



## Addendum # 3

Date: April 5, 2019

Project: Window Replacement Phase IV at Price Hall

Contract: PC-18-044

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The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

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### **Requests for Information:**

1. *Possible to have a copy of the shop drawings from previous north wing 1<sup>st</sup> floor window replacement or confirm window manufacturer and series of window used on the project. If EFCO 402 system was used as specified in the project manual please confirm.*

The 1<sup>st</sup> Floor window replacement manufacturer was produced by YKK AP America, Inc with series YES 45 TU Storefront System. Please see the attached submittal. YKK AP America, Inc is an approved alternate manufacturer.

2. *During our site review we observed no extruded receptor installed at the 1<sup>st</sup> floor window sill condition. Drainage weep holes were drilled into the bottom rail of the storefront system as well. Are we to match the existing condition at the site or are to provide the receptor pan indicated on the bid documents.*

Provide the receptor pan indicated on the drawings.

3. *The existing windows on the first floor north wing have a drip edge installed at the head. The drip edge is not indicated on the bid documents. Are we to provide a drip edge?*

Provide head flashing as indicated on the drawings.

4. *Please provide specifications for the flooring to be installed in the Multi Purpose Rm.*

This will be answered in this addendum.

5. *Please confirm Acoustic Ceilings are not to be included in the work?*

Acoustic ceiling replacements are to be done by separate HVAC replacement contract. The window replacement contractor is to set row of ceiling tiles nearest to exterior walls furnished by HVAC contractor.

**Revisions / Clarifications:**

None

**Changes to Drawings:**

None

**Changes to Specifications:**

1. *096500 Resilient Flooring* – Added to project. See attached specification.

END

**SECTION 09 65 00**  
**RESILIENT FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Resilient tile flooring.
- B. Resilient base and pre-molded internal / external corners.
- C. Installation accessories.

**1.02 REFERENCE STANDARDS**

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- C. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile.
- D. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing.
- E. ASTM F1344 - Standard Specification for Rubber Floor Tile.
- F. ASTM F1861 - Standard Specification for Resilient Wall Base.
- G. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; [www.baaqmd.gov](http://www.baaqmd.gov).
- H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- I. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings.
- J. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; [www.aqmd.gov](http://www.aqmd.gov).

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plan.
- D. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- E. Verification Samples: Submit two samples, 12x12 inch in size illustrating color and pattern for each resilient flooring product specified.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Protect roll materials from damage by storing on end.

**1.05 FIELD CONDITIONS**

- A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

**1.06 EXTRA MATERIALS**

- A. See Section 01 6000 - Product Requirements, for additional provisions.
- B. Provide 50 sq ft of flooring, 20 lineal feet of base, of each type and color specified.

## **PART 2 PRODUCTS**

### **2.01 TILE FLOORING**

- A. Vinyl Composition Tile: Homogeneous, with uniform color extending throughout thickness, and:
  - 1. Minimum Requirements: Comply with ASTM F 1066, of Class corresponding to type specified. Composition 1, class 2.
  - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648.
  - 3. Size: 24" x 24" inch.
  - 4. Thickness: 0.125 inch.
  - 5. Pattern: Marbleized.
  - 6. Color: Blue Cloud (to be verified by client).
  - 7. Manufacturers:
    - a. Armstrong World Industries, Inc; Product Designer Essentials: [www.armstrong.com](http://www.armstrong.com).
    - b. Substitutions: See Section 01 60 00 - Product Requirements.

### **2.02 RESILIENT BASE**

- A. Resilient Base: ASTM F 1861, Type TP, rubber, thermoplastic; Style A, Straight; and Style B, Cove, and as follows:
  - 1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
  - 2. Height: 4 inch,
  - 3. Thickness: 0.125 inch thick.
  - 4. Finish: Satin.
  - 5. Length: Roll.
  - 6. Color: To be selected by Architect from manufacturer's full range.
  - 7. Accessories: Premolded external corners and end stops.
  - 8. Manufacturers:
    - a. Burke Mercer; Product Rubber Myte: [www.burkeflooring.com](http://www.burkeflooring.com).
    - b. Substitutions: See Section 01 60 00 - Product Requirements.

### **2.03 ACCESSORIES**

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
  - 1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.
- C. Moldings and Edge Strips: Metal.
- D. Filler for Coved Base: Plastic or as recommended by manufacturer.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive resilient flooring.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

- D. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits:
  - 1. Moisture emission rate: Not greater than 3 lb per 1000 sq ft per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
  - 2. Alkalinity: pH range of 5-9.

### **3.02 PREPARATION**

- A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings.
- B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is cured.
- D. Clean substrate.
- E. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

### **3.03 INSTALLATION**

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

### **3.04 TILE FLOORING**

- A. Install in accordance with manufacturer's instructions.
- B. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Set flooring in place, press with heavy roller to attain full adhesion.
- E. Lay flooring with joints and seams parallel or as shown on plans to building lines to produce symmetrical tile pattern.
- F. Install tile to basket weave pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- G. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- H. Install edge and termination strips at unprotected or exposed edges, where flooring terminates, and where indicated. Before installation of flooring, secure metal strips with stainless steel screws.
- I. Scribe flooring to walls, columns, cabinets, and other appurtenances to produce tight joints.
- J. Install feature strips and floor markings where indicated. Fit joints tightly.

**3.05 RESILIENT BASE**

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 48 inches between joints.
- B. At external and internal corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

**3.06 CLEANING**

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax resilient flooring products in accordance with manufacturer's instructions.

**3.07 PROTECTION**

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

**END OF SECTION 09 65 00**

**PROJECT:** DSU Price Bldg. 1st Floor North Window Replacement

**SUBMITTAL NUMBER:** 08 41 00.02 Product Data Aluminum Framed Entrances, Store Fronts, & Windows

**DATE:** 5/12/16

**ARCHITECT:** StudioJaed  
2500 Wrangle Hill Road  
Bear, DE 19701

**CONTRACTOR:** BRS Consulting, Inc  
PO Box 237  
Harrington, DE 19952

**SUBCONTRACTOR:** Service Glass  
PO Box 373  
Seaford, DE 19973

**SUPPLIER:**

**MANUFACTURER:** YKK

**SPECIFICATION REF:** 08 41 00, 08 41 13.10, 08 41 13.20

**DRAWING NUMBER:** A3.1, A3.2

**DETAIL NUMBER:** Various

**COMMENTS:** Shop Drawings under different submittal cover see 08 41 00.01

**MATCH PRODUCT AT  
PREVIOUS PROJECT -  
SOUTH END**

### **BRS Consulting, Inc.**

It is hereby certified that the Equipment and/or Material shown and marked in this submittal is proposed to be incorporated into Contract Number **FD-15-086** and is in compliance with the Contract Drawings and Specifications and is submitted for Owner/Architect /Engineer approval.

Date: 5-12-16

Certified by: **Redacted - Original on File**

#### SHOP DRAWING REVIEW STATUS

- ☐ REVIEWED\*
- ☒ REVIEWED WITH NOTATIONS\*
- ☐ REVISE AND RESUBMIT\*\*
- ☐ REJECTED

\* Fabrication may be undertaken. Action does not authorize changes to Contract Sum unless stated in separate letter to Change Order.

\*\* Fabrication may not be undertaken. Resubmit corrected copies for review. Correction shall be limited to items marked.

Reviewing is only for conformance with the design concepts of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the sites; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures or construction; and for the coordination of the work of all trades. All deviations from the Contract Documents shall be noted by the Contractor on this submission.

Date: 5/16/16

By: Andy Moore

STUDIOJAED  
www.studiojaed.com



# > YES 45 TU

Thermally Broken Center Set Storefront

## SYSTEM DESCRIPTION:

YES 45 TU is a thermally broken, center set, flush glazed storefront system for insulating glass. The system is thermally broken by means of a poured and debridged pocket that employs a patented process, ThermaBond Plus®, to greatly improve adhesion of the polyurethane to the extruded aluminum. Combining science and technology, ThermaBond Plus resolves the problem of adhesion and the resultant dry shrinkage associated with typical poured and debridged systems.

## OPTIONS & FEATURES:

- 2" Face by 4-1/2" Overall Depth
- Outside or Inside Glazed
- Accepts 1" Insulating Glass
- High Performance Sill Flashing
  - ◆ No Blind Seals
  - ◆ Tall back leg for enhanced water resistance
  - ◆ Patented 3 point attachment of end dam
- Patented Screw Spline or Shear Block Assembly
- ThermaBond Plus Thermal Break
- Model 20D/35D/50D Single Doors up to 4'-0" x 8'-0"
- Model 20D/35D/50D Pairs up to 8'-0" x 8'-0"





# > YES 45 TU Center Set

## Thermally Broken Storefront System Specifications

### 1.01 SUMMARY

- A. Section Includes: Aluminum Storefront Systems.
  - 1. YKK AP Series YES 45 TU Center Set Aluminum Storefront System.
- B. Related Sections:
  - 1. Glass and Glazing: Refer to Division 8 Glass and Glazing Section for glass and glazing requirements

### 1.02 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide aluminum storefront systems that comply with performance requirements indicated, as demonstrated by testing manufacturer's assemblies in accordance with test method indicated.
  - 1. Air Infiltration: Completed storefront systems shall have 0.06 CFM/FT<sup>2</sup> (1.10 m<sup>3</sup>/h·m<sup>2</sup>) maximum allowable infiltration when tested in accordance with ASTM E 283 at differential static pressure of 6.24 PSF (299 Pa).
  - 2. Water Infiltration: No uncontrolled water when tested in accordance with ASTM E 331 at test pressure differential of: 10 PSF (479 Pa) (or when required, field tested in accordance with AAMA 503). Fastener Heads must be seated and sealed against Sill Flashing on any fasteners that penetrate through the Sill Flashing.
  - 3. Wind Loads: Completed storefront system shall withstand wind pressure loads normal to wall plane indicated:
    - a. Exterior Walls:
      - 1) Positive Pressure:
      - 2) Negative Pressure:
    - b. Interior Walls (Pressure Acting in Either Direction):
  - 4. Deflection: Maximum allowable deflection in any member when tested in accordance with ASTM E 330 with allowable stress in accordance with AA Specifications for Aluminum Structures.
    - a. Without Horizontals: L/175 maximum.
    - b. With Horizontals: L/175 or L/240 + 1/4" (6.4mm) for spans greater than 13'-6" (4.1m) but less than 40'-0" (12.2m).
  - 5. Thermal Movement: Provide for thermal movement caused by 180 degrees F. (82.2 degrees C.) surface temperature, without causing buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.
  - 6. Thermal Performance: When tested in accordance with AAMA 507, AAMA 1503 and NFRC 100:
    - a. Condensation Resistance Factor (CRFf): A minimum of 60.
    - b. Thermal Transmittance U Value: 0.45 BTU/HR/FT<sup>2</sup>/°F or less.

Note: Thermal Performance for the glazed system as a whole will be affected by the characteristics of the glass specified and percentage of vision area.

- 7. Acoustical Performance: Acoustical Performance: When tested in accordance with AAMA 1801:
  - a. Sound Transmission Class (STC) shall not be less than 35 laminated.
  - b. Outdoor-Indoor Transmission Class (OITC) shall not be less than 29 laminated.

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturers: YKK AP America, Inc.
  - 1. Storefront System: YKK AP YES 45 TU Storefront System.
- B. Storefront Framing System:
  - 1. Description: Center set, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery or shear block attachment.
  - 2. Components: Manufacturer's standard extruded aluminum mullions, 90 degree corner posts, entrance door framing, and indicated shapes.
  - 3. Thermal Barrier: Provide continuous thermal barrier by means of a poured and debridged pocket consisting of a two-part, chemically cured high density polyurethane which is bonded to the aluminum by YKK AP ThermaBond Plus®. Systems employing non structural thermal barriers are not acceptable.

### 2.02 MATERIALS

- A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.

### 2.03 ACCESSORIES

- A. Manufacturer's Standard Accessories:
  - 1. Fasteners: Zinc plated steel concealed fasteners: Hardened aluminum alloys or AISI 300 series stainless steel exposed fasteners.
  - 2. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer; glazing gaskets in accordance with ASTM C 864.
  - 3. 0.050 Aluminum Sill Flashing End Dams must have 3 point attachment.

### 2.06 FINISHES

- A. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612.
- B. High Performance Organic Coating Finish: Factory applied two-coat 70% Kynar resin by Arkema or 70% Hylar resin by Solvay Solexis, fluoropolymer based coating system, Polyvinylidene Fluoride (PVF-2), applied in accordance with YKK AP procedures and meeting AAMA 2605 specifications.

For additional information on architectural aluminum products offered by YKK AP America Inc. visit our web site at [www.ykkap.com](http://www.ykkap.com).

## **PART 1 GENERAL**

### **1.01 SUMMARY**

- A. Section Includes: Aluminum Storefront, including:
  - 1. YKK AP Series YES 45 TU Center Set Storefront System.
- B. Related Sections:
  - 1. Sealants: Refer to Division 7 Joint Treatment Section for sealant requirements.
  - 2. Glass and Glazing: Refer to Division 8 Glass and Glazing Section for glass and glazing requirements.
  - 3. Single Source Requirement: All products listed below shall be by the same manufacturer.
    - a. Section 08 32 13 Sliding Aluminum-Framed Glass Doors.
    - b. Section 08 51 13 Aluminum Windows.
    - c. Section 08 44 13 Glazed Aluminum Curtain Walls.
    - d. Section 08 44 33 Sloped Glazing Assemblies.

### **1.02 SYSTEM PERFORMANCE DESCRIPTION**

- A. Performance Requirements: Provide aluminum storefront systems that comply with performance requirements indicated, as demonstrated by testing manufacturer's assemblies in accordance with test method indicated.
  - 1. Air Infiltration: Completed storefront systems shall have 0.06 CFM/FT<sup>2</sup> (1.10 m<sup>3</sup>/h·m<sup>2</sup>) maximum allowable infiltration when tested in accordance with ASTM E 283 at differential static pressure of 6.24 PSF (299 Pa).
  - 2. Water Infiltration: No uncontrolled water when tested in accordance with ASTM E 331 at test pressure differential of: 10 PSF (479 Pa) (or when required, field tested in accordance with AAMA 503). Fastener Heads must be seated and sealed against Sill Flashing on any fasteners that penetrate through the Sill Flashing.
  - 3. Wind Loads: Completed storefront system shall withstand wind pressure loads normal to wall plane indicated:
    - a. Exterior Walls:
      - 1) Positive Pressure:
      - 2) Negative Pressure:
    - b. Interior Walls (Pressure Acting in Either Direction):
  - 4. Deflection: Maximum allowable deflection in any member when tested in accordance with ASTM E 330 with allowable stress in accordance with AA Specifications for Aluminum Structures.
    - a. Without Horizontals: L/175 maximum.
    - b. With Horizontals: L/175 or L/240 + 1/4" (6.4mm) for spans greater than 13'-6" (4.1m) but less than 40'-0" (12.2m).
  - 5. Thermal Movement: Provide for thermal movement caused by 180 degrees F. (82.2 degrees C.) surface temperature, without causing buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.
  - 6. Thermal Performance: When tested in accordance with AAMA 507, AAMA 1503 and NFRC 100:
    - a. Condensation Resistance Factor (CRF<sub>F</sub>): A minimum of 60.
    - b. Thermal Transmittance -Factor: 0.45 BTU/HR/FT<sup>2</sup>/°F or less.

Note: Thermal Performance for the glazed system as a whole will be affected by the characteristics of the glass specified and percentage of vision area.

- 7. Acoustical Performance: Acoustical Performance: When tested in accordance with AAMA 1801:
  - a. Sound Transmission Class (STC) shall not be less than 35 laminated.
  - b. Outdoor-Indoor Transmission Class (OITC) shall not be less than 29 laminated.

### **1.03 SUBMITTALS**

- A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."
- B. Product Data: Submit product data for each type storefront series specified.
- C. Substitutions: Whenever substitute products are to be considered, supporting technical data, samples, and test reports must be submitted ten (10) working days prior to bid date in order to make a valid comparison.
- D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors and textures.
- E. Samples: Submit verification samples for colors on actual aluminum substrates indicating full color range expected in installed system.

**F. Quality Assurance / Control Submittals:**

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
2. Installer Qualification Data: Submit installer qualification data.

**G. Closeout Submittals:**

1. Warranty: Submit warranty documents specified herein.
2. Project Record Documents: Submit project record documents for installed materials in accordance with Division 1 Project Closeout (Project Record Documents) Section.

**1.04 QUALITY ASSURANCE**

**A. Qualifications:**

1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project. If requested by Owner, submit reference list of completed projects.
2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction process.

**B. Mock-Ups (Field Constructed):** Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, and workmanship standard.

1. Mock-Up Size:
2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

**C. Pre-Installation Meetings:** Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

**1.05 PROJECT CONDITIONS / SITE CONDITIONS**

**A. Field Measurements:** Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

**1.06 WARRANTY**

**A. Project Warranty:** Refer to "Conditions of the Contract" for project warranty provisions.

**B. Manufacturer's Warranty:** Submit, for Owner's acceptance, manufacturer's standard warranty document executed by an authorized company official.

1. Warranty Period: Manufacturer's one (1) year standard warranty commencing on the substantial date of completion for the project provided that the warranty, in no event, shall start later than six (6) months from the date of shipment by YKK AP America Inc.

*EDITOR NOTE: Longer warranty periods are available at additional cost.*

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS (Acceptable Manufacturers/Products)**

- A. Acceptable Manufacturers:** YKK AP America Inc.  
270 Riverside Parkway, Suite A  
Austell, GA 30168  
Telephone: (678) 838-6000; Fax: (678) 838-6001

1. Storefront System: YKK AP YES 45 TU Center Set Storefront System.

**B. Storefront Framing System:**

1. Description: Center set, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery or shear block attachment.
2. Components: Manufacturer's standard extruded aluminum mullions, 90 degree corner posts, entrance door framing, and indicated shapes.
3. Thermal Barrier: Provide continuous thermal barrier by means of a poured and debridged pocket consisting of a two-part, chemically curing high density polyurethane which is bonded to the aluminum by YKK ThermaBond Plus®. Systems employing non-structural thermal barriers are not acceptable.

**2.02 MATERIALS**

- A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.
- B. Aluminum Sheet:
  - 1. Anodized Finish: ASTM B 209 (ASTM B 209M), 5005-H14 Aluminum Alloy, 0.050" (1.27 mm) minimum thickness.
  - 2. Painted Finish: ASTM B 209 (ASTM B 209M), 3003-H14 Aluminum Alloy, 0.080" (1.95 mm) minimum thickness.

### 2.03 ACCESSORIES

- A. Manufacturer's Standard Accessories:
  - 1. Fasteners: Zinc plated steel concealed fasteners; Hardened aluminum alloys or AISI 300 series stainless steel exposed fasteners.
  - 2. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer; Glazing gaskets in accordance with ASTM C 864.
  - 3. 0.050 Aluminum Sill Flashing End Dams must have 3 point attachment.

### 2.04 RELATED MATERIALS (Specified In Other Sections)

- A. Glass: Refer to Division 8 Glass and Glazing Section for glass materials.

### 2.05 FABRICATION

- A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.
  - 1. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.
  - 2. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.

### 2.06 FINISHES AND COLORS

- A. YKK AP America Anodized Plus® Finish:

CODE DESCRIPTION

YS1N\* Clear Anodized Plus®

YH3N Champagne Anodized Plus®

YB1N Medium Bronze Anodized Plus®

YB5N\* Dark Bronze Anodized Plus®

YK1N\* Black Anodized Plus®

YW3N White Anodized Plus®

M Mill Finish

\* Indicates standard finish usually carried as inventory.

Anodized Plus® is an advanced sealing technology that completely seals the anodic film yielding superior durability (See AAMA 612).

- B. Anodized Finishing: Prepare aluminum surfaces for specified finish; apply shop finish in accordance with the following:
  - 1. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612. Aluminum extrusions shall be produced from quality controlled billets meeting AA-6063-T5.
    - a. Exposed Surfaces shall be free of scratches and other serious blemishes.
    - b. Extrusions shall be given a caustic etch followed by an anodic oxide treatment and then sealed with an organic coating applied with an electrodeposition process.
    - c. The anodized coating shall comply with all of the requirements of AAMA 612: Voluntary Specifications, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum. Testing shall demonstrate the ability of the finish to resist damage from mortar, salt spray, and chemicals commonly found on construction sites, and to resist the loss of color and gloss.
    - d. Overall coating thickness for finishes shall be a minimum of 0.7 mils.
      - 2) CASS Corrosion Resistance Test, CASS 240/ASTM B368 Test Method.
      - 3) Other AAMA 2605 Performance Tests specified in these specifications, such as: 7.3 Dry Film Hardness; 7.8.2 Salt Spray Resistance; 7.9.1.2 Color Retention, South Florida; 7.9.1.4 Gloss Retention, South Florida.
- C. High Performance Organic Coating Finish:
  - 1. Type Factory applied two-coat 70% Kynar resin by Arkema or 70% Hylar resin by Solvay Solexis, fluoropolymer based coating system, Polyvinylidene Fluoride (PVF-2), applied in accordance with YKK AP procedures and

meeting AAMA 2605 specifications.

2. Colors: Selected by Architect from the following:
  - a. Standard coating color charts.
  - b. Custom coating color charts.
  - c. Color Name and Number:
- D. Finishes Testing:
  1. Apply 0.5% solution NaOH, sodium hydroxide, to small area of finished sample area; leave in place for sixty minutes; lightly wipe off NaOH; Do not clean area further.
  2. Submit samples with test area noted on each sample.

## **PART 3 EXECUTION**

### **3.01 MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS**

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, installation instructions, and product carton instructions. The latest installation manual is available at [www.ykkap.com](http://www.ykkap.com).

### **3.02 EXAMINATION**

- A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

### **3.03 PREPARATION**

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
  1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

### **3.04 INSTALLATION**

- A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
  1. Protect aluminum members in contact with masonry, steel, concrete, or dissimilar materials using nylon pads or bituminous coating.
  2. Shim and brace aluminum system before anchoring to structure.
  3. Provide sill flashing at exterior storefront systems. Extend extruded flashing continuous with splice joints; set in continuous beads of sealant.
  4. Verify storefront system allows water entering system to be collected in gutters and wept to exterior. Verify metal joints are sealed in accordance with manufacturers installation instructions.
  5. Locate expansion mullions where indicated on reviewed shop drawings.
  6. Seal metal to metal storefront system joints using sealant recommended by system manufacturer.

### **3.05 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Services: Upon request, provide manufacturer's field service consisting of site visit for inspection of product installation in accordance with manufacturer's instructions.
- B. Field Test: Conduct field test to determine watertightness of storefront system. Conduct test in accordance with AAMA 501.2.

### **3.06 ADJUSTING AND CLEANING**

- A. Adjusting: Adjust swing doors for operation in accordance with manufacturer's recommendations.
- B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to owner's acceptance, and remove construction debris from project site. Legally dispose of debris.
- C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction.

## **END OF SECTION**

02-3003-05

This document supersedes all previous versions.