SECTION 08 56 73

ACOUSTICAL VINYL WINDOWS

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\*\* NOTE TO SPECIFIER \*\* Harvey Building Products ; Acoustical Vinyl Windows.  
.  
This section is based on the products of Harvey Building Products , which is located at:  
1400 Main St.  
Waltham, MA 02451-1689  
Toll Free Tel: 800-822-0437  
Email: [request info (architects@harveybp.com)](https://arcat.com/rfi?action=email&company=Harvey%252BBuilding%252BProducts%252B&message=RE%253A%2520Spec%2520Question%2520(08565har)%253A%2520&coid=32985&spec=08565har&rep=&fax=)  
Web: <https://www.harveywindows.com>   
 [ [Click Here](https://arcat.com/company/harvey-building-products-32985) ] for additional information.  
Harvey Building Products is the leading manufacturer of insulating windows and doors and the premier wholesale distributor of quality building products in the Northeastern part of the United States. Distribution is primarily professional contractors and builders via strategically located branches as well as an extensive fleet of company owned trucks.  
Harvey Acoustic windows help make homes quieter with noise reduction technology, but as an added bonus they also achieve significant heating and cooling cost savings. Our Acoustic windows integrate our premium storm window and special glazing to help make your living space peaceful and comfortable.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Acoustical Double Hung Vinyl Windows.
    2. Acoustical Casement Vinyl Windows.
    3. Acoustical Awning Vinyl Windows.
    4. Acoustical Fixed Casement Vinyl Windows.
    5. Acoustical Rolling Vinyl Windows.
    6. Acoustical Picture Vinyl Windows.
    7. Window Accessories.
  1. RELATED SECTIONS

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

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 04 27 23 - Cavity Wall Unit Masonry.
    3. Section 06 10 00 - Rough Carpentry.
    4. Section 06 20 00 - Finish Carpentry.
    5. Section 07 46 16 - Aluminum Siding.
  1. REFERENCES

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

* + 1. American Architectural Manufacturers Association (AAMA):
       1. AAMA/WDMA/CSA 101/I.S.2/A440-05, A440-08, and A440-11 - NAFS - North American Fenestration Standard Specification for windows, doors, and skylights.
       2. AAMA 701/702 - Combined Voluntary Specifications for Pile Weather strip and Replaceable Fenestration Weather seals.
       3. AAMA 902 - Voluntary Specification for Sash Balances.
    2. ASTM International (ASTM):
       1. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
       2. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
       3. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
       4. ASTM E 413 - Classification for Rating Sound Insulation. (STC)
       5. ASTM E 547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Difference.
       6. ASTM E 1332 - Standard Classification for Determination of Outdoor-Indoor Transmission Class (OITC Rating)
       7. ASTM E 2190 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units.
       8. ASTM F 588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
    3. National Fenestration Rating Council (NFRC):
       1. NFRC 100/200/500 - Procedures for Determining Fenestration Product U-Factors, Solar Heat Gain Coefficient (SHGc), and Visible Transmittance at Normal Incidence (VT).
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Testing: Provide window units independently tested and found to be in compliance with AAMA/WDMA/CSA 101/I.S.2/A440-05, A440-08, or A440-11 performance standards.
     2. Acoustical Performance Testing: Provide window units independently tested and found to be in compliance as follows:
        1. STC Ratings: Tested in accordance with ASTM E 413.
        2. OITC Ratings: Tested in accordance with ASTM E 1332.
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Manufacturer's technical data, product descriptions.
        2. Preparation and installation instructions and recommendations.
        3. Storage and handling requirements and recommendations.
        4. Elevation for each style window specified indicating its size, glazing type, muntin type and design.
        5. Manufacturer's head, jamb and sill details for each window type specified.

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

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: Provide operating units of each style window specified.
       1. Verification samples may be operating scaled-down mock-ups of actual-size units.
       2. Operating hardware such as balances, sash locks and weather-stripping.
       3. Verification samples will be returned to manufacturer's representative at project closeout.
    3. Test Reports: Submit certified independent testing agency reports indicating window units meet or exceed specified performance requirements.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum ten years documented experience producing vinyl (PVC) windows.
     2. Installer Qualifications: Minimum 2 years documented experience on projects of similar size and acceptable to window manufacturer.
     3. Source Limitations: Obtain window units from one manufacturer through a single source.

\*\* 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 installation workmanship.
       1. Install in areas designated by Architect.
       2. Do not proceed with remaining work until workmanship and color are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
       4. Accepted mock-ups shall be comparison standard for remaining Work
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver windows to project site in undamaged condition; handle windows to prevent damage to components and to finishes.
     2. Store products in manufacturer's unopened packaging, out of direct sunlight or high temperature locations, until ready for installation.
  2. 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 absolute limits.
  3. WARRANTY
     1. Submit manufacturer's standard warranty against defects in workmanship and Materials.
        1. Aluminum or vinyl structural members, screening and component mechanical parts, including locks, keepers, balances and sash retainers, are warranted against defects in material and workmanship for a period of ten years.
        2. Aluminum members that have a baked enamel finish are warranted against blistering, peeling, flaking or checking under conditions of normal wear and service for a period of ten years.
        3. Insulating glass is warranted against material obstruction of transparency resulting from film formation or dust collection on the interior surfaces for a period of ten years.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Harvey Building Products , which is located at:  
         1400 Main St.  
         Waltham, MA 02451-1689  
         Toll Free Tel: 800-822-0437  
         Email: [request info (architects@harveybp.com)](https://arcat.com/rfi?action=email&company=Harvey%252BBuilding%252BProducts%252B&message=RE%253A%2520Spec%2520Question%2520(08565har)%253A%2520&coid=32985&spec=08565har&rep=&fax=);Web: <https://www.harveywindows.com>

\*\* 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 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Select and edit the following Acoustical Window paragraphs to include the products required for the project. Delete those not required.

* 1. ACOUSTICAL DOUBLE HUNG WINDOWS - STC 40 / OITC 33 and STC 44 / OITC 33
     1. Construction:
        1. Nominal 0.065 inch (1.7mm) frame thickness polyvinyl chloride (PVC) with butt joined and mechanically fastened corners. Sill thickness 0.078 inches (2mm). Both sash operable with a nominal 0.065 inch (1.7mm) wall thickness with miter cut and mechanically fastened corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Snap-on applied 3/4 inch (20mm) "J"
      2. Siding Attachment: Optional Snap-on applied "L" fin.

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.

\*\* NOTE TO SPECIFIER \*\* Select glazing option required from the following two paragraphs and delete the one not required..

* + - 1. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2 mm) and 3/32 inch (2.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Glazing secured to sash frame using a dual durometer glazing channel. Complies with ASTM E 2190. Storm Glazing shall be 1/8 inch (3.2 mm) nominal thickness glass.
      2. Glazing: STC 44: 7/8 inch (22mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Glazing secured to sash frame using a dual durometer glazing channel. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.
      3. Sash Balances: Factory calibrated block and tackle, complying with AAMA-902. Balance cords shall be anchored to locking terminal housings that lock in place when the sash is tilted in. Locking terminal and pivot bar system shall provide accurate alignment of the sash and the frame during operation.
      4. Sash Locks: Cam type locks anchored with screws driven through the sash rail and into extruded aluminum. Double locks when openings are 30-1/2 inches (774 mm) wide and greater.
      5. Weather Stripping: In compliance with AAMA 701.2.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Screen Options and delete the one not required.

* + - 1. Screens: Extruded aluminum frame with 18 x 16 charcoal finished fiberglass mesh.
      2. Screens: Extruded aluminum frame with 18 x 16 charcoal finish aluminum mesh.
      3. Storm Window: Aluminum storm window is placed in exterior screen track of the prime window frame with a 2 inch (51 mm) minimum air space between the exterior prime window glass and outboard storm window.
    1. Performance:
       1. Structural rating LC-PG45-H DW (DP45) - Test Size: 44 inches x 75 inches (1117mm x 1905mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08.
       2. Forced Entry: Type B, Grade 10 in accordance with ASTM F 588.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Thermal Transmittance paragraphs to suit the STC rating specified under Glazing above and delete the one that is not applicable.

* + - 1. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.50/ VT 0.53.
        2. Clear With Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.44/ VT 0.47.
        3. Low-E No Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.29/ VT 0.47.
        4. Low-E With Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.26/ VT 0.42.
        5. Low-E/Argon No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.27/ VT 0.42.
        6. Low-E/Argon With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.24/ VT 0.37.
      1. Thermal Transmittance STC 44: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.48/ VT 0.53.
        2. Clear With Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.43/ VT 0.47.
        3. Low-E No Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.31/ VT 0.45.
        4. Low-E With Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.28/ VT 0.40.
        5. Low-E/Argon No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.31/ VT 0.45.
        6. Low-E/Argon With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.28/ VT 0.40.
  1. ACOUSTICAL CASEMENT WINDOWS - STC 35/ OITC 29 and STC 40 / OITC 32
     1. Construction:
        1. Nominal 0.080 inch (2 mm) thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Integral 13/16 inch (21 mm) "J" fin pocket.
      2. Siding Attachment: Optional L-fin (Integral J w/ L-adapter).

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.

\*\* NOTE TO SPECIFIER \*\* Select glazing option required from the following two paragraphs and delete the one not required..

* + - 1. Glazing: STC 35: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190.
      2. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.
      3. Hinges: Maxim 14 series.
      4. Operator: Maxim 50 series.
      5. Weather Stripping: In compliance with AAMA 701.2.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Screen Options and delete the one not required.

* + - 1. Screens: Extruded aluminum frame with 18 x 16 charcoal finished fiberglass mesh.
      2. Screens: Extruded aluminum frame with 18 x 16 charcoal finish aluminum mesh.
      3. Storm Window: STC 40 Aluminum removable storm window is placed in the interior screen location of the prime window frame with a 1-3/8 inch (35 mm) minimum air space between the interior prime window glass and storm window.
    1. Performance:
       1. Structural Rating: CW-PG55 (DP 55) Test Size: 36 inches x 80 inches (914mm x 2032mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11.
       2. Forced Entry: Type B, Grade 10 in accordance with ASTM F 588.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Thermal Transmittance paragraphs to suit the STC rating specified under Glazing above and delete the one that is not applicable.

* + - 1. Thermal Transmittance STC 35: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.42/ R-Value 2.38/ SHGc 0.44/ VT 0.48.
        2. Clear With Grid: U-Factor 0.42/ R-Value 2.38/ SHGc 0.40/ VT 0.43.
        3. Low-E No Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.27/ VT 0.41.
        4. Low-E With Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.24/ VT 0.37.
        5. Low-E/Argon No Grid: U-Factor 0.28/ R-Value 3.57/ SHGc 0.27/ VT 0.41.
        6. Low-E/Argon With Grid: U-Factor 0.28/ R-Value 3.57/ SHGc 0.25/ VT 0.37.
      1. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.39/ VT 0.44.
        2. Clear With Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.36/ VT 0.39.
        3. Low-E No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.24/ VT 0.37.
        4. Low-E With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.22/ VT 0.33.
        5. Low-E/Argon No Grid: U-Factor 0.22/ R-Value 4.54/ SHGc 0.25/ VT 0.37.
        6. Low-E/Argon With Grid: U-Factor 0.22/ R-Value 4.54/ SHGc 0.22/ VT 0.33.
  1. ACOUSTICAL AWNING WINDOWS - STC 35/ OITC 29 and STC 40 / OITC 32
     1. Construction:
        1. Nominal 0.080 inch (2 mm) thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Integral 13/16 inch (21 mm) "J" fin pocket.
      2. Siding Attachment: Optional L-fin (Integral J w/ L-adapter).

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.

\*\* NOTE TO SPECIFIER \*\* Select glazing option required from the following two paragraphs and delete the one not required..

* + - 1. Glazing: STC 35: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190.
      2. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.
      3. Hinges: Maxim 13 series.
      4. Sash Locks: Maxim 24 Series single point locks.
      5. Weather Stripping: In compliance with AAMA 701.2.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Screen Options and delete the one not required.

* + - 1. Screens: Extruded aluminum frame with 18 x 16 charcoal finished fiberglass mesh.
      2. Screens: Extruded aluminum frame with 18 x 16 charcoal finish aluminum mesh.
      3. Storm Window: STC 40 Aluminum removable storm window is placed in the interior screen location of the prime window frame with a 1-3/8 inch (35 mm) minimum air space between the interior prime window glass and storm window.
    1. Performance:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Structural Rating Options and delete the one not required.

* + - 1. Structural Rating: LC-PG55 (DP 55). Test Size: 48 inches x 58 inches (1219 mm x 1473 mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11.
      2. Structural Rating: CW-PG50 (DP 50). Test Size: 60 inches x 32 inches (1524 mm x 812 mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11.
      3. Forced Entry: Type B, Grade 10 in accordance with ASTM F 588.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Thermal Transmittance paragraphs to suit the STC rating specified under Glazing above and delete the one that is not applicable.

* + - 1. Thermal Transmittance STC 35: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.43/ R-Value 2.32/ SHGc 0.44/ VT 0.48.
        2. Clear With Grid: U-Factor 0.43/ R-Value 2.32/ SHGc 0.40/ VT 0.43.
        3. Low-E No Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.27/ VT 0.41.
        4. Low-E With Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.24/ VT 0.37.
        5. Low-E/Argon No Grid: U-Factor 0.29/ R-Value 3.44/ SHGc 0.27/ VT 0.41.
        6. Low-E/Argon With Grid: U-Factor 0.29/ R-Value 3.447/ SHGc 0.25/ VT 0.37.
      1. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.39/ VT 0.44.
        2. Clear With Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.36/ VT 0.39.
        3. Low-E No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.24/ VT 0.37.
        4. Low-E With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.22/ VT 0.33.
        5. Low-E/Argon No Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.25/ VT 0.37.
        6. Low-E/Argon With Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.22/ VT 0.33.
  1. ACOUSTICAL FIXED CASEMENT WINDOWS - STC 35/ OITC 29 and STC 40 / OITC 32
     1. Construction:
        1. Nominal 0.080 inch (2 mm) thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Integral 13/16 inch (21 mm) "J" fin pocket.
      2. Siding Attachment: Optional L-fin (Integral J w/ L-adapter).

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.

\*\* NOTE TO SPECIFIER \*\* Select glazing option required from the following two paragraphs and delete the one not required..

* + - 1. Glazing: STC 35: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190.
      2. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.
      3. Weather Stripping: In compliance with AAMA 701.2.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Screen Options and delete the one not required.

* + - 1. Screens: Extruded aluminum frame with 18 x 16 charcoal finished fiberglass mesh.
      2. Screens: Extruded aluminum frame with 18 x 16 charcoal finish aluminum mesh.
      3. Storm Window: STC 40 Aluminum removable storm window is placed in the interior screen location of the prime window frame with a 1-3/8 inch (35 mm) minimum air space between the interior prime window glass and storm window.
    1. Performance:
       1. Structural Rating: C-C50 (DP 50) Test Size: 41 inches x 78 inches (1041mm x 1981mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11.
       2. Forced Entry: Type D, Grade 10 in accordance with ASTM F 588.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Thermal Transmittance paragraphs to suit the STC rating specified under Glazing above and delete the one that is not applicable.

* + - 1. Thermal Transmittance STC 35: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.44/ R-Value 2.27/ SHGc 0.54/ VT 0.59.
        2. Clear With Grid: U-Factor 0.44/ R-Value 2.27/ SHGc 0.48/ VT 0.53.
        3. Low-E No Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.33/ VT 0.51.
        4. Low-E With Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.30/ VT 0.45.
        5. Low-E/Argon No Grid: U-Factor 0.27/ R-Value 3.70/ SHGc 0.33/ VT 0.51.
        6. Low-E/Argon With Grid: U-Factor 0.27/ R-Value 3.70/ SHGc 0.30/ VT 0.45.
      1. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.48/ VT 0.54.
        2. Clear With Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.43/ VT 0.48.
        3. Low-E No Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.30/ VT 0.46.
        4. Low-E With Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.27/ VT 0.41.
        5. Low-E/Argon No Grid: U-Factor 0.21/ R-Value 4.76/ SHGc 0.30/ VT 0.46.
        6. Low-E/Argon With Grid: U-Factor 0.21/ R-Value 4.76/ SHGc 0.27/ VT 0.41.
  1. ACOUSTICAL ROLLING WINDOWS - STC 40/ OITC 33 and STC 44 / OITC 37
     1. Construction:
        1. Nominal 0.1 inch (2.5 mm) thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners at sill and butt joined mechanically fastened corners at head. Sash with a nominal 0.078 inch (2.0 mm) thickness with miter cut and mechanically fastened corners..

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Snap-on applied 3/4 inch (20 mm) "J".
      2. Siding Attachment: Optional Snap-on applied "L" fin.

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.

\*\* NOTE TO SPECIFIER \*\* Select glazing option required from the following two paragraphs and delete the one not required..

* + - 1. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4mm) inboard and outboard panes and a minimum 1/2 inch (13mm) sealed space between them. Insulating glass units secured to sash frame using a silicone sealant and rigid PVC glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.
      2. Glazing: STC 44: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2mm) and 1/4 inch (6.4 mm) inboard and outboard panes and a minimum 1/2 inch (13 mm) sealed space between them containing argon gas. Glazing secured to sash frame using a dual durometer glazing channel. Complies with ASTM E 2190. Storm Glazing shall be 3/16 inch (5 mm) nominal thickness glass.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.
    1. Performance:
       1. Structural Rating: HS-C40 (DP 40) - Test Size: 72 inches x 63 inches (1829 mm x 1600 mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-05
       2. Forced Entry: Type A Grade 10 in accordance with ASTM F 588.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Thermal Transmittance paragraphs to suit the STC rating specified under Glazing above and delete the one that is not applicable.

* + - 1. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.34/ R-Value 2.94/ SHGc 0.51/ VT 0.55.
        2. Clear With Grid: U-Factor 0.34/ R-Value 2.94/ SHGc 0.45/ VT 0.49.
        3. Low-E No Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.30/ VT 0.49.
        4. Low-E With Grid: U-Factor 0.26/ R-Value 3.84/ SHGc 0.27/ VT 0.43.
        5. Low-E/Argon No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.29/ VT 0.49.
        6. Low-E/Argon With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.26/ VT 0.43.
      1. Thermal Transmittance STC 44: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear Argon No Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.48/ VT 0.54.
        2. Clear Argon With Grid: U-Factor 0.33/ R-Value 3.03/ SHGc 0.43/ VT 0.48.
        3. Low-E/Argon No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.31/ VT 0.46.
        4. Low-E/Argon With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.28/ VT 0.41.
  1. ACOUSTICAL PICTURE WINDOWS - STC 40/ OITC 30
     1. Construction:
        1. Nominal 0.070 inch (1.8 mm) wall thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Snap-on applied 3/4 inch (20 mm) "J".
      2. Siding Attachment: Optional Snap-on applied "L" fin.

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.
      4. Glazing: STC 40: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2 mm) and 1/8 inch (3.2 mm) inboard and outboard panes and a minimum 5/8 inch (16 mm) sealed space between them. Insulating glass units secured to sash frame using a sealant in the corners and glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 1/8 inch (3.2 mm) nominal thickness glass.
      5. Weather Stripping: In compliance with AAMA 701.2.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.
    1. Performance:
       1. Structural Rating: CW-PG45 (DP45) - Test Size: 70 inches x 70 inches (1778 mm x 1778 mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08.
       2. Forced Entry: Type D Grade 10 in accordance with ASTM F 588.
       3. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear With Grid: U-Factor 0.30/ R-Value 3.33/ SHGc 0.49/ VT 0.53.
        2. Low-E No Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.32/ VT 0.52.
        3. Low-E With Grid: U-Factor 0.23/ R-Value 4.34/ SHGc 0.29/ VT 0.47.
        4. Low-E/Argon No Grid: U-Factor 0.21/ R-Value 4.76/ SHGc 0.31/VT 0.52.
        5. Low-E/Argon With Grid: U-Factor 0.21/ R-Value 4.76/ SHGc 0.28/ VT 0.47.
  1. ACOUSTICAL PICTURE WINDOWS - STC 44/ OITC 31
     1. Construction:
        1. Nominal 0.1 inch (2.5 mm) thickness polyvinyl chloride (PVC) with miter cut and fusion welded corners at sill and butt joined mechanically fastened corners at head. Sash with a nominal 0.065 inch (1.7 mm) thickness with miter cut and fusion welded corners.

\*\* NOTE TO SPECIFIER \*\* Siding attachment options. Select one of the following two paragraphs and delete the one not required.

* + - 1. Siding Attachment: Optional Snap-on applied 3/4 inch (20 mm) "J".
      2. Siding Attachment: Optional Snap-on applied "L" fin.

\*\* NOTE TO SPECIFIER \*\* Select frame color options required. Delete interior and exterior frame colors not required.

* + - 1. Color: White Vinyl.
      2. Color: Almond Vinyl.
      3. Color: Medium Bronze Vinyl.
      4. Glazing: STC 44: 7/8 inch (22 mm) nominal thickness insulating glass units. 1/8 inch (3.2 mm) and 1/8 inch (3.2 mm) inboard and outboard panes and a minimum 5/8 inch (16 mm) sealed space between them. Insulating glass units secured to sash frame using a sealant in the corners and glazing bead. Complies with ASTM E 2190. Storm Glazing shall be 5/32 inch (4 mm) nominal thickness glass.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Grid options and delete three if required or delete all if grids are not required.

* + - 1. Grids: Nominal 5/8 inch (16 mm) Colonial contour grids between glass (GBG) dividers.
      2. Grids: Nominal 5/8 inch (16 mm) Colonial flat grids between glass (GBG) dividers.
      3. Grids: Nominal 5/8 inch (16 mm) Diamond flat grids between glass (GBG) dividers.
      4. Grids: Nominal 1 inch (25 mm) Colonial contour grids between glass (GBG) dividers.
    1. Performance:
       1. Structural Rating: CW-PG45 (DP45) - Test Size: 70 inches x 70 inches (1778 mm x 1778 mm) in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08.
       2. Forced Entry: Type D Grade 10 in accordance with ASTM F 588.
       3. Thermal Transmittance STC 40: The following values are in accordance with NFRC 100/200/500.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional glazing types and delete those not required.

* + - * 1. Clear No Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.53/ VT 0.59.
        2. Clear With Grid: U-Factor 0.31/ R-Value 3.22/ SHGc 0.47/ VT 0.53.
        3. Low-E No Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.32/ VT 0.52.
        4. Low-E With Grid: U-Factor 0.24/ R-Value 4.16/ SHGc 0.29/ VT 0.47.
        5. Low-E/Argon No Grid: U-Factor 0.22/ R-Value 4.54/ SHGc 0.31/VT 0.52.
        6. Low-E/Argon With Grid: U-Factor 0.22/ R-Value 4.54/ SHGc 0.28/ VT 0.47.

\*\* NOTE TO SPECIFIER \*\* Select window accessories required and delete those not required.

* 1. WINDOW ACCESSORIES
     1. Mullions:

\*\* NOTE TO SPECIFIER \*\* Select Mulled options required from the following three paragraphs and delete the one not required. (Certain configurations and sizes not available for mulling).

* + - 1. Non-Structural Combination Mullion: horizontal or vertical members, factory or field applied.
      2. Casement, Awning, and Fixed Casement are available with common jamb mullions.
      3. Structural Mullion: DP 50-120 mph performance rated mullion for areas requiring conformance to increased wind loads (replacement windows only), field applied only.

\*\* NOTE TO SPECIFIER \*\* Select the exterior casing options required and delete those not required. Delete entire paragraph if casings are not required.

* + 1. Exterior Casings: Factory installed casing options.
       1. 2-3/8 inch (60 mm) brick mold, nominal thickness 0.080 inches (2 mm); 4 Sides.
       2. 2-3/8 inch (60mm) brick mold, nominal thickness 0.080 inches (2mm) with 1 inch (25 mm) sill nosing.
       3. 3 inch (76 mm) flat casing, nominal thickness 0.080 inches (2 mm); 4 sides.
       4. 3 inch (76 mm) flat casing, nominal thickness 0.080 inches (2mm) with 1 inch (25 mm) sill nosing.

\*\* NOTE TO SPECIFIER \*\* Select the extension jamb options required and delete those not required. Delete entire paragraph if e not required. (Certain configurations and sizes not available for mulling).

* + 1. Interior Casings: Factory installed interior casing options.
       1. Material
          1. Pre-Primed.
          2. Clear Pine.
       2. Size:
          1. 4-9/16 inch (116 mm) depth (2 x 4 wall construction).
          2. 6-9/16 inch (167 mm) depth (2 x 6 wall construction).
          3. Custom Depth: \_\_\_\_\_\_\_\_\_\_.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until openings and substrates have been properly prepared.
      2. Verify rough opening size is of sufficient size to receive window unit and complies with manufacturer's requirements for opening clearances. Verify that sill plate is level.
      3. If 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 window unit in accordance with manufacturer's printed instructions including the following:
         1. Apply sealant around perimeter of window unit between nail fin and exterior sheathing of wall. Refer to Division 7 Section "Joint Sealants".
         2. Install window units square, level and plumb. Center window unit in opening and secure window unit by nailing through nail fin and screw through jambs as indicated in manufacturer's instructions.
         3. Flash window in accordance with AAMA's "Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction".
         4. Insulate between window frame and rough opening with insulation. Refer to Division 7 Section "Building Insulation".
   4. ADJUSTING
      1. Adjust units for smooth operation without binding or racking. Adjust sash locks and screens for smooth operation.
   5. CLEANING AND PROTECTION
      1. Clean soiled surfaces and glass prior to substantial completion.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION