

MILFORD SCHOOL DISTRICT

SAU 40
100 West Street
Milford, NH 03055
603-673-2202
Fax 603-673-2237

Michael Tenters
Director of Curriculum & Instruction

Robert Marquis
Superintendent of Schools

Jennifer Burk
Business Administrator

Dear Potential Bidder:

Enclosed is an Invitation to Bid on the replacement of the Exterior Windows and all associated components at Milford Middle School in the Milford School District. When submitted, bids must be complete and include the following documents: Good Faith Statement, Experience/Performance Statement, Cost Statement, and evidence of insurability and bonding capability, if applicable.

A mandatory pre-bid meeting has been scheduled for **March 2, 2018, at 9:30 am** at the site: Milford Middle School, 33 Osgood Road, Milford, NH 03055. **Bids will be opened on March 14, 2018 at 11:00 am.**

You may start the project no later than June 18, 2018 and a firm completion date will be mutually agreed upon between the Milford School District and the successful Bidder.

Sincerely,

Robert Marquis
Superintendent of Schools

Enclosures:
Good Faith Statement
Statement of Experience and Ability to Perform
Cost Statement
Invitation to Bid
Technical Specifications/Scope of Work
Milford Middle School Map

**REPLACEMENT WINDOWS MILFORD MIDDLE SCHOOL
MILFORD SCHOOL DISTRICT
BID**

GOOD FAITH STATEMENT

To Whom It May Concern:

The undersigned represents that this proposal is made in good faith, without fraud, collusion or connection of any kind with any other bidder for the same work; that he has informed himself fully in regard to the Specifications for the at Milford Middle School for the Milford School District of Milford, New Hampshire, and has made his own examinations and estimates and from them makes this proposal.

The undersigned understand that the Milford School District reserves the right to waive any formalities in, to reject any and all bids or any part thereof, and/or accept any bid or part thereof, or to select a bidder whose bid is not the lowest, which it considers to be for the best interest of the Milford School District.

With the above understanding, the undersigned proposes to replace all exterior windows and all components associated with said window systems including but not limited to window locks, etc. at Milford Middle School for the Milford School District and to comply in all respects with said specifications for the sum or sums stated.

COMPANY: _____

ADDRESS: _____

NAME (typed or printed): _____

SIGNATURE: _____

TITLE: _____

DATE: _____

**REPLACEMENT WINDOWS MILFORD MIDDLE SCHOOL
MILFORD SCHOOL DISTRICT
BID**

**STATEMENT OF BUSINESS EXPERIENCE AND ABILITY
TO PERFORM**

1. How long have you been in business? _____ Years
2. How many window projects have you completed? _____
3. Please attach a list of the schools and work you have completed or at which you are currently engaged, including the name of the facility and project, the approximate square footage of the project, and the year the construction was complete.
4. Other
 - a. The Bidder shall provide copies of the company's employee safety training program, personnel policies (including criminal background check policy), and work rules.
 - b. The Bidder shall provide four (4) current references, including email addresses and phone numbers, two (2) of which should be school districts in New Hampshire.
 - c. The Bidder shall disclose any active or pending litigation against the Bidder.
 - d. The Bidder shall provide a copy of the Certificate of Authority from the New Hampshire Department of State indicating the Bidder may transact business in the State of NH.
 - e. For bids in excess of \$100,000, The Bidder shall submit certifications of employee 10-hour OSHA safety training.
 - f. The Bidder shall submit EPA lead paint certifications for company (ies) and employees.

BIDDER: _____

ADDRESS: _____

NAME: _____

Signature

Title

Date

**REPLACEMENT WINDOWS MILFORD MIDDLE SCHOOL
MILFORD SCHOOL DISTRICT
BID
COST STATEMENT**

Base Proposal of Piping replacement as Described in Specifications:

(List items, if necessary)

Aluminum Windows \$ _____

Fiberglass Windows \$ _____

Option 3 \$ _____

TOTAL (all-inclusive, not-to-exceed price) \$ _____

BIDDER: _____

ADDRESS: _____

NAME: _____

Signature

Title

Date

INVITATION TO BID

SECTION I

General Requirements

The Milford School District, by its School Board (hereinafter called the "School District"), invites bids from responsible parties to provide Bid Form. The School District reserves the right to reject any or all bids as it deems to be in the best interests of the School District.

GENERAL CONDITIONS:

1. A pre-bid meeting has been scheduled for **March 2, 2018** at 9:30 a.m. at the site: Milford Middle School, 33 Osgood Road, Milford, NH 03055.
2. Should any prospective bidder desire clarification or interpretation of any items in the advertisement, invitation to bid, general conditions and specifications, he shall request such, via email, from the Director of Buildings and Grounds, at wcooper@milfordk12.org, and the question put and the answer given by the Director of Buildings and Grounds. All Questions and Answers will be posted to the School Districts website and emailed to all bidders.
3. All bids must be submitted on the official forms (attached hereto), sealed, labeled "**Sealed Bid: Window Replacement Project – Milford Middle School**" and delivered to the Office of the Superintendent of Schools, 100 West Street, Milford, New Hampshire 03055, by 11:00 A. M., on **March 14, 2018**.
4. Bidders will submit one (1) original bid and three (3) copies. All proposals must be on the forms provided and signed by the individual, partnership or corporation making the same; when made by a corporation, proposals must be signed by the officers thereof authorized to bind it by contract and be accompanied by a copy, under seal, of his authority to sign. Additional pages may be attached, dated, and signed by an authorized representative of the successful bidder, if additional space is required to provide a complete response.
5. No bid shall be withdrawn for a period of thirty-five (35) days from date of submission.
6. The bidders are invited to be present at the public bid opening at the Office of the Superintendent of Schools, 100 West Street, Milford, New Hampshire, at **11:00 A.M. on March 14, 2018**.
7. Awarding of the contract will be within thirty-five (35) days of the bid opening.
8. The competency, responsibility, experience, reputation, and financial standing of the bidders will be considered in making the award. The School District reserves the right to reject any or all bids, wholly or in part, to waive any informality therein, to accept any bid even though it may not be the lowest bid, and to make award which in its sole and absolute judgment will best serve the School District's interests. Bidders shall bid specifications and any exceptions must be noted.

9. All Bidders will be certified by the Secretary of State of the State of New Hampshire to transact business in the State of New Hampshire. Each Bidder shall provide a copy of the Certificate of Authority from the New Hampshire Department of State indicating the Bidder may transact business in the State of NH.
10. All bidders shall submit, with their bids, evidence from insurance and/or Surety Company (ies) licensed to do business in the State of New Hampshire, which it shall provide the bidder with insurance coverage, a performance bond, and a payment bond in the amount required herein if the bidder is successful.
11. A **Performance and Payment Bond** in the total estimated amount of the annual contract shall be furnished before a contract is signed. The successful bidder shall procure and maintain in force a performance and payment bond from an insurance or surety company licensed to do business in the State of New Hampshire for the benefit of the School District conditioned upon the faithful performance of the terms of the contract, in an amount equal to one hundred percent (100%) of the contract. The cost to maintain the performance and payment bonds is to be included in the bid price

The successful bidder will be required to indemnify the School District for any loss that they may sustain from any cause arising out of the performance or lack of performance of the agreement by the successful bidder.

12. **Automobile and general liability insurance** shall be carried by the successful bidder during the life of the Agreement in the amount of five million dollars (\$5,000,000) per occurrence. The insurance may be arranged under a single policy or by a combination of an underlying policy with the balance provided by an Excess or Umbrella policy.

Such policy will name the School District as a co-insured and a certificate of such insurance must be received by the Business Administrator upon execution of the contract and prior to the start of any work on the project. The successful bidder will immediately notify the School District if the successful bidder receives any notice from the insurance company or companies providing such insurance coverage that such company or companies intends to cancel any part of such insurance; such notice shall be in addition to any obligation of the insurance company or companies to notify the School District as an additional insured.

The successful bidder shall agree to hold harmless the School District and any of the School District's officials, elected or otherwise, and its employees from claims for damages, including legal expenses, for property damage and/or personal injuries, and/or bodily injuries, including death, which may arise from or out of the operation hereunder.

The successful bidder shall maintain **Workers' Compensation Insurance** for all employees engaged in the project. The successful bidder will immediately notify the School District if the successful bidder receives any notice from the insurance company or companies providing such insurance coverage that such company or companies intends to cancel any part of such insurance; such notice shall be in addition to any obligation of the insurance company or companies to notify the School District as an additional insured.

For bids in excess of one hundred thousand dollars (\$100,000), or where hazardous materials are involved, the successful bidder shall, prior to the performance of any work under the contract, provide the School district with certification of the successful completion of a 10-hour Occupational Safety and Health Administration (OSHA) construction safety program for each on-site employee, including those of any subcontractor, as required by NH RSA 277:5-a.

The successful bidder shall procure and maintain in force **Builder's Risk insurance** in an amount equal to 100% of the project construction costs. A certificate of such insurance must be received by the Business

Administrator upon execution of the contract and prior to the start of any work on the project. The successful bidder will immediately notify the School District if the successful bidder receives any notice from the insurance company providing such insurance coverage that such company intends to cancel any part of such insurance.

13. For proposals containing work that may disturb any painted surface, the successful bidder will provide a copy of the bidder's (and any subcontractor's) EPA-required certification to conduct lead-based paint activities or renovations, and copies of employees' individual certifications for same.
14. The successful bidder will provide a project schedule to the School District prior to starting work on the project and at least monthly updates thereafter.
15. The contract for this project is attached. The successful bidder shall be prepared to sign the contract within one day of the award of the contract by the Milford School Board, which date is anticipated to be **March 19, 2018**.
16. The School District shall pay the successful bidder for contract expenses on a monthly basis.
17. In addition to any other rights the School District may have, the School District shall have the right to declare the successful bidder in default if (a) the successful bidder becomes insolvent; (b) a voluntary or involuntary petition in bankruptcy is filed by or against the successful bidder.
18. The contract may be terminated by the School District for unsatisfactory performance of the contract. In instances of unsatisfactory performance, the School District shall give written notice to the successful bidder citing the unsatisfactory performance and giving the successful bidder fourteen (14) days to improve its performance to the satisfaction of the School District. If the performance of the successful bidder does not improve to the satisfaction of the School District, within the fourteen (14) day period, the School District may terminate the contract by providing written notice to the successful bidder, notifying it of final termination fourteen (14) days from the date of receipt of said notice.
19. Should termination of the contract occur, the School District may employ another contractor or contractors to complete the project, and, in the case of termination for unsatisfactory performance, hold the successful bidder herein responsible for any extra or added expense, loans, or damages suffered by the School District.
20. The successful bidder will appoint a qualified supervisor. Said person will be available to the School District's representative at all times. Said person will be responsible for enforcing with employees and contractors connected with the project the State of New Hampshire law prohibiting smoking on school property. Said person will be responsible for requiring employees and contractors connected with the project to be properly attired in shirts, long pants, and appropriate footwear (no bare torsos or shorts). Said person will be responsible for enforcing courteous conduct on the site with employees and contractors connected with the project (no swearing or vulgar language).
21. A firm completion date that is mutually agreed upon between the School District and the Contractor will be set.

22. The successful bidder will invoice the School District monthly, terms net 45, interest rate of 0% for late payment. Invoice payment shall be subject to the receipt of lien waivers and no payment shall become due absent applicable waivers. **The School District will hold 5% retainage on the total cost of the project for one year or until such time as as-built plans and maintenance and warranty documents have been delivered, whichever is later.**
23. The following information is provided with the best information available. Any omissions or deficiencies should be brought to the attention of the School District. Clarifications and amendments will be shared with all known bidders.

SECTION II

Project Summary

This project shall be “Turn-Key” in nature with firm completion date that is mutually agreed upon by the school district and the successful bidder.

The School District has experienced numerous repairs with windows at the Middle School. Many windows do not seal properly, resulting in a loss of heat or cooling. Due to the condition of the windows, the School District has decided to replace all of the exterior windows in the building. Attached is the specifications developed by David Laurin, Architect. All window conditions shall be verified in the field. If the contractor needs to come back after school hours to complete a thorough inspection of the window systems, they will need to coordinate with the Director of Buildings and Grounds for access to the building. The School District will entertain Window systems from Efco, Kawneer, Pella, Marvin or approved equal, being made of aluminum or fiberglass.

SECTION III

Bid Specifications

1) General Conditions:

The successful bidder shall have visited the site of the proposed work in order to fully acquaint and familiarize himself with conditions as they exist and the character of the operations to be carried out under the scope of this contract and make such on-site and subsurface investigations as he may see fit so that he understands fully the site, facilities, difficulties and any restrictions attending the execution of this work. The failure or omission of the successful bidder to receive or examine any form, instrument, and document or to visit the site and acquaint their company with the conditions there existing, shall in no way relieve him from any obligations with respect to the performance of the proposed contract and the work therein.

The successful bidder shall adhere to all applicable federal, state, and local codes, rules, and regulations, latest codes in effect.

The successful bidder shall provide any and all dumpsters, storage containers, and any equipment to be utilized by the Contractor and any of their sub-contractors for the duration of this project.

The successful bidder shall obtain any and all permits, licenses, and permissions required for the project at the successful bidder’s expense.

The School District is in possession of and using the premises. Contractors shall schedule their work and material deliveries to cause as little interference as possible with the School District's normal use of the building. Should any site work be conducted while school is in session, the fullest consideration will be given to students and staff safety after consultation with School District Officials.

Testing may be required by the School District to determine that materials or workmanship provided meet the specified requirements. The employment of a testing laboratory shall in no way relieve the successful bidder of his obligation to perform all work in accordance with contract requirements. The testing laboratory shall procure all samples and specimens, shall provide all necessary testing equipment and personnel and make all deliveries of samples to the laboratory.

The School District shall be responsible for oversight of and payment for initial testing as indicated in the specifications. If retests are required because of failure, the successful bidder shall be responsible for the costs of retesting.

Technical Specifications/Scope of Work:

SECTION 08 51 13 ALUMINUM WINDOWS Series 3502 Thermal AW-PG50-HS Grade Horizontal Sliding Windows PART 1 GENERAL

1.01 Work Included

A. Furnish and install aluminum architectural windows or approved equal, complete with hardware and related components as shown on drawings and specified in this section.

B. All windows shall be EFCO® Series 3502 Thermal AW-PG50-HS Horizontal Sliding, or Approved Equal.

1. A sample window, 36" (914 mm) x 24" (610 mm) single unit, as per requirements of Architect.

2. Test reports documenting compliance with requirements of Section 1.05.

C. Glass and Glazing

1. All units shall be factory glazed.

D. Single Source Requirement

1. All products listed in Section 1.02 shall be by the same manufacturer.

1.02 Laboratory Testing and Performance Requirements

A. Test Units

1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/WDMA/CSA 101/I.S.2/A440-08 and manufacturer's standard locking/operating hardware and insulated glazing configuration.

2. Thermal test unit sizes shall be 72" (1828 mm) x 48" (1219 mm). Unit shall consist of a single horizontal sliding window.

B. Test Procedures and Performances

1. Windows shall conform to all AAMA/WDMA/CSA 101/I.S.2/A440-08 requirements for the window type referenced in 1.01.B. In addition, the following specific performance requirements shall be met.

2. Life Cycle Testing

A. Test in accordance with AAMA 910. There shall be no damage to fasteners, hardware parts, support arms, activating mechanisms, or any other damage that would cause the window to be inoperable. Air infiltration and water resistance tests shall not exceed

specified requirements.

3. Air Infiltration Test

- A. With window sash closed and locked, test unit in accordance with ASTM E 283 at a static air pressure difference of 6.24 psf (299 Pa).
- B. Air infiltration shall not exceed .10 cfm/SF (.50 l/s•m²) of unit.

4. Water Resistance Test

- A. With window sash closed and locked, test unit in accordance with ASTM E 331/ASTM E 547 at a static air pressure difference of 12.0 psf (575 Pa).
- B. There shall be no uncontrolled water leakage.

5. Uniform Load Deflection Test

- A. With window sash closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 50.0 psf (2394 Pa), positive and negative pressure.
- B. No member shall deflect over L/175 of its span.

6. Uniform Load Structural Test

- A. With window sash closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 75.0 psf (3591 Pa), both positive and negative.
- B. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage that would cause the window to be inoperable.

7. Forced Entry Resistance

- A. Windows shall be tested in accordance to ASTM F 588 or AAMA 1302.5 and meet the requirements of performance level 40.

8. Condensation Resistance Test (CRF)

- A. Test unit in accordance with AAMA 1503.1.
- B. Condensation Resistance Factor (CRF) shall not be less than 58 (frame) when glazed with 0.24 center of glass U-Factor. (See chart at end of section).

9. Condensation Resistance (CR)

- A. With ventilators closed and locked, test unit in accordance with NFRC 500-2010.
- B. Condensation Resistance (CR) shall not be less than 42 when glazed with 0.24 center of glass U-Factor. (See chart at end of section).

10. Thermal Transmittance Test (Conductive U-Factor)

- A. With ventilators closed and locked, test unit in accordance with NFRC 100-2010.
- B. Conductive thermal transmittance (U-Factor) shall not be more than 0.45 BTU/hr•ft²•°F (2.55 W/m²•K) when glazed with 0.24 center of glass U-Factor. (See chart at end of section).

GLASS COMPARISION CHART				
GLASS	C.O.G.²	U-Factor	FRAME CRF¹	CR¹
1" IG	0.24	0.45 BTU/hr.ft. ⁰ f (2.55w/m ² .K)	58	42

- 1. U-Factor and Condensation Resistance (CR) are based on a nominal size of 59" (1500 mm) x 47" (1200 mm) with two lites of glass using NFRC-100, and 500 - 2010.
- 2. Intercept® Spacer.
- 3. Based on AAMA 1503.1

C. Project Wind Loads

- 1. The system shall be designed to withstand the following loads normal to the plane of the

wall:

- A. Positive pressure of 25 psf (____ Pa) at non-corner zones.
- B. Negative pressure of 25 psf (____ Pa) at non-corner zones.
- C. Negative pressure of 25 psf (____ Pa) at corner zones.

1.07 Quality Assurance

- A. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.05.
- B. Test reports shall be accompanied by the window manufacturer’s letter of certification, stating the tested window meets or exceeds the referenced criteria for the appropriate window type listed.

1.08 References

1.09 Submittals

- A. Contractor shall submit shop drawings; finish samples, test reports, and warranties.
 - 1. Samples of materials as may be requested without cost to owner, i.e., metal, glass, fasteners, anchors, frame sections, mullion section, corner section, etc.
- B. An NFRC Component Modeling Approach (CMA) generated label certificate shall be provided by the manufacturer. The label certificate shall be project specific and will contain the thermal performance ratings of the manufacturer’s framing combined with the specified glass, and the glass spacer used in the fabrication of the glass, at NFRC standard test size as defined in table 4-3 in NFRC 100-2010.

1.10 Warranties

A. Total Window Installation

- 1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
- 2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at their expense during the warranty period.

B. Window Material and Workmanship

- 1. Provide written guarantee against defects in material and workmanship for 5 years from the date of final shipment.

C. Glass

- 1. Provide written warranty for insulated glass units that they will be free from obstruction of vision as a result of dust or film formation on the internal glass surfaces caused by failure of the hermetic seal due to defects in material and workmanship.
- 2. Warranty period shall be for 10 (ten) years.

D. Finish

- 1. Warranty period shall be for 10 years from the date of final shipment.
- 2. Provide organic finish warranty based on AAMA standard 2605.

PART 2 PRODUCTS

2.01 Materials

A. Aluminum

1. Extruded aluminum shall be 6063-T6 alloy and tempered.

B. Hardware

1. Concealed plunger lock in the meeting rail with a flush mounted actuating handle.
2. Sash shall ride on steel ball bearing rollers and a raised track, so dirt will not interfere with normal operation.

C. Weather-Strip

1. All primary weather-strip shall be Q-Lon® or equal.

D. Glass

1. Insulated glass shall be 1" thick with a center of glass U-Factor of 0.24 constructed as follows:

- a. Exterior lite ¼" thick, clear color, tempered glass with a surface coating of SB 60 Low E on the number 2 surface.
- b. Air space of 1/2 inch argon filled.
- c. Interior lite ¼" thick, clear color, tempered glass.

E. Thermal Barrier

1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
2. Sills are thermally broken with thermal struts, consisting of glass reinforced polyamide nylon, mechanically crimped in raceways extruded in the exterior and interior extrusions. Other thermally broken members can use the latest technology in two-part, high-density polyurethane. A nonstructural thermal barrier is unacceptable.

2.02 Fabrication

A. General

1. All aluminum frame and sash extrusions shall have a minimum wall thickness of .062" (1.5 mm). Frame sill members shall have a minimum wall thickness of .094" (2.3 mm).
2. Depth of frame shall not be less than 3 1/4" (82 mm).
3. Mechanical fasteners, welded components, and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and vent corners.
4. All frame members shall be able to accommodate separate interior and exterior finishes and colors.

B. Frame

1. Frame components shall be mechanically fastened.
2. Frame and sash shall have a continuous interlock at the meeting rail.

C. Sash

1. Sash vertical members shall telescope into the sash horizontals and be mechanically fastened.
2. The sash shall be single or double weather-stripped.

D. Screens

1. Half screens only shall be permitted. The screen shall not be surface mounted.
2. Screen frames shall be extruded aluminum.
3. Screen mesh shall be aluminum.

E. Glazing

1. All lites (both sash and fixed) of the horizontal sliding window shall be inside glazed and weeped.
2. All units shall be glazed with the manufacturer's standard sealant process provided the glass is held in place by a removable, extruded aluminum, glazing bead. The glazing bead must be isolated from the glazing material by a gasket.
3. All units shall be glazed with a minimum of 1/2" glass bit.

F. Finish

1. Organic

- a. Finish all exposed areas of aluminum windows and components with 70% PVDF fluoropolymer Ultrapon. Color shall be Dark Bronze.

AA Description Description AAMA Guide Spec.

AA-M12-C42-R1X 70% PVDF Ultrapon™ 2605-98

PART 3 EXECUTION

3.01 Inspection

A. Job Conditions

1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface, and are in accordance with approved shop drawings.

3.02 Installation

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.

B. Plumb and align window faces in a single plane for each wall plane, and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.

C. Adjust windows for proper operation after installation.

D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.03 Anchorage

- A. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.

3.04 Protection and Cleaning

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general contractor.

EFCO is a registered trademark of EFCO Corporation. Q-Lon is a registered trademark of Schlegel Corporation. Ultrapon and Ultraflur are trademarks of EFCO Corporation.

SECTION 08 51 13 FIBERGLASS WINDOWS
ALL ULTREX Horizontal Sliding Windows
PART 1 GENERAL

1.1 All Ultrex® Glider window complete with hardware, glazing, weather strip, insect half screen, grilles-between-the-glass, jamb extension, sheet rock return, j-channel and standard or specified anchors, trim and attachments.

1.2 Related Sections

1.3 References

1.4 System Description

Product	Air Tested to PSF	Water Tested to psf	Design Pressure (DP)	Certification Rating	Max Overall Width		Max Overall Height	
					in	mm	in	mm
Integrity All Ultrex Glider	1.57	6.0	40	LC-PG40-HS	53 1/2	(1359)	59 1/2	(1511)
Integrity All Ultrex Glider	1.57	6.0	40	LC-PG40-HS	71 1/2	(1816)	29 1/2	(749)
Integrity All Ultrex Glider	1.57	6.0	40	LC-PG40-HS	71 1/2	(1816)	41 1/2	(1054)
Integrity All Ultrex Glider	1.57	4.6	30	LC-PG30-HS	71 1/2	(1816)	59 1/2	(1511)
Integrity All Ultrex Glider Triple Sash	1.57	3.8	25	LC-PG25-HS	95 1/2	(2426)	29 1/2	(749)
Integrity All Ultrex Glider Triple Sash	1.57	3.8	25	LC-PG25-HS	95 1/2	(2426)	59 1/2	(1511)
Integrity All Ultrex Sliding Fixed Window	1.57	7.5	50	LC-PG50-FW	59 1/2	(1511)	71 1/2	(1816)

1.5 Submittals

A. Shop Drawings: Submit shop drawings under provision of Section 01 33 23.

B. Product Data: Submit catalog data under provision of Section 01 33 23.

C. Samples:

1. Submit corner section under provision of section 01 33 23.

2. Specified performance and design requirements under provisions of Section 01 33 23.

D. Quality Control Submittals: Certificates: submit manufacturer’s certification indicating compliance with specified performance and design requirement under provision of section 01 23 33.

1.6 Quality Assurance

A. Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions for information on:

3. Egress, emergency escape and rescue requirements

4. Basement window requirements

5. Windows fall prevention and/or window opening control device requirements.

1.7 Delivery

A. Comply with provisions of Section 01 65 00

B. Deliver in original packaging and protect from weather.

1.8 Storage and Handling

A. Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01 66 00.

1.9 Warranty

A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects from ten (10) years from the original date of purchase.

B. Hardware another non-glass components are warranted to be free from manufacturing defects for ten (10) years from the original date of purchase.

PART 2 PRODUCTS

2.1 Manufactured Units

A. Description: All Ultrex® Glider (and related Triple Sash Glider) as manufactured by Integrity Windows and Doors, Roanoke, Virginia.

2.2 Frame Description

A. Interior:

1. Pultruded reinforced fiberglass (Ultrex®)

2. 0.070 (2mm) inch thick

B. Total frame depth: 3 3/32 (79mm) inches

1. Standard jamb depth: 2 (51mm) inches

C. Frame Expander accessory is an insert kit shipped as ready-to-install.

1. Insert kit includes four fabricated frame expander components, including head-jamb, sill and both jamb components.

2. Included in both 1” and 3” frame expander options.

2.3 Sash Description

A. Pultruded reinforced fiberglass (Ultrex®)

1. 0.070 (2mm) inch thick

B. Composite sash thickness:

1. 15/16 (24mm) inch

2.4 Glazing

A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.

B. Glazing Method: 11/16 (17mm) inch

C. Glass Type: Low E1, E2, E3, or E3/ERS air or Argon gas

D. Glass Type Options: Obscure Glass or California Fire Glass (Annealed exterior and tempered interior glazing configuration)

E. Glazing Seal: Silicone bead at exterior and vinyl glazing seal to interior

F. Glazing Option: STC/OITC upgrade.

2.5 Mulling

2.5.1 Standard Mulling

A. Directional mull limits: 3 wide by 1 unit high; Rough Opening not to exceed 114 x 60 (2896mm x 1524mm)

B. Directional mull limits: 2 wide by 2 units high; Rough Opening not to exceed 72 x 78 (1829mm x 1981mm)

2.5.2 Reinforced Mulling

A. Directional mull limits: 3 wide by 1 unit high; Rough Opening not to exceed 114 x 60 (2896mm x 1524mm)

B. Directional mull limits: 2 wide by 2 units high; Rough Opening not to exceed 72 x 78 (1829mm x 1981mm)

2.6 Finish

A. Exterior: Ultrex® (Pultruded fiberglass)

1. Factory baked on acrylic urethane

2. Meets AAMA 624-10 requirements

B. Interior: Ultrex® (Pultruded fiberglass)

1. Factory baked on acrylic urethane

C. Color: Bronze exterior with Bronze interior

2.7 Hardware

- A. Sash lock: High pressure zinc die-cast cam lock and keeper
 - 1. Finish: Phosphate coated and electronically painted
 - 2. Color: Oil Rubbed Bronze with Bronze interior, Matte Black with Ebony interior.
 - 3. Optional colors: Satin Nickel
 - 4. Two locks on units with rough opening height greater than 30 (762mm) inches
- B. Sash pull: Zinc die cast contoured sash lifts
 - 1. Color: White, Bronze or Ebony (Matches interior finish)
 - 2. Optional colors: White, Bright Brass, Satin Nickel, Oil Rubbed Bronze, Almond Frost, and Matte Black
- C. Tilt latches: Ergonomic tilt latch attached to sash to help with removal of window for cleaning
 - 1. Meeting Stile Tilt Latch Color: White, Bronze or Ebony (Matches interior finish)
 - 2. Jamb Side Tilt Latch Color: White on Stone White interior, Black on Bronze and Ebony interior.
- D. Sash stop kit: Available as a field applied option to limit sash travel
 - 1. ABS material
 - 2. Color: White on Stone White Interior, Black on Bronze and Ebony Interior
 - 3. Head jamb is pre-drilled to ensure proper placement
- E. Vent stops: Available as a factory option
 - 1. Injected molded nylon
 - 2. Color: White
 - 3. Vent stops limit the sash operation when activated and allow normal operation when deactivated
- F. Factory-applied Window Opening Control Device for operating units per ASTM F2090-10: A system consisting of an acetal lever housed in an acetal shell on lower meeting stile of the operating sash and a stop on the lower rail of the stationary sash.
 - 1. Available on all sizes
 - 2. Color: White, Black

2.8 Weather Strip

- A. Color: Beige for Stone White interiors, Black for Bronze and Ebony interiors
- B. Sill weather strip is foam filled vinyl bulb
 - 1. Rigid HDPE bumps surround bulb for easy operation and tear resistance
- C. Frame weather strip is a combination hollow vinyl bulb and flexible wand
- D. Stationary meeting stile interlock has a rigid ABS with flexible alcryn seals

2.9 Jamb Extension

- A. Standard 2" (51mm) jambs
 - 1. Optional factory-installed jamb extension: 4 9/16 (116mm) inch and 6 9/16 (167mm) inch

2.10 Insect Half Screen

- A. Factory-installed half screen
 - 1. Screen mesh 18 x 16
 - 2. Charcoal fiberglass
- B. Rolled form aluminum frame finish
 - 1. Colors: Stone White; Pebble Grey; Bronze; Evergreen; Cashmere; and Ebony

2.11 Grilles-Between-the-Glass (GBG)

2.12 Accessories and Trim

- A. Installation Accessories:
 - 1. Factory-installed vinyl nailing fin/drip cap at head, sill and side jambs
 - 2. Installation brackets for masonry applications
 - 3. Mullion kit: standard mullion kit for field assembly of related units available in horizontal, vertical and 2-wide and/or 2-high configurations. Kit includes: Instruction, interior and exterior mull covers, mull plugs and brackets
 - 4. Sheet rock return

5. J-channel
6. Flush Fin
- B. Exterior Casing:
 7. Non-integral to the unit. Fastened to the exterior wall with barb and kerf
 8. 2 inch (51mm) inch Brick Mould available as a full surround or with sill nosing
 9. 3 ½” (89mm) flat Casing available as a full surround or with sill nosing. Also available with 1” (25mm) Ranch Style header and sill overhang.
10. Colors: Stone White, Evergreen, Bronze, Pebble Gray, Cashmere, Ebony.

Part 3 Execution

3.1 Examination

- A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions as required in Section 01 71 00. Report frame defects or unsuitable conditions to the General Contractor before proceeding,
- B. Acceptance of Condition: Beginning installation confirms acceptance of existing conditions.

3.2 Installation

- A. Comply with Section 01 73 00.
- B. Assemble and install window/door unit(s) according to manufacturer’s instruction and reviewed shop drawing.
- C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.
- D. Install accessory items as required.
- E. Use finish nails to apply wood trim and mouldings.

3.3 Field Quality Control

- A. Remove visible labels and adhesive residue according to manufacturer’s instruction.
- B. Unless otherwise specified, air leakage resistance tests shall be conducted at a uniform static pressure of 75 Pa (~1.57 psf). The maximum allowable rate of air leakage shall not exceed 2.3 L/sm² (~0.45 cfm/ft²).
- C. Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating using “Procedure B” – cyclic static air pressure difference. Water penetration shall be defined in accordance with the test method(s) applied.

3.4 Cleaning

- A. Remove visible labels and adhesive residue according to manufacturer’s instruction.
- B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.

3.5 Protecting Installed Construction

- A. Comply with Section 07 76 00.
- B. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.