

SECTION 08381

SOUND CONTROL WINDOWS

(Bullet Resistant)

1.0 GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish and install **FACTORY PREGLAZED** Sound Control Windows specified herein and per the locations and orientations shown on the Contract Documents-site installation of glazing into frames is not acceptable. Verify all dimensions and requirements and coordinate with other trades as necessary
1. Sound Control Windows, Frames, Stops, Glazing, Sound Absorbing Material and Concealed Fasteners
 2. Installation of Sound Control Windows.

1.2 RELATED SECTIONS:

- A. Specified elsewhere:
1. Section _____: Administrative Provisions
 2. Section _____: Finish painting of window frames

1.3 QUALITY ASSURANCE

- A. Acoustic Performance:
1. The manufacturer shall submit certified laboratory test results indicating a Sound Transmission Class (STC) rating of at least 48 when tested in accordance with ASTM E 90-90 and E413-87.
- B. Warranty:
1. The window systems shall be guaranteed against defective materials and/or workmanship for a period of one (1) year from date of acceptance of the installations.

1.4 SUBMITTALS

- A. Submit shop drawings, manufacture's data, and product performance certification in accordance with General Conditions.

- B. Shop drawings:
 - 1. Provide full size details of frames and sound gasket components.
 - 2. Provide installation details applicable to the construction in which the Sound Control Windows will be installed.
 - 3. Indicate construction, sizes, thicknesses, reinforcing, anchoring, and finishes of all materials.
- C. Manufacturer's data:
 - 1. Provide illustrations and descriptions of all frame details which will be exposed on window units for design review by Architect and project Acoustics Consultant.
 - 2. Provide complete installation and adjustment information.
- D. Certification:
 - 1. Provide certified laboratory test reports from a Navlap certified acoustics laboratory showing that a fully operating installation of the specific Sound Control Window assembly proposed for installation has been measured in accordance with ASTM E 90-90 and has met or exceeded the scheduled STC ratings. The test results shall be representative of the performance of the proposed Sound Control Window assembly.
- E. Notification of work completion:
 - 1. After installation and prior to acceptance testing, provide a letter to the Architect and the project Acoustics Consultant, co-signed by the General Contractor's project representative, indicating that all Sound Control Window Units have been installed and gaskets have been adjusted to form an airtight seal around the full perimeter of each window unit panel.

1.5 SEQUENCING AND DELIVERY

- A. Upon award of contract and before commencement of building construction, submit to the Architect any special requirements (scheduling, opening conditions, etc.) which are necessary to assure successful installation.

- B. Protect pre-glazed window units during transit, handling and storage to prevent damage, soiling, and deterioration.
- C. Deliver preglazed window units to General Contractor with complete installation drawings and instructions for installation by the General Contractor.
- D. Deliver pre-glazed window units to project site only after the building has been closed in. Store window units in the building in a dry location and stack in accordance with manufacture's instructions.
- E. Protect pre-glazed window unit assemblies, especially sound gaskets, from damage before, during and after their installation.

2.0 PRODUCTS

2.1 APPROVED MANUFACTURER'S:

- A. The acoustical window units shall be QuietLite Acoustical Windows manufactured by NoiseBarriers, LLC., Libertyville, Il.

Manufacturer:

Noise Barriers, LLC
 872 South Milwaukee, #139
 Libertyville, Il. 60048

Phone: (847) 362-7318
 Fax: (847) 362-7319
 www.noisebarriers.com

Contact:
 John Finnegan

Phone: (315) 682-3821
 Fax: (315) 682-3868
 johnfinnegan@msn.com

2.2 MATERIALS

- A. Window frames shall be 1 _ in. thick fabricated from not less than 12 ga. steel, reinforced and filled with sound-absorbing acoustic fill, Inside and outside corners shall be mitered and interlocked to hairline measurements, made square, continuously welded , and ground smooth, flush, and invisible.
- B. Stops shall be in 1 in. thick and readily removable, fabricated from not less than 16 gauge rolled steel sections predrilled and aligned with frame to form tight square acoustical joint. Stop fasteners shall be concealed.
- C. Acoustic seals for glazing shall be vibration-isolating resilient gaskets, U-shaped and continuous of santoprene UV grade 65-75 Duro black. Self-contained, sound-absorptive interior perimeter of not less than 22 gauge steel

shall be perforated and prefinished black. Desiccant material shall be incorporated into multiple glazed units.

- D. Assembly of acoustic window units including frames, stop, glazing, acoustic seals, sound-absorbing material, and concealed fasteners shall take place at the factory to insure required noise reduction is achieved. Glazing shall not need to be removed to facilitate fastening or anchoring at the job site.
- E. Finish – Unless otherwise specified, steel window frame assemblies shall receive one shop coat of gray primer. Stainless steel shall not be painted.
- F. Lights for single-and double-glazed units shall be minimum in. laminated safety glass consisting of multi-layer clear float with clear plastic interlayer. Bullet-resistant glazing (if required) shall be certified to meet UL 752 specifications. **Note:** This project requires one (1) layer of Bullet Resistant Level 1 laminated safety glass and one (1) layer of 3/8” laminated safety glass in a window unit 8” thick.

2.3 ACOUSTICAL PERFORMANCE CHARACTERISTICS

- A. At least 10 days prior to bidding, manufacturer shall submit laboratory test data certifying Sound Transmission Loss and Sound Transmission Class (STC) when tested in accordance with ASTM E 90-90 of not less than the following:

Window Type	<u>Sound Transmission Loss, db</u>						STC
	<u>Octave Band Center Frequency, Hz</u>						
	125	250	500	1K	2K	4K	
Double glazed	37	44	47	45	52	53	48

2.4 FABRICATION

- A. Assemble windows using all welded construction conforming to pertinent requirements of AWS D1-1. Assembly and adjustment of window units, frames, stop, glazing, acoustic seals, sound-absorbing material and concealed fasteners shall be performed at the factory. Each entire unit shall be shipped to the job site ready for installation and subsequent operation.
- B. Reinforce as required to withstand operating loads.
- C. Painting and cleaning:

1. On surfaces which are inaccessible after assembly, apply protective coating of the manufacturer's standard rust-inhibitive primer.
2. After assembly, and prior to inspection, thoroughly clean all surfaces.
3. After inspection, and completion of repairs and revisions required by the inspection, apply a shop coat of rust inhibitive primer to exposed surfaces.

3.0 EXECUTION

3.1 EXAMINATION

Before commencing installation, examine the substrate and surrounding conditions to verify that there is nothing to prevent proper and timely execution of the installation. Start of work shall indicate acceptance of the substrate and surrounding conditions.

3.2 INSTALLATION

- A. Installation of window units, seals, and final adjustments for window operation and for the design attenuation shall be performed by factory trained personnel under the supervision of the manufacturer.
- B. Install items plumb (or as indicated on the contract documents), straight, square, level, and in their proper elevation, plane and location.
- C. Adjust all gaskets to achieve an airtight seal around the entire perimeter of each window unit.
- D. After installation, adjust windows for smooth and easy operation.
- E. All work shall be complete in every detail and the finished work shall be clean for Architect prior to final acceptance.

3.3 ADJUST AND CLEAN

- A. Check and readjust operation finish hardware in work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work.
- B. Immediately after erection, sand smooth all rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

3.4 ACCEPTANCE TESTING

- A. Before acceptance of the installed Sound Control Window Units, and at any time within the project guaranteed period, the Owner, Architect, or project Acoustics Consultant may request that acoustic performance testing of the installations be performed. Ideally, this testing shall be performed by an independent acoustics consultant at the expense of the Installing Contractor under the supervision of the project Acoustics Consultant, and expenses for the project Acoustics Consultant to supervise the testing shall be paid by the Installing Contractor. Alternatively, the project Acoustics Consulting may be independently retained by the Installing Contractor to perform this testing.

- B. The installations shall be deemed acceptable if the Sound Control Window Units meet or exceed a Noise Isolation Class (NIC) which is not more than six (6.) points below the specified STC rating.

END OF SECTION