Fenestration Weatherseals.

F. AAMA 910 - Voluntary "Life Cycle" Specifications and Test Methods for AW Class Architectural Windows and Doors.

G. AAMA 1302 - Voluntary Specification for Forced-Entry Resistance.

H. ASTM E283 - Rate of Air Leakage (laboratory); ASTM E783 - Air Leakage of Installed Windows (field).

I. ASTM E330 - Structural Performance by Uniform Static Air Pressure Difference.

J. ASTM E331 / E547 - Water Penetration (laboratory); ASTM E1105 - Water Penetration of Installed Windows (field).

K. ASTM E90 / E1332 / E413 - Laboratory sound transmission loss; OITC and STC classification.

L. ASTM E1886 / E1996 - Windborne-debris impact (where required).

M. ASTM E2068 - Operating force; ASTM D4216 - Rigid PVC building product compounds.

N. NFRC 100 - U-factor; NFRC 200 - SHGC and VT; NFRC 400 - Air leakage; NFRC 500 - Condensation resistance.

O. ASCE 7 - Minimum Design Loads; ANSI Z97.1 - Safety glazing; GANA Glazing Manual.

1.4 SYSTEM DESCRIPTION AND PERFORMANCE REQUIREMENTS

*** NOTE TO SPECIFIER ** Table 1 lists Vistaza's certified NAFS ratings per product type, tested by Intertek Building & Construction (Architectural Testing). Specify project requirements at or below these tested ratings. Delete rows for product types not on the project.*

A. Structural, air and water performance: units shall be tested in accordance with NAFS by an accredited independent laboratory and shall achieve not less than the following (Table 1 — manufacturer's certified ratings):

Series	Product Type	NAFS Class	Design Pressure	Water Test Pressure	Air Infiltration @ 1.57 psf
Vi5	Fixed	AW-PG70	±70.18 psf (±3,360 Pa)	12.11 psf (580 Pa)	<0.01 cfm/ft²
Vi5	In-Swing Casement	CW-PG50	±50.13 psf (±2,400 Pa)	7.52 psf (360 Pa)	<0.01 cfm/ft²
Vi5	Terrace Door (In-Swing)	CW-PG45	±45.11 psf (±2,160 Pa)	9.82 psf (470 Pa)	0.03 cfm/ft²
Vi5	Sliding Door (OX)	CW-PG50	±50.13 psf (±2,400 Pa)	7.52 psf (360 Pa)	0.07 cfm/ft²
Vi6	Fixed	AW-PG75	±75.19 psf (±3,600 Pa)	15.04 psf (720 Pa)	<0.01 cfm/ft²
Vi6	In-Swing Casement	AW-PG100	±100.25 psf (±4,800 Pa)	15.04 psf (720 Pa)	0.06 cfm/ft²
Vi6	Hopper	CW-PG65	±65.16 psf (±3,120 Pa)	12.11 psf (580 Pa)	<0.01 cfm/ft²
Vi6	Terrace Door (In-Swing)	CW-PG65	±65.16 psf (±3,120 Pa)	12.11 psf (580 Pa)	0.04 cfm/ft²
Vi6	Terrace Door (Out-Swing)	CW-PG30	±30 psf class	4.59 psf (220 Pa)	0.04 cfm/ft²

NAFS maximum allowable air leakage is 0.30 cfm/ft² (CW class) / 0.20 cfm/ft² (AW class); values above are the measured results.

*** NOTE TO SPECIFIER ** Table 2 lists best available whole-window values across the certified NFRC simulation matrices and acoustic test reports. Actual values depend on the glazing selected — the per-glass values for any makeup can be generated at architect.vistaza.com. Specify the project's required values below the table.*

B. Thermal and acoustic capability (Table 2 — manufacturer's certified simulation and test range):

Series	Product Type	Best available U-factor (Btu/hr·ft²·°F)	STC up to	OITC up to
Vi5	Fixed	0.18	38	30
Vi5	In-Swing Casement	0.20	39	33
Vi5	Terrace Door	0.19	36	31
Vi5	Sliding Door	0.19	37	32
Vi6	Fixed	0.17	46	40
Vi6	In-Swing Casement	0.17	47	40
Vi6	Hopper	0.18	46	38
Vi6	Terrace Door (In)	0.16	44	39
Vi6	Terrace Door (Out)	0.17	—	—

C. Project performance requirements:

*** NOTE TO SPECIFIER ** Specify performance grade per opening or per type; see Table 1.*

1. Performance Class and Grade (NAFS): _____

*** NOTE TO SPECIFIER ** Specify whole-window U-factor; see Table 2 and the glazing schedule.*

2. U-Factor (NFRC 100): _____

*** NOTE TO SPECIFIER ** Specify SHGC.*

3. Solar Heat Gain Coefficient (NFRC 200): _____

*** NOTE TO SPECIFIER ** Specify VT if required.*

4. Visible Transmittance (NFRC 200): _____

*** NOTE TO SPECIFIER ** Specify STC/OITC where an acoustic report or code requires; see Table 2.*

5. Sound Transmission Class (ASTM E90/E413): _____ · Outdoor-Indoor Transmission Class (ASTM E1332): _____

D. Structural requirements: capable of withstanding design wind loads determined per ASCE 7 and the applicable building code from the basic wind speed, exposure and mean roof height indicated on the Drawings.

1. Deflection: limit lateral deflection of glass framing to L/175 of glass-edge length or ¾ inch, whichever is less, at design pressure; no permanent deformation impairing operation.

E. Condensation resistance: CR per NFRC 500 as scheduled; simulated CR values up to 82 (Vi6) / 74 (Vi5) depending on glazing.

F. Thermal movement: accommodate movement over an ambient range of [–30°F to +180°F] without damage or loss of seal.

G. Operating force: per AAMA 513 — maximum 5 lbf with one hand, without tight grasping, pinching, or wrist twisting.

H. Forced-entry resistance per AAMA 1302; life-cycle durability per AAMA 910 with no damage rendering units inoperable and no loss of the specified air/water performance.

1.5 SUBMITTALS

A. Submit under provisions of Division 01.

B. Product Data: manufacturer's data sheets on each product type, hardware, gaskets, finishes and glazing, including preparation, storage and installation requirements.

C. Shop Drawings: elevations, sections, full-size profile details, anchorage, receptors, panning and trims, weeps and drainage path, glazing details, mullion reinforcement, direction of operable parts, and interface with adjacent construction.

*** NOTE TO SPECIFIER ** Vistaza generates a per-project performance submittal — glass makeup, whole-window U-factor / SHGC / VT, and the supporting NFRC and acoustic reports for each window type — through the Vistaza Architect portal.*

D. Performance Submittal: per-type performance summary including glass makeup, whole-window U-factor / SHGC / VT, STC/OITC where scheduled, and the supporting certified test or simulation report for each value.

E. Certified Test Reports: NAFS structural/air/water reports and NFRC 100/200 simulation reports by an accredited laboratory, not more than four years old; test results based on downsized units are not acceptable.

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

F. Selection Samples: two sets of color chips representing the manufacturer's range of foil colors and hardware finishes.

G. Verification Samples: corner section per series showing frame, sash, glazing bead, gasket and weld; hardware finish sample.

*** NOTE TO SPECIFIER ** Retain where the authority having jurisdiction or the project's structural narrative requires anchorage engineering.*

H. Anchorage Calculations: [where required] structural anchorage calculations signed and sealed by a professional engineer licensed in the project's state, based on design wind pressures per ASCE 7 and Code.

I. Qualification data (manufacturer, installer, testing agency); field quality-control reports; product schedule using the designations on the Drawings.

J. Warranty: manufacturer's standard warranty document per Article 1.9.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: a manufacturer capable of fabricating units that meet or exceed the Performance Requirements and of documenting this performance by certified test reports, simulation reports and labels. Obtain windows, terrace doors and sliding doors of this Section through one source from a single manufacturer.

B. Installer Qualifications: acceptable to the manufacturer and trained in the installation and adjustment of the specified systems and hardware.

C. Fabrication: units fully factory-fabricated and factory-glazed; frame and sash corners miter-cut and fusion-welded with seamless-finished welds. Field assembly limited to mulling of factory units.

D. Certifications: referenced structural, acoustic and simulation reports by an AAMA-accredited independent laboratory (Intertek Building & Construction / Architectural Testing).

*** NOTE TO SPECIFIER ** Retain paragraph below if a pre-installation meeting is required.*

E. Pre-Installation Meeting: conduct at the Project site — substrate condition, schedule, sequencing, and testing procedures.

*** NOTE TO SPECIFIER ** Include a mock-up if the project size and/or quality warrant it. Delete if not required.*

F. Mock-Up: build a mock-up where indicated to verify selections and set quality standards for materials and execution; do not proceed until approved.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

B. Deliver factory-glazed units with protective film on finished surfaces; store on edge, off the ground, under cover, protected from weather, weld splatter, solvents and abrasives; keep drainage paths clear.

1.8 PROJECT CONDITIONS

A. Field Measurements: verify actual dimensions of openings by field measurement before fabrication where practicable and record on shop drawings; otherwise establish opening dimensions and coordinate wall construction to match.

1.9 WARRANTY

A. Manufacturer's written warranty, agreeing to repair or replace units that fail in materials or workmanship within five (5) years from the date of shipment by the manufacturer. Failures include: failure to meet the performance requirements of Article 1.4; structural failure including excessive deflection; water leakage or air infiltration beyond the tested ratings; faulty operation of sash or hardware; deterioration of finishes beyond normal weathering; and insulating glass seal failure.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: **Vistaza Inc.**, 6007 16th Avenue, Brooklyn, NY 11204; Email: architect@vistaza.com; Web: architect.vistaza.com.

*** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of the Division 01 section on product options and substitutions.*

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Division 01 — proposed equals must match the tested NAFS class, water pressure, air infiltration, U-factor, and STC/OITC ratings of Article 1.4 with equivalent certified reports.

2.2 WINDOW AND DOOR SYSTEMS

*** NOTE TO SPECIFIER ** Two systems are available; both may appear on one project. Vi5 is the standard 70 mm system with visible hardware; Vi6 is the deeper 82 mm system with concealed hardware, higher AW ratings and the deepest thermal/acoustic range (see Tables 1 and 2). Delete the series not required.*

A. Vi5 Series: five-chamber uPVC system, 2¾ inch (70 mm) frame depth; internal zinc-coated steel reinforcement sized per structural requirements; dual EPDM gasket weather seals (outer and inner); interior snap-in glazing beads with co-extruded seals. Operable hardware: manufacturer's standard multi-point perimeter locking with visible hinges.

B. Vi6 Series: six-chamber uPVC system, 3¼ inch (82 mm) frame depth; internal zinc-coated steel reinforcement sized per structural requirements; three EPDM gasket weather seals — outer, centre and inner, the centre gasket forming a second barrier to wind-driven water and to air; interior snap-in glazing beads with co-extruded seals. Operable hardware: manufacturer's standard concealed multi-point perimeter hardware.

2.3 WINDOWS

*** NOTE TO SPECIFIER ** Delete window products not required for project.*

A. Fixed Windows:

1. Product: Vistaza Vi5 Series Fixed Window.
2. Product: Vistaza Vi6 Series Fixed Window.

*** NOTE TO SPECIFIER ** Vistaza casement windows hinge at the side and open inward (European turn). Delete if not required.*

B. In-Swing Casement Windows:

1. Product: Vistaza Vi5 Series In-Swing Casement Window.
2. Product: Vistaza Vi6 Series In-Swing Casement Window.

*** NOTE TO SPECIFIER ** Hopper windows hinge at the bottom and tilt inward at the top. Delete if not required.*

C. Hopper Windows:

1. Product: Vistaza Vi6 Series Hopper Window.

2.4 TERRACE DOORS

*** NOTE TO SPECIFIER ** Delete door products not required for project. The ADA-threshold option carries a reduced water rating — coordinate with the Drawings.*

A. In-Swing Terrace Doors:

1. Product: Vistaza Vi5 Series In-Swing Terrace Door.
2. Product: Vistaza Vi6 Series In-Swing Terrace Door.
3. Product: Vistaza Vi6 Series In-Swing Terrace Door, ADA threshold.

B. Out-Swing Terrace Doors:

1. Product: Vistaza Vi6 Series Out-Swing Terrace Door.

C. Door construction: reinforced uPVC door sash profiles; manufacturer's standard adjustable door hinges, surface-mounted; manufacturer's standard multi-point door lock (4-roller + top lock) with handle-operated deadbolt; aluminum-composite thermally broken threshold with concealed fasteners; drip cap at frame head; sill weeps arranged to drain by gravity and resist wind-driven water.

2.5 SLIDING DOORS

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

A. Sliding Doors:

1. Product: Vistaza Vi5 Series Sliding Door, OX or XO configuration as indicated on Drawings.

2.6 MATERIALS

A. Frame and sash extrusions: rigid uPVC compound with integral color, UV inhibitors and surface/color stabilizers, complying with AAMA 303 and ASTM D4216; exterior-laminated per Article 2.9 where scheduled.

B. Reinforcement: zinc-coated (galvanized) carbon steel inserted in frame, sash and mullion chambers; hardware fastened into steel reinforcement.

C. Weather seals: EPDM/TPE gaskets, replaceable, continuous lengths, complying with AAMA 701/702.

D. Fasteners: corrosion-resistant; stainless steel where exposed; isolated to prevent galvanic action.

E. Mullions (thin/thick with steel reinforcement), connectors (straight / 90° / variable-angle / corner), receptors, panning, trims and nailing fin available per manufacturer's standard profiles as detailed on shop drawings.

2.7 GLAZING

A. Factory-glazed insulating glass units per Section 08 80 00 and the glazing schedule. Standard unit: insulated double-pane glass with a low-E coating and argon fill.

*** NOTE TO SPECIFIER ** Select glazing options below; delete options not required. Whole-window performance for any makeup — including laminated acoustic and bird-safe options — can be generated per project at architect.vistaza.com. Consult Vistaza for additional glazing options.*

B. Available options (as scheduled):

1. High-performance low-E and solar-control coatings.
2. Argon or krypton gas fill.
3. Laminated acoustic glass (STC/OITC per Table 2).
4. Bird-safe (ViBird) patterned glass.
5. Tempered or laminated safety glazing where required by code, per ANSI Z97.1.
6. Triple glazing.

C. Whole-window performance for each selected makeup shall be documented in the Performance Submittal (Article 1.5.D).

2.8 HARDWARE

A. Windows: manufacturer's standard multi-point locking espagnolette hardware — visible-hinge at Vi5 Series, concealed-hinge at Vi6 Series; manufacturer's standard aluminum handle in white, silver or black.

*** NOTE TO SPECIFIER ** Delete handle finishes not required.*

1. Handle Finish: White.
2. Handle Finish: Black.
3. Handle Finish: Silver.

B. Limit Devices: heavy-duty opening limiters restricting sash opening to 4 inches [NYC HDLD-compliant]; vent limiters at operable sashes where scheduled.

*** NOTE TO SPECIFIER ** Delete if not required. Trickle vents mount in the frame with an exterior canopy; coordinate quantity with the mechanical ventilation design.*

C. Trickle Vents: frame-mounted vent unit with exterior canopy, where scheduled.

2.9 FINISHES

A. Standard: white uPVC, integral color.

*** NOTE TO SPECIFIER ** Delete finish option not required. Custom foil colors are available — consult Vistaza.*

B. Exterior Finish: exterior-face laminate foil, color as selected from manufacturer's standard range; interior white unless scheduled otherwise. Foil finishes uniform, free of blisters, streaks and flow lines.

C. Exterior Finish: custom laminate foil color.

D. All visible accessories finished to match the adjacent frame color.

2.10 ACCESSORIES

*** NOTE TO SPECIFIER ** Delete accessories not required.*

A. Insect Screens: removable exterior-mounted screens at operable sashes; aluminum frames finished to match the window, 18-by-16 mesh [fiberglass / stainless steel] fabric.

B. Grids: [grids-between-glass / simulated divided lites] as scheduled.

C. Louvers: [manufacturer's PTAC louver to suit the specified sleeve, with blank-off panels] where scheduled.

2.11 FABRICATION

A. Miter-cut and fusion-weld all frame and sash corners; finish welds seamless.

B. Provide baffled weep and drainage passages to the exterior, separated from reinforcement chambers.

C. Complete fabrication, glazing, hardware application and finishing before shipment; field assembly limited to approved mulled connections.

PART 3 — EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage and conditions, with Installer present, for compliance with installation tolerances, rough-opening dimensions and levelness of sill. Report variances to the Architect; do not proceed over unsatisfactory conditions.

3.2 INSTALLATION

A. Install per the manufacturer's installation instructions and approved shop drawings; anchor through frame into structure with fasteners engaging the steel reinforcement, shimmed plumb, level and true. Shims: high-strength plastic; wood or moisture-degradable shims are not acceptable.

B. Provide perimeter air/water seal: continuous interior and exterior sealant joints per Section 07 92 00, with end dams at sills, insulation at perimeter voids, and flashing/receptors as detailed.

C. Isolate uPVC and steel components from incompatible materials.

D. Adjust operable units for smooth operation, uniform reveals, and full weather-seal contact.

3.3 FIELD QUALITY CONTROL

*** NOTE TO SPECIFIER ** Edit the number of test locations to suit the project; delete the article if field testing is not required.*

A. Field air/water testing per AAMA 502 (air per ASTM E783, water per ASTM E1105) at [three] locations selected by the Owner's representative, by a qualified independent agency. Remedy and retest non-complying installations.

3.4 ADJUSTING AND CLEANING

A. Adjust hardware, remove labels and protective film, replace damaged glass, and leave units clean.

END OF SECTION 08 53 13