

Milgard Ultra™ Series Fiberglass Windows - 3-Part Specification

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON *MASTERFORMAT*, 2004 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING 01 25 13 PRODUCT SUBSTITUTION PROCEDURES, SECTIONS 01 33 00 – SUBMITTAL PROCEDURES, 01 62 00 – PRODUCT OPTIONS, 01 66 00 – PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01 74 00 – CLEANING AND WASTE MANAGEMENT, 01 77 00 – CLOSEOUT PROCEDURES, AND 01 78 00 – CLOSEOUT SUBMITTALS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS AN OPEN PROPRIETARY SPECIFICATION ALLOWING USERS THE OPTION OF APPROVING OTHER MANUFACTURERS THAT COMPLY WITH THE CRITERIA SPECIFIED HEREIN.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G. [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED BLANK SPACES, E.G. _____ .

OPTIONAL PARAGRAPHS REQUIRING SELECTION OF ONE OF THE OPTIONS ARE SEPARATED BY “OR” WITHIN A BOX, E.G.

OR

BOLD FACE TYPE IDENTIFIES OPTIONAL PARAGRAPHS AND FEATURES THAT MAY BE INCLUDED OR DELETED DEPENDING ON PROJECT REQUIREMENTS. CONVERT THE BOLD FACE TYPE TO REGULAR TYPE WHEN INCLUDING THESE PARAGRAPHS OR FEATURES.

REVISE FOOTER TO SUIT PROJECT/OFFICE REQUIREMENTS.

ELECTRONIC VERSIONS OF THIS SPECIFICATION UTILIZE AUTOMATIC PARAGRAPH NUMBERING.

WHEN EDITING IS COMPLETE, DELETE ALL TEXT ON THIS PAGE, THEN REMOVE THE SECTION BREAK AT THE TOP OF THE NEXT PAGE TO REMOVE THIS PAGE FROM THE DOCUMENT.

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SECTION 08 54 13 FIBERGLASS WINDOWS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Fiberglass windows with painted exterior and interior finish of the following type(s):

1. **Horizontal sliding windows.**
2. **Single-hung windows.**
3. **Double-hung tilt windows.**
4. **Casement windows.**
5. **Awning windows.**
6. **Picture windows.**
7. **Radius windows.**
8. **Bay windows.**
9. **Bow windows.**

- B. Related Sections:

INSERT APPROPRIATE SECTION NUMBERS AND TITLES BELOW FOR DOOR FLASHING, INSTALLATION SEALANT AND PAINTING OF INTERIOR FRAME, SASH, AND DIVIDED LITE GRIDS IF DESIRED. WINDOWS ARE FURNISHED PREPAINTED IN WHITE BAKED ON ENAMEL, BUT CAN BE FIELD PAINTED IN ANOTHER COLOR.

1. ____ - _____.
2. ____ - _____.
3. **08 16 13 - Fiberglass Doors (Swing).**
4. **08 16 73 - Sliding Composite Doors.**
5. ____ - _____. **Painting of interior frame and sash.**

INCLUDE APPROPRIATE LANGUAGE BELOW IF PRODUCTS SPECIFIED IN THIS SECTION ARE TO BE BID AS ALTERNATES. OTHERWISE DELETE FOLLOWING PARAGRAPH.

- C. Alternates:

1. Reference Section 01 23 00 – Alternates.

1.02 SUBMITTALS

- A. Reference Section 01 33 00 – Submittal Procedures; submit following items:

1. Product Data.
2. Shop Drawings: Include window schedule, window elevations, sections and details, and multiple window assembly details.
3. Samples:
 - a. Color Samples: Minimum 1x4 inch (25x100 mm) paint color chips on fiberglass substrate.
 - b. Glass, showing specified tint color.**
4. Quality Assurance/Control Submittals:
 - a. Qualifications: Proof of manufacturer's qualifications.
 - b. U-Factor and structural rating charts required for AAMA and NFRC labeling requirements.**
 - c. Installation Instructions - AAMA 2400 & AAMA 2410 (Flush Fin Installation).

- B. Closeout Submittals: Reference Section 01 78 00 – Closeout Submittals; submit following items:

1. Temporary window labels marked to identify windows that labels were applied to.
2. Maintenance instructions.
3. Special Warranties.

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1.03 QUALITY ASSURANCE

- A. Overall Standards: Comply with ANSI/AAMA/101/I.S.2, except as otherwise noted herein.
- B. Qualifications:
 - 1. Manufacturer Qualifications:
 - a. Minimum ten years experience in producing fiberglass windows.
 - b. Member AAMA, NFRC.

INSERT LOCAL REGULATORY REQUIREMENTS BELOW.

- C. Regulatory Requirements:
- D. **Certifications for insulated glass windows:**
 - 1. AAMA: Windows shall be Silver Label certified with label attached to frame per AAMA requirements.
 - 2. NFRC: Windows shall be NFRC certified with temporary U-factor label applied to glass and an NFRC tab added to permanent AAMA frame label.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Reference Section 01 66 00 – Product Storage and Handling Requirements.
- B. Provide cardboard corner boots and full stretch wrap shipping protection.
- C. Follow manufacturer's instructions on label applied to windows.

1.05 WARRANTY

SELECT "RESIDENTIAL" WARRANTY BELOW FOR OWNER OCCUPIED SINGLE FAMILY RESIDENTIAL AND OWNER OCCUPIED CONDOMINIUM PROJECTS.
SELECT "COMMERCIAL" WARRANTY FOR NON-OWNER OCCUPIED CONDOMINIUMS, COMMERCIAL, AND MULTI-FAMILY PROJECTS.

- A. Residential Special Warranty:
 - 1. Full Lifetime Warranty including glass breakage to original homeowner.
 - 2. Transferability:
 - a. Permit unlimited transfer of ownership in first ten years.
 - b. Upon first transfer of ownership, warranty period shall become ten years from date of original purchase.
 - 3. Guarantee windows against defects in materials and workmanship including costs for parts and labor. Wood veneer surfaces are required to be finish coated per manufacturer's instructions.

OR

- A. Commercial Special Warranty:
 - 1. 10 year warranty.
 - 2. Guarantee windows against defects in materials and workmanship including costs for parts and labor. Wood veneer surfaces are required to be finish coated per manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Milgard Manufacturing, Inc.
 - 1010 54th Avenue East
 - Tacoma, WA 98424
 - Tel: (800) MILGARD (645-4273)
 - Fax: (253) 926-0848
 - Website: <http://www.milgard.com/>

INSERT NAME, ADDRESS AND PHONE NUMBERS OF MANUFACTURER'S REPRESENTATIVE BELOW.

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1. Manufacturer's Representative:

Tel: _____

Fax: _____

E-mail: _____

- B. Window Series: Milgard Ultra™.

- C. Substitutions: Reference Section 01 25 13 – Product Substitution Procedures.

2.02 MATERIALS

- A. Fiberglass: AAMA 305 glass fiber reinforced thermoset profile.

VERIFY THAT WINDOW FLASHING MATERIAL AND INSTALLATION SEALANT IS SPECIFIED IN APPROPRIATE SECTIONS.

2.03 GENERAL PERFORMANCE REQUIREMENTS

- A. Thermal Performance: Comply with NFRC 100.
- B. Air Leakage, Water Resistance, Structural Test: Comply with ANSI/AAMA /NWWDA 101/I.S.2.
- C. Forced-Entry Resistance: Comply with CAWM 301-90.

2.04 WINDOW TYPES

SELECT FOLLOWING WINDOW TYPES AND RELATED NAIL FIN/MOUNTING STYLE BASED ON PROJECT REQUIREMENTS.
DELETE WINDOW TYPES NOT USED.

- A. Horizontal Slider - 3110 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 4-1/4 inch (108 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 1-9/16 inch (39.7 mm) deep, multi-chambered fiberglass pultrusion.
 3. Sightlines: Equal for operating and fixed sash.
 4. Structural Class:
 - a. 6°6° and smaller: HS-C35.
 - b. 12°6° XO: HS-LC25.
 5. Hardware:
 - a. Adjustable nylon rollers with SS axle, extruded aluminum snap-on monorail roller track.
 - b. Cam lock locking mechanism [positive action lock mechanism option].
 6. Weatherstripping: Foam filled seal and fin seal polypropylene pile.
- B. Single-Hung - 3210 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]
1. Frame: Minimum 4-1/4 inch (108 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 1-9/16 inch (39.7 mm) deep, multi-chambered fiberglass pultrusion.
 3. Sightlines: Equal for operating and fixed sash.
 4. Structural Class: H-C30.
 5. Hardware:
 - a. Concealed block and tackle balancer.
 - b. Sash lift.
 - c. Positive action locking mechanism [cam lock option].
 6. Weatherstripping: Foam filled seal and fin seal polypropylene pile.
- C. Double-Hung Tilt - 3275 Series, [1-3/8 inch (35 mm) nail fin setback] [1-3/8 inch (35 mm) nail fin setback]:
1. Frame: Minimum 5-7/8 inch (149 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 1-9/16 inch (39.7 mm) deep, multi-chambered fiberglass pultrusion. Tilt-in upper and lower sash.
 3. Structural Class: DH-LC40.

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4. Hardware:
 - a. Concealed constant force balancer.
 - b. Sash lift option.
 - c. Flush mounted cam lock/sash release mechanism.
 5. Weatherstripping: Foam filled seal and vinyl compression bulb seal.
- D. Double-Hung Tilt - 3285 Series:
1. Frame: Minimum 4 15/16 inch (125 mm) deep [3 1/4 inch Retrofit], multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 1-9/16 inch (39.7 mm) deep, multi-chambered fiberglass pultrusion. Tilt-in upper and lower sash.
 3. Structural Class: DH-LC40.
 4. Hardware:
 - a. Concealed constant force balancer.
 - b. Sash lift option.
 - c. Flush mounted cam lock/sash release mechanism.
 5. Weatherstripping: Foam filled seal and vinyl compression bulb seal.
- E. Casement - 3510 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 3-1/4 inch (83 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 2-3/8 inch (60.3 mm) deep, multi-chambered fiberglass pultrusion.
 3. Structural Class: C-C45.
 4. Hardware:
 - a. Dual steel arm rotary operator with [standard handle] [fold-down handle].
 - b. Single lever, multi-point, locking mechanism.
 - c. Four bar stainless steel hinge.
 5. Weatherstripping: Vinyl compression bulb seal.
- F. Awning - 3410 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 3-1/4 inch (83 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 2-3/8 inch (60.3 mm) deep, multi-chambered fiberglass pultrusion.
 3. Structural Class: AP-C35.
 4. Hardware:
 - a. Single steel arm rotary scissor operator with [standard handle] [fold-down handle].
 - b. Dual lever locking mechanism.
 - c. Two bar stainless steel hinge.
 5. Weatherstripping: Vinyl compression bulb seal.
- G. Picture - 3310 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 3-1/4 inch (83 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sightlines: Equal to operating windows (except to double-hungs).
 3. Structural Class: F-C50.
- H. Picture - 3315 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 4-1/4 inch (108 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sightlines: Equal to operating windows (except to double-hungs).
 3. Structural Class: F-C50.
- I. Picture - 3371 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback] [Z-Bar flush fin retrofit trim]:
1. Frame: Minimum 4-1/4 inch (108 mm) deep, multi-chambered fiberglass pultrusion.
 2. Sash: Minimum 1-9/16 inch (39.7 mm) deep, multi-chambered fiberglass pultrusion.
 3. Structural Class:
 - a. 6060 and smaller: HC-C35.
 4. Weatherstripping: Foam filled seal.

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- J. Radius - 3710 Series, [1-3/8 inch (35 mm) nail fin setback] [1 inch (25 mm) nail fin setback]:
 - 1. Frame: Minimum [3-1/4 inch (83 mm)] [4-1/4 inch (108 mm)] deep, extruded aluminum profile with integral wood liner. (This is not a fiberglass product)
 - 2. Structural Class: F-C40.
- K. Bay Windows:
 - 1. Frame: Minimum 3-1/4 inch (83 mm) deep, multi-chambered fiberglass pultrusion.
 - 2. Unit configuration and window types as shown on Drawings; muller together to form single window unit.
 - 3. Assembly posts at 45 degrees.

2.05 GLAZING

- A. Insulated Glass Units: ASTM E 774, Class A, 7/8 inch (22 mm) thick overall:
 - 1. Glazing Type: [Clear/Clear] [Clear/SunCoat® Low-E] [Clear/SunCoat® Low-E, argon gas filled] [Clear/SunCoatMAX® Low-E] [Clear/SunCoatMAX® Low-E, argon gas filled] [Clear/Hardcoat Low-E] [Clear/Hardcoat Low-E, argon gas filled].
 - 2. Spacer type: EdgeGardMAX™ High Performance foam based warm edge spacer system.

MOST COMMON TYPES OF INSULATED UNITS ARE INCLUDED ABOVE, BUT SEVERAL OTHER TYPES INCLUDING TINTED, REFLECTIVE, HEATSTRENGTHENED, TEMPERED, OBSCURE, WIRE, AND LAMINATED ARE AVAILABLE FOR SPECIAL APPLICATIONS. SELECT DESIRED TYPES FROM MILGARD WEBSITE AND SPECIFY IN LIEU OF, OR IN ADDITION, TO THE ABOVE WITH ALL NECESSARY CRITERIA SUCH AS TINT COLORS AND OBSCURE PATTERNS. IF MORE THAN ONE TYPE OF GLAZING IS REQUIRED FOR THE PROJECT, BE CERTAIN THAT TYPE FOR EACH WINDOW IS CLEARLY NOTED ON DRAWINGS OR IN WINDOW SCHEDULE.

2.06 GRIDS:

SELECT DESIRED GRID TYPE, IF ANY, FROM THE FOLLOWING LIST AND DELETE THOSE NOT USED. STANDARD HORIZONTAL/VERTICAL GRID PATTERN WILL BE PROVIDED UNLESS OTHER GRID PATTERNS ARE SHOWN ON THE DRAWINGS. CERTAIN GRID PATTERNS MAY NOT BE AVAILABLE WITH ONE OR THE OTHER BAR TYPES IN THE FOLLOWING PARAGRAPHS - CONSULT MILGARD FOR DESIGN OTHER THAN STANDARD PATTERNS.

- A. Grid Types:
 - 1. Flat Internal Grid: 5/8 inch (16 mm) wide aluminum bar internal (between the glass) grid.
 - 2. Sculptured Internal Grid: 1-1/16 inch (27 mm) wide sculptured aluminum bar internal grid.
 - 3. SDL Vintage Grid: 1-1/8 inch (29 mm) wide profiled painted wood strips applied to interior glass, 7/8 inch (22 mm) wide aluminum box spacer internal grid, and 1-1/8 inch (29 mm) wide trapezoidal fiberglass bar applied to exterior glass.
 - 4. SDL Vintage Grid: 3/4 inch (19 mm) wide profiled painted wood strips applied to interior glass, 5/8 inch (16 mm) wide aluminum box spacer internal grid, and 3/4 inch (19 mm) wide trapezoidal fiberglass bar applied to exterior glass.
 - 5. SDL Craftsman Grid: 1-1/8 inch (29 mm) wide profiled painted wood strips applied to interior glass, 1-1/16 inch (27 mm) wide sculptured aluminum bar internal grid.
 - 6. SDL Legacy Grid: 1-1/16 inch (27 mm) wide sculptured aluminum bar internal grid, and 1-1/8 inch (29 mm) wide trapezoidal fiberglass bar applied to exterior glass.

2.07 INSECT SCREENS:

- A. Provide tight-fitting screen for operating sash with hardware to allow easy removal.
 - 1. Screen Cloth: [Fiberglass screen mesh][Optional PureView™ low-visibility fiberglass mesh].
 - 2. Frame: [Extruded aluminum frame - DHR, Case, Awn] [Roll formed aluminum frame - DH, SH, HV, Case, Awn]

2.08 FABRICATION

- A. Fabricate frames and panels with milled and mitered joints and mechanically joined corners. Trim and finish corners to match adjacent surfaces.
- B. Provide concealed metal reinforcement in sash frame for attaching lock mechanism.
- C. Factory exterior wet silicone glaze with snap-on fiberglass glazing stops matching interior sash and frame finish, except where field glazing is required due to large window unit dimensions (over 40 sf (3.72 m²)). Insulating units shall be reglazeable without dismantling sash framing.

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2.09 FINISH

- A. Frame and Sash.
 - 1. Exterior: Paint color is baked on enamel.
 - 2. Interior: White baked on enamel.
- B. **Simulated Divided Lite Grids:**
 - 1. **Interior Wood Grids: Paint white to match frame and sash interior finish.**
 - 2. **Internal Bars: Mill finished aluminum.**
 - 3. **Exterior Fiberglass Bars: Baked on enamel; match frame and panel exterior color.**
- C. Hardware: [Painted or Metal finishes as supplied by Milgard].
- D. **Screen Frame Color:**
 - 1. Exterior Mounted Screens: Match frame to exterior window frame and sash color.
 - 2. Interior Mounted Screens: [White] [Tan] [Brownstone] [Matte Black] [Silver Pearl] [Sand] [Cranberry] [Hunter Green] [Champagne].

2.10 SOURCE QUALITY CONTROL

- A. Inspect windows in accordance with manufacturer's Quality Control Program as required by AAMA Silver Label certification.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine openings in which windows will be installed.
 - 1. **Verify that framing complies with AAMA 2400 & AAMA 2410 (Flush Fin Installation).**
 - 2. **Verify that fasteners in framed walls are fully driven and will not interfere with window installation.**
- B. Coordinate with responsible entity to correct unsatisfactory conditions.
- C. Commencement of work by installer is acceptance of substrate conditions.

3.02 INSTALLATION

INSTALLATION INSTRUCTIONS (AAMA 2400) ARE ADEQUATE FOR NORMAL INSTALLATION CONDITIONS IN FRAMED CONSTRUCTION. MASONRY WALLS AND UNUSUAL CONDITIONS MAY REQUIRE ADDITIONAL INFORMATION IN THIS ARTICLE.

- A. Install windows in framed walls in accordance with AAMA 2400.
 - 1. Provide continuous shim support along full length of sill.
- B. Do not remove temporary labels.
- C. **Install insect screens on operable sash.**

3.03 CLEANING

- A. Reference Section 01 74 00 – Cleaning and Waste Management.
- B. Remove temporary labels and retain for Closeout Submittals.
- C. Clean soiled surfaces and glass using a mild detergent and warm water solution with soft, clean cloths.

END OF SECTION

Issue Date: February 16, 2009

Specification subject to change. For the most up to date information visit milgard.com.



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