This Specifications Sheet utilizes the Construction Specifications Institute (CSI) MasterFormat™. The 1995 edition numbers are listed first; *numbers in italics are from the 2004 edition.* Options and dimensions are indicated by brackets [ ]. Specifier Notes precede specification text; edit for project requirements or delete in final copy. Metric conversion is calculated by multiplying: Number of Inches x 25.4 = Millimeters, rounded off. Manufactured by Kolbe & Kolbe Millwork Co., Inc., Wausau, Wisconsin.

SECTION 08525 *or 08 52 00.01*
HERITAGE SERIES STERLING SINGLE HUNG, DOUBLE HUNG, STUDIO, BAY, AND TRANSOM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood Sterling Double Hung [single hung] [fixed studio] [bay] [transom] windows complete with hardware, glazing, weatherstripping, [screens] [jamb extensions] [removable grilles] [grilles-in-the-airspace] [true divided lites] [performance divided lites] [combination storm/screen] and standard or specified anchorages, trim, attachments, and accessories. [Mulled transoms] [Stand alone transoms] are also available.

1.02 RELATED SECTIONS

SPECIFIER NOTE: Revise sections below to suit project requirements and to include desired options.
Consult state and local building codes for specific requirements.

The MasterFormat 1995 edition numbers are listed first; *numbers in italics are from the 2004 edition.*

- Section 01330 *or 01 33 00* – Submittal Procedures.
- Section 01620 *or 01 62 00* – Product Options.
- Section 01630 *or 01 25 00* – Product Substitution Procedures.
  (2004 title: Substitution Procedures.)
- Section 01650 *or 01 65 00* – Product Delivery Requirements.
- Section 01660 *or 01 66 00* – Product Storage and Handling Requirements.
- Section 01730 *or 01 73 00* – Execution.
- Section 01740 *or 01 74 00* – Cleaning.
  (2004 title: Cleaning and Waste Management.)
- Section 01760 *or 01 76 00* – Protecting Installed Construction.
- Section 06100 *or 06 10 00* – Rough Carpentry.
- Section 06200 *or 06 20 00* – Finish Carpentry.
- Section 07210 *or 07 21 00* – Building Insulation.
  (2004 title: Thermal Insulation.)
- Section 07900 *or 07 92 00* – Joint Sealants.
- Section 08800 *or 08 80 00* – Glazing.
- Section 09900 *or 09 90 00* – Paints and Coatings.
  (2004 title: Painting and Coating.)

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM E283-04' - Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.

2. ASTM E330-02' - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
3. ASTM E547-00' - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
4. ASTM E1425-07' or AAMA 1801 - Certification of Acoustical Performance.
5. ASTM F588-07' or AAMA 1302.5 - Standard for Forced-Entry Resistance.
6. ASTM E 1996-04' - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Windborne Debris in Hurricanes.
7. ASTM E 1886-04' - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
8. ASTM E2190-08' - Standard Specification for Insulating Glass Unit Performance and Evaluation.

B. American Architectural Manufacturers Association/Window and Door Manufacturers Association (AAMA/WDMA), American National Standards Institute/Window and Door Manufacturers Association (ANSI/WDMA), Canadian Standards Association (CSA).
   1. AAMA/WDMA/CSA 101/I.S.2/A440-05', 101/I.S.2/A440-08' - Standard / Specification for Windows, Doors and Skylights.
   2. WDMA I.S. 4-07'A Water Repellant Preservative Treatment for Millwork.

C. National Fenestration Rating Council (NFRC)
   1. NFRC 100-2004' & 2010' - Determining Fenestration U-Factor.
   2. NFRC 100-2004' & 2010' - Test Procedure for Thermal Transmittance of Fenestration.
   3. NFRC 200-2004' & 2010' - Determining Fenestration SHGC & Tv.
   4. ASTM E1423-06' - Determining Thermal Transmittance of Fenestration Systems.
   5. NFRC 500-2010' - Determining Fenestration Product Condensation Resistance.

D. WDMA Hallmark Program
   1. WDMA Hallmark Program Procedural Guide C.S.-1.

E. Consumer Product Safety Commission (CPSC)
   1. CPSC 16 CFR 1201 - Safety Glazing Standards.
   2. ANSI Z-97.1 - Safety Glazing Standards for Tempered Glass.

1.04 SYSTEM DESCRIPTION

See the Technical Information section at the beginning of this manual for the Air, Water, Structural Test Reports and Energy Rating Reports. For updated reports, please visit our website http://www.kolbe-kolbe.com.

A. Minimum Design and Performance Requirements
   1. The required design pressure(s) for windows and doors is _____ psf.
   2. Air, water, structural, and forced entry resistance shall be at levels which meet the specified design pressure as per AAMA/WDMA/CSA 101/I.S.2/A440-05', 101/I.S.2/A440-08'.
   3. Unique unit's performance, when not tested, may be addressed by a manufacturer's Statement of Qualification.
   4. Mullion design shall be adequate for required design pressure.

B. Energy Ratings
   All units tested are one lite, residential, LoE^2-270, argon filled, with Kolbe ID No. as listed on the NFRC Label adhered to each unit. Values are certified per NFRC and units are labeled per state requirements.
   1. Unique, non-listed units may have U & SHGC determined by NFRC procedures and listed on a manufacturer's Statement of Qualification.

C. Emergency Escape and Rescue:

1. Larger widths/heights with standard hardware will comply with emergency escape and rescue requirements of Building Codes (greater or equal to 5.7 Sqft. of clear opening).

1.05 SUBMITTALS

A. Shop Drawings: Submit shop drawings in accordance with Section 01330 Submittal Procedures *or Section 01 33 23 – Shop Drawings, Product Data, and Samples.*
B. Product Data: Submit catalog data in accordance with Section 01330 Submittal Procedures *or Section 01 33 23 – Shop Drawings, Product Data, and Samples.*
C. Samples: Submit corner section in accordance with Section 01330 Submittal Procedures *or Section 01 33 23 – Shop Drawings, Product Data, and Samples.* Include glazing system, quality of construction, specified finish, and color.
D. Installation Instructions.
E. Quality Control Submittals: Certificates: Submit performance test results reported by independent laboratory or manufacturer's Statement of Qualification indicating compliance with specified performance and design requirements.

1.06 QUALITY ASSURANCE

A. WDMA Hallmark Program. Be sure to check the Air-Water-Structural Test Reports Manual on our website (www.kolbe-kolbe.com) for the current listing.
B. IGMAC-Insulating Glass Manufacturer's Association Canada.
C. Kolbe & Kolbe Quality Assurance.
D. [If required: Mock Up: Provide sample installation for field testing unit performance requirements for approval - Contractor to perform tests in accordance with AAMA 502-02 using Method A and/or Method B.]

1.07 DELIVERY, STORAGE AND HANDLING

A. Proceed in accordance with Section 01650 – Product Delivery Requirements, Section 01660 – Product Storage and Handling Requirements, and Installation Instructions.
B. Deliver in original packaging, store in an upright position off the ground in a clean, dry area. Protect from weather and construction activities.
C. Prime or seal wood surfaces, including surfaces to be concealed by wall construction if more than 30 days will expire between delivery and installation.

1.08 WARRANTY

A. Glass: See Kolbe & Kolbe Glass Warranty for details and exclusions.
B. Pre-finishing: See Kolbe & Kolbe Finish Warranty for details and exclusions.
C. Product Defects: See Kolbe & Kolbe Product Warranty for details and exclusions.
D. International: See Kolbe & Kolbe International Warranty for details and exclusions.

These warranties are available on our website at http://www.kolbe-kolbe.com

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

For Individual and Mulled Window Units Only:

A. Description: Double Hung [30° bay unit] [45° bay unit] windows, with tilt-in and removable sash, fixed studio units, and transoms are factory assembled, as manufactured by Kolbe & Kolbe Millwork Co., Inc., Wausau, Wisconsin. Website: www.kolbe-kolbe.com.

B. Units available: [Standard Performance] [High Performance] [Impact Performance]. ***Note:*** Individual windows within a bay unit can be rated Standard, High, or Impact Performance, but the unit as a whole is only available as Standard Performance.

2.02 MATERIALS

Edit for Project Requirements.

A. Frame: Constructed of kiln-dried pine, with pine interior stops and mull casings on mulled units, water repellent, preservative treated in accordance with WDMA I.S. 4-07'A. As standard, wood units have 1-15/16 inch (51mm) brickmould and standard sill nosing (1-1/4 inch (32mm) projected) applied.
   1. Jamb thickness: 3/4 inch (19mm) at the side jambs and head.
   2. Standard overall jamb with extensions applied: 4-9/16 inch (116mm).
   3. Sill thickness: 1-3/16 inch (30mm) with 14° slope [Standard transom sill is 3/4 (19mm) inch thick.] [Beveled transom sill is 1-5/32 inch (29mm) thick.]
   4. Corner Construction: Head and sill are dadoed with side jambs fastened by staples.
   5. Other wood species available: [Pine (standard)] [Alder] [Fir] [Maple] [Oak] [Cherry] [Mahogany] [Walnut] [Bamboo] [other] on exposed wood frame components
   6. [FSC Certified wood requiring Chain of Custody (COC) label].
   7. Prep for stool.

   For Bay Units Only:

   8. Head and sill support blocking for [30°] [45°] bay.
   9. Mull post casing: 1/2 inch (13mm) thick.

B. Sash: Constructed of kiln dried pine, water repellent, preservative treated in accordance with WDMA I.S. 4-07'A.
   1. Thickness: 1-23/32 inch (44mm).
   2. Corner Construction: mortise-and-tenon.
   3. Other wood species available: [Pine (standard)] [Alder] [Fir] [Maple] [Oak] [Cherry] [Mahogany] [Walnut] [Bamboo] [other] on exposed wood sash components
   4. [FSC Certified wood requiring Chain of Custody (COC) label].
   5. Interior glazed.
   6. [Impact Performance:]
      a. Glue all mortise & tenon joints on the sash.
      b. Additional silicone is used.
      c. Extra kerfs are put in all sash.
      d. The bottom sash stiles are made of maple with a pine veneer.
      e. For fixed units, hidden reinforced accessories are used on the sash.
      f. Extruded aluminum interlock on top check rail.
      g. Extruded aluminum hardware channel on bottom check rail.

C. Surface Finish:
   1. Exterior Finish - Wood:
      a. Standard: Exterior wood is to be treated bare wood with a primer coat applied.
      b. [Exterior wood is to be treated bare wood with no primer coat applied.]
      c. [Optional Exterior Paint Colors: Exterior wood is to have K-Kron II three-step coating process.] Color is to be [Abalone] [Alabaster] [Antique Red] [Basil] [Bay Leaf] [Beige] [Butterscotch] [Camel] [Cape Cod] [Chutney] [Coal Black] [Frosted Jade] [Gingersnap] [Green Tea Leaf] [Hartford Green] [Kiwi] [Manchester] [Merlot] [Mudpie] [Mystic Ivy] [Natural Cotton] [Patriotic Blue] [Pumpkin Spice] [Rustic] [Sand] [Slate] [Spiced Vinegar] [Timberwolf] [Truffle] [Ultra Pure White] [Waterford] [White].
      d. [Specify a custom paint color.]
   2. Interior Finish - Wood:

a. [Interior wood is to be treated bare wood without stain or top coat.]
b. [Interior wood is to be treated bare wood with an acrylic based double clear coat.]
c. [Interior wood is to have a water based stain with a clear water based top coat. Stain color is to be [Cherry] [Chestnut] [Coffee Bean] [Library Red] [Light Oak 998] [Red Wheat] [Spiced Walnut] [Sunset Oak] [Wheat].
d. [Specify a custom stain color.]
e. [Interior wood is to have a primer coat only.]
f. [Interior wood is to have acrylic type paint applied. The interior paint color is to be [Abalone] [Beige] [Bright White] [Ivory Tusk] [Natural Cotton] [Silk] [Ultra Pure White].
g. [Specify a custom paint color.]

D. Hardware:
1. Latches & Locks: Top rail tilt latches are made of a nylon plunger and housing colored beige. Sash locks are a pick resistant cam lock and keeper constructed of high-pressure die-cast zinc with aluminum back plate. Powder Coat Finish: Standard is Clay [White] [Beige] [Brass] [Antique Brass] [Satin Nickel] [Antique Nickel] [Rustic Umber] [Matte Black] [Oil Rubbed]. Operation of the sash lock will actuate beige polycarbonate latches that are housed in an internal hardware channel. (Standard and high performance units will have a beige ABS hardware channel; Impact rated units will have anodized extruded aluminum.) The top check rail is fitted with a high impact polymer interlock which engages into the hardware channel on the bottom check rail. The interlock color is to match the exterior aluminum frame color.
2. Balancing system: Spring loaded block and tackle mechanical balancing system with polyester cord. Mill finish balance cases are hidden by the wood wrapped jambliner closure to the interior and by the extruded aluminum jambliner covers to the exterior. Zinc die-cast pins engage and release balance clutches allowing the sash to be tilted in and removed for cleaning.
3. Optional Sash Lift Handles: Constructed of high-pressure corrosion resistant die-cast zinc; for field application. Finishes available to match lock finishes.

E. Weatherstripping:
1. Top Rail: Beige rigid weatherable PVC weather seal holder with flexible fins installed with two rows of weatherstripping. The two rows are a beige PVC bulb.
2. Top Sash Stile: Beige rigid weatherable PVC and flexible PVC stile weatherseal.
3. Top Check Rail Interlock: One row of beige bulb weatherstrip.
4. Bottom Rail: Beige dual durometer polyolefin with arloc slipcoat bulb.
5. Sill: Rigid weatherable, Beige UV resistant PVC water seal/weatherstrip. Passes drop dart test.
6. Head and sill pads: Closed cell PVC foam pads.
7. Jambliners: Made of weatherable, Beige UV resistant PVC with beige foam filled bulb vertical weatherstrip. Jambliner is hidden by the wood wrapped jambliner closure to the interior and an extruded aluminum jambliner cover to the exterior. Passes drop dart test.

The following are optional materials and accessories. Edit for project requirements.

F. Screens: Sent loose as standard on all units.
1. Surrounds: [Full] [Half-screen] [Retractable Screen – charcoal fiberglass screen cloth only].
2. Screen cloth: BetterVue® Black fiberglass is standard iVis (improved visibility insect screen) 10% better insect protection, airflow, and clearer view. [UltraVue® Black fiberglass eVis (excellent visibility insect screen) 20% better insect protection, 15% better airflow, and clearer view] [Bright aluminum (not available with Brass screen frame)] [Charcoal aluminum].

3. Screen Channels: .024 inch (0.6mm) thick roll formed aluminum.
4. Attachment: Spring loaded plungers.
5. Corner Construction and Finish Color: Screen channel colors to match exterior colors. Channels are joined and reinforced with a corner key. Screens are available for segment head and 1/2 circle top units.

G. Jamb Extensions: Provide factory installed jamb extensions up to 12 inches (305mm) for wall thickness indicated or required. Jamb extensions over 12 inches (305mm) are sent loose to be field installed.
   1. Finish: Match interior frame finish.
   2. Other wood species available: [Pine (standard)] [Alder] [Fir] [Maple] [Oak] [Cherry] [Mahogany] [Walnut] [Bamboo] [other]

H. Removable Grilles:
   1. Surround: Full, constructed of kiln-dried pine [7/8 inch (22mm)] [1-1/8 inch (29mm)].
   2. Pattern: [rectangular] [custom lite layout].
   3. Finish: Bare wood.
   4. Profile: [beveled-standard] [ovolo].
   5. Other wood species available: [Pine (standard)] [Alder] [Fir] [Maple] [Oak] [Cherry] [Mahogany] [Walnut] [Bamboo] [other]

I. Grilles-in-the-airspace: Installed inside the hermetically sealed glass unit.
   1. Material: [aluminum flat bars, 5/8 inch (16mm) wide] [aluminum profiled bars, 3/4 inch (19mm) wide, available for units with 7/8 inch (22mm) or 9/16 inch (14mm) insulating glass] [Brass pencil bars, 5/16 inch (8mm) wide, available for units with 7/8 inch (22mm) insulating glass] [Pewter pencil bars, 5/16" (8mm) wide, available for units with 7/8 inch (22mm) insulating glass].
   2. Color options: [3/4 inch Profiled bars: White, Beige, Sand, Rustic, Hartford Green, Chutney, Light Wood & Dark Wood faux finishes] [5/8" Flat bars: White, Beige, Sand, Rustic, Hartford Green, Chutney, Light Wood & Dark Wood faux finishes, Brass] [Two-tone contour or flat grilles available with light or dark wood faux finishes to the interior and White to the exterior.

J. Performance Divided Lites (PDL): PDL system utilizes a permanently adhered wood grille bar to the interior and a permanently adhered aluminum grille bar to the exterior glass.
   1. Material: Muntin is constructed of .050 inch (1mm) thick 6063 extruded aluminum alloy on exterior, pine on interior [5/8 inch (16mm) wide] [7/8 inch (22mm) wide] [1-1/8 inch (29mm) wide] [1-3/4 inch (44mm) wide] [2-1/4 inch (57mm) wide] [4-1/2 inch (114 mm)].
   2. Pattern: [rectangular] [custom lite cuts-subject to approval of Kolbe & Kolbe Millwork Co., Inc.].
   3. Spacer bar between the glass. Finish: Standard [Champagne]. Optional [Aluminum mill-finish] [Black finish].
   4. Exterior surface finish: To match frame and sash exterior. (Some limitations apply for PDL bars on radius and special grid patterns.)

K. True Divided Lites (TDL): Utilizes 5/8" insulating glass.
   1. Material: Muntin is constructed of kiln-dried pine 1-1/8 inch (29mm) wide.
   2. Pattern: [rectangular] [custom lite cuts-subject to approval of Kolbe & Kolbe Millwork Co., Inc.].
   3. Exterior surface finish: To match exterior finish of unit.

L. Accessories & Trim
   1. Casings:
      a. [1-15/16 inch (51mm) profiled brickmould] [1-15/16 inch (51mm) flat casing] [3-1/2 inch (89mm) profiled brickmould] [3-1/2 inch (89mm) flat casing] [3-1/2 inch (89mm) profiled brickmould with backband; overall face dimension 4-1/4 inch (108mm)] [3-1/2 inch (89mm) flat casing with backband; overall face dimension 4-1/4 inch (108mm)] [4 inch (102mm) flat casing] [5-1/2 inch (140mm) flat casing] [no casing]
   2. Nosings:

a. Sill nosing: Standard nosing projects 1-1/4 inch (32mm). [2 inch (51mm) projected sill nosing] [2-3/4 inch (70mm) projected sill nosing [2 inch (51mm) x 2 inch (51mm) historical sill nosing] [Extended sill horns] [No sill nosing]

2.03 GLAZING

A. Glass:
1. Standard one lite IG is 7/8 inch (23mm) with LoE^2-270, argon filled.
2. Standard IG or single glazed has standard design pressure of 50 psf (DP 50). See Website www.kolbe-kolbe.com for high performance ratings.
3. High altitude IG has open breather tube.
4. All glass is select quality complying with FS-DD-G-451D.
5. IG complies with IGCC and ASTM E2190-08'.

For Individual and Mulled Window Units Only:

6. For operating double hung units, Standard Impact Resistant Laminated Glass is Lami 28 for insulating glass.
7. For fixed double hung studio units, Standard Impact Resistant Laminated Glass is Lami 13 for single glazed – Lami 27 for insulating glass.

B. Glazing Methods:
1. Single glazed are all silicone-glazed.
2. Operating units and fixed units have K-Glaze with 3/16 inch (5mm) wide glazing tape and primary silicone on #1 surface along sight line paired with latex sealant on #4 surface at bottom wood glazing bead.
3. High Performance option operating units and fixed units have silicone-glaze structural silicone bedding sealant on #1 surface with a 0.5 inch (13mm) bite, and supplemental siliconized latex sealant on #4 surface at bottom wood glazing bead.
4. [Impact glazed units]: [S-glaze for IG units utilizes a straight vinyl bracket installed into a kerf in the sash and silicone] See Website www.kolbe-kolbe.com for Impact performance ratings.]

C. Glass Options:
1. [LoE^2 240 –Glare Control] [LoE^3 366]. [ThermaPlus LoE glass has a [LoE²-270] [LoE²-366] option on surface 2 and a LoE hard coat on surface 4 plus permanent coating (interior pane)].
2. Patterned, bronze, or gray-lite.
3. Tempered or laminated glass.
4. Protective film.
5. Other options: Standard to the industry. [With] [Without] argon gas. (Argon gas may not be included in units to be installed in or shipping through high altitude areas.)

For Individual and Mulled Window Units Only:

6. Large missile impact laminated [LoE^2] [Gray tint] [Bronze tint].

D. Glazing Bead Options: Beveled profile is standard. Options: [ovolo] [square] [Modified for Impact Certified Units]

2.04 ACCESSORIES AND TRIM

Edit for project requirements.

A. Installation Accessories:

For Individual, Mulled Window Units, and Transoms:

1. Galvanized steel installation clips (number required to meet DP20 may be attached to unit). Kolbe & Kolbe recommends that all units with exterior casing be installed using installation clips.
2. Mull anchors.

3. Strip mull anchors.

For Bay Units Only:

4. Insulated platform: [Kolbe insulated platform with plywood deck, available for [30°] [45°] Bays with a 4-9/16 inch (116mm) jamb. Exterior trim cap is applied.] [Head and seat board is pine veneer one side with oak veneer on the other side.] [Insulated platform by others.]
5. Decorative brackets.
6. Cable support system.
7. Exterior trim cover: filler block, made of wood for a [30° Bay] [45° Bay].

2.05 COMBINATION STORM AND SCREEN

Combination storm and screen units may be used in addition to sealed insulating glass where triple glazing is required.

A. StormGuard Combination Storm and Screen:
   1. Frame: 0.045-inch (1.1mm) thick extruded aluminum. Finishes to match exterior colors.
   2. Hardware: Spring loaded locking pins to hold moveable panel in position.
   3. Weatherstripping: White pile weatherstripping.
   4. Storm Panel: Select quality glass with aluminum frame. Finish color to match frame color.
   5. Screen Panel: 18 × 16 wires-per-inch screen cloth [Fiberglass: Charcoal] [Bright Aluminum] [Aluminum: Black].

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Before installation, verify that openings are plumb and square and of proper dimension. Report frame defects or unsuitable conditions to the General Contractor before proceeding.
B. Acceptance: Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install windows according to manufacturer's installation instructions, reviewed shop drawings and in accordance with Section 01730 – Execution.
B. Install sealant and related backing materials at perimeter of assembly in accordance with Section 07900 – Joint Sealers.
C. Install accessory items as required.

3.03 ADJUSTING AND CLEANING

A. Adjust operable sash to work freely with hardware functioning properly. Re-adjust at completion of the project if directed.
B. Remove visible labels.
C. Leave windows in a job clean condition. Final cleaning of glass will be done in accordance with Section 01740 – Cleaning.

3.04 PROTECTION

A. Cover windows, in accordance with Section 01760 – Protecting Installed Construction, during spray painting or other construction operations (such as muratic acid washing after completion of masonry) that might cause damage.

END OF SECTION