**FLOODPROOF WINDOW FROM FLOODPROOFING.COM®
3-PART SPECIFICATIONS**

**SECTION 08 56 00
SPECIAL FUNCTION WINDOWS**

\*\*Note to Specifier\*\* This specification contains component and configuration options. Work with Distributor to choose the appropriate options for your specific project requirements. Delete specifier instructions prior to publishing completed specification.

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Work Results:

1. Installation of Floodproof Windows: Factory assembled and pre-glazed floodproof windows, curtain walls, and window wall systems.

B. Principal Products:

1. Structural Silicone Glazed Floodproof Windows

2. Structural Silicone Glazed Floodproof Curtain Walls

3. Structural Silicone Glazed Floodproof Window Walls

4. Captured 4-sided Glazed Floodproof Windows

C. Section Includes:

1. Glass

2. Hardware

3. Gaskets

4. Structural

5. Weather Sealants

D. Typical applications for this product:

1. Passive Dry Floodproofing Solution: Flood Barrier for Opening Barrier Applications.

2. Hurricane-Resistant Building Envelope Protection: Large Missile Impact Level D.

**1.2 RELATED SECTIONS**

A. Section 08 81 00 Glass Glazing

B. Section 08 88 00 Special Function Glazing

C. Section 08 40 00 Entrances, Storefronts and Curtain Walls

D. Section 08 41 00 Entrances and Storefronts

E. Section 08 44 00 Curtain Wall and Glazed Assemblies

**1.3 REFERENCES**

A. International Building Code (IBC), latest edition as approved by the authorities having jurisdiction.

B. <State> Building Code, latest edition as approved by the authorities having jurisdiction.
C. ASCE/SEI 24 “Flood Resistant Design and Construction”, latest edition.

D. ASCE/SEI 7 “Minimum Design Loads and Associated Criteria for Buildings and Other

Structures”, latest edition.

E. FM Global: ANSI/FM Approvals 2510-2020 (Sept. 2020) - Flood Barriers For Opening Barrier Applications.

F. Code of Federal Regulations (CFR), Title 44.
G. Federal Emergency Management Agency (FEMA) Regulations, latest.
H. National Flood Insurance Program (NFIP) Regulations, latest.

I. FEMA/NFIP Technical Bulletin 3 “Requirements for the Design and Certification of Dry Floodproofed Non-Residential and Mixed-Use Buildings”, latest edition.

J. FEMA P-936 “Floodproofing Non-Residential Buildings.”
K. American Society for Testing and Materials (ASTM):

1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

2. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

3. ASTM A276 – Standard Specification for Stainless Steel Bars and Shapes.

4. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.

5. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.

6. ASTM C1115 – Standard Specification for Dense Elastomeric Silicone Rubber Gaskets and Accessories.

7. ASTM E2203 - Standard Specification for Dense Thermoplastic Elastomers Used for Compression Seals, Gaskets, Setting Blocks, Spacers and Accessories.

8. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

9. ASTM C162 - Standard Terminology of Glass and Glass Products.

10. ASTM C1036 (Q3) - Standard Specification for Flat Glass.

11. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.

12. ASTM C1376 – Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.

13. ASTM C1464 - Standard Specification for Bent Glass.

14. ASTM E2188 - Standard Test Method for Insulating Glass Unit Performance.

15. IGMA/IGCC Certification & Testing for Insulating Glass Units ASTM 2190.

16. ASTM E283 - Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.

17. ASTM E331 - Standard Test Method for Metal Curtain Walls and Doors by Uniform Static Air Pressure Difference.

18. ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

19. ASTM 1886 – Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

20. ASTM 1996 – Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

L. American Architectural Manufacturers Association (AAMA):

1. AAMA 101/I.S.2/A440 – NAFS – North American Fenestration Standard/Specifications for Windows, Doors and Skylights

2. AAMA 501 – Methods of Test for Exterior Walls.

3. AAMA TIR-A11 - Maximum Allowable Deflection of Framing Systems for Building Cladding Components at Design Wind Loads

4. AAMA TIR-A1 - Sound Control for Fenestration Products

M. Consumer Product Safety Commission (CPSC): CPSC 16 CFR 1201 – Safety Standard for Architectural Glazing Materials.

N. American National Standards Institute (ANSI): ANSI Z97.1 - Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

O. Aluminum Design Manual (ADM) 2015.

P. American Institute of Steel Construction (AISC): Steel Design Guide 27: Structural Stainless Steel.

Q. Glass Association of North America (GANA): GANA Glazing Manual.

R. Flat Glass Marketing Association: FGMA Sealant Manual.

S. UL Standards: UL 972 Standard for Safety Burglary Resisting Glazing Material.

T. EN standard (European Standard): EN 356 European Standard for Glass in Building: Security glazing – testing and classification of resistance against manual attack.

U. National Fenestration Registration Council (NFRC):

 1. NFRC 100 – Procedure for Determining Fenestration Product U-Factors.

 2. NFRC Simulation Manual.

**1.3 ADMINISTRATIVE PROCEDURES**

A. Coordination Procedures: Coordinate floodproof window and wall locations with existing architectural finishes.

B. Preinstallation Meeting Attendees and Procedures:

1. Conduct meeting [one week] [one month] [other scheduled time], minimum before starting work in this Section.

2. Additional Attendees: <List Attendees>.

3. Additional Agenda Items:

a. <Agenda Item>.

b. <Agenda Item>.

c. <Agenda Item>.

 **1.4 ACTION SUBMITTALS**

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Waterproofing: The installer is responsible for supplying compatible waterproofing around the perimeter of the system and the host structure substrate according to specifications and shop drawings.

C. Installation: Install per details in shop drawings and guidelines in PART 3 – EXECUTION.

D. Shop Drawings: Provide site-specific drawings with floor plans, product elevations, and attachments details.

1. Indicate joint locations in those vertical and horizontal mullions that exceed standard length.

2. Include details of provisions for assembly expansion and contraction. The system shall be a face seal barrier wall designed system that shall preclude the entry of water within the framing system.

3. Include full-size isometric details of each vertical-to-horizontal intersection of glazed aluminum curtain walls, showing the following:

a. Joinery, including concealed welds (where required).

b. Anchorage.

c. Expansion provisions.

d. Glazing.

e. Flashing (if applicable).

4. All shop drawings sheets shall be of one size.

5. All shop drawings shall bear the seal of a Professional Engineer currently licensed in the licensing jurisdiction of the project. [\*\*Note to Specifier\*\* delete if not required]

E. Engineering Calculations: For glazed aluminum curtain walls and window walls indicated to comply with performance requirements and design criteria, including any required data signed and sealed by the qualified structural engineer responsible for their preparation.

1. Signed and Sealed Engineering Calculations shall be submitted concurrently with the corresponding shop drawings.

2. Submit preliminary thermal analysis to substantiate that the proposed system is capable of meeting the specified thermal and condensation resistance performance criteria. [\*\*Note to Specifier\*\* delete if not required]

F. Fabrication Samples: Of the following, made from 12-inch lengths of full-size window, curtain wall, or window wall components [\*\*Note to Specifier\*\* delete if not required]:

1. Joinery.

2. Anchorage.

3. Expansion provisions.

4. Glazing.

5. Flashing and drainage (if applicable).

6. Framework finish for color and texture identification.

**1.5 INFORMATIONAL SUBMITTALS**

1. Qualification Statements: For the [manufacturer], [distributor], [installer], and/or [professional engineer].

B. Delegated Design Submittals: Design for installation system, including supports and anchorage to substrate.

C. Test and Evaluation Reports: Manufacturer test results showing resistance to flood water pressures. Based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency, for four-sided structural sealant- glazed curtain walls, indicating compliance with performance requirements.

D. Manufacturer’s instructions.

E. Welding Certificates.

F. Quality-Control Program: Developed specifically for Project, including fabrication and installation, according to recommendations in ASTM C 1401. Include periodic quality-control reports.

G. Source quality-control reports.

H. FEMA Submittals:

1. Dry Floodproofing Certificate for Non-Residential Structures, latest edition.

2. Flood Emergency Operation Plan per FEMA TB 3, latest edition.

3. Inspection and Maintenance Plan per FEMA TB 3, latest edition.

4. Flood Insurance: Documentation that design factored in estimated flood insurance costs for the building per FEMA TB 3, latest edition.

5. Proof of Annual Service Agreement, as required by the authorities having jurisdiction.

6. Proof of Early Warning System, as required by the authorities having jurisdiction.

7. Dry Floodproofing Credit for NFIP Flood Insurance: The above documents should get submitted to apply for a Dry Floodproofing Credit (only available for non-residential buildings). Contact an Insurance Agent for assistance in submitting and for more information.

**1.6 CLOSEOUT SUBMITTALS**

A. Operations and Maintenance Manual.

B. Warranty Documentation.

**1.7 QUALITY ASSURANCE**

A. Distributor: Floodproofing.com

 19 Mantua Road, NJ 08061

 1-800-507-0865

 info@floodproofing.com

B. Sealants: Sealant Manufacturer to perform pull tests for sealant/substrate

compatibility.

C. Installer Qualifications: Pre-qualified installer by Floodproofing.com who is trained and approved for installation of units required for this Project, and is capable of assuming responsibility and performing work of this Section.

1. Responsibility: Preparation of data for structural sealant glazed curtain wall and window wall systems including Shop Drawings based on testing and engineering analysis of product’s standard units in assemblies similar to those indicated for this Project and submission of reports of tests performed on product’s standard assemblies.

D. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

E. Product Options: Information on Drawings and in Specifications establishes requirements for assemblies' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.

F. Structural-Sealant Glazing: Comply with ASTM C 1401 for design and installation of structural-sealant-glazed curtain walls.

G. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

H. Notice of Acceptance (NOA): Provide either an NOA issued by Miami-Dade County or a Product Approval Document issued by the State of Florida indicating specified structural sealant glazed curtain wall and window wall system is approved as "Missile Impact Resistant” as applicable to this Category 2 building. The system shall be tested and approved to comply with Section 449.4.2.5.1 of the Florida Building Code – 8th Edition 2023 Building Code.

**1.8 DELIVERY, STORAGE AND HANDLING**

A. General: Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with the distributor’s ordering instructions and lead times.

C. Delivery: Deliver materials to designated site locations.

D. Storage and Protection: Store under cover, sheltered from weather and construction activities.

**1.8 FABRICATION DIMENSIONS**

A. Field Measurements: Contractor to provide the openings with the dimensions.
1. Based on the time frames and design, the project shall have guaranteed building

opening size and conditions. Field verification of the openings and conditions shall be performed at each of the areas prior to the installation. Incorrect openings, conditions or out of tolerance conditions are to be corrected prior to installation. The openings and conditions are to be prepared to the conditions and measurements indicated in the glazing systems shop drawings.

**1.9 WARRANTY**

A. Product Warranty: Refer to conditions of the warranty for project warranty provisions.

 1. Provide all manufacturer’s pass-through warranties.

B. Contact Distributor regarding extended warranty options.

**PART 2 PRODUCTS**

**2.1 PRODUCTS**

A. Distributor: Floodproofing.com

 19 Mantua Road, NJ 08061

 1-800-507-0865

 info@floodproofing.com

1. Basis of Design: Structural Silicone Glazed Floodproof Windows by Floodproofing.com

2. Basis of Design: Structural Silicone Glazed Floodproof Curtain Walls by Floodproofing.com

3. Basis of Design: Structural Silicone Glazed Floodproof Window Walls by Floodproofing.com

4. Basis of Design: Captured 4-sided Glazed Floodproof Windows by Floodproofing.com

1. Substitutions: Not permitted.
2. Single Source Responsibilities: Obtain all floodproof window, curtain wall, or window wall assemblies from single distributor.

D. Description: Aluminum fixed frame for passive flood mitigation and/or hurricane impact protection (Missile Level D) applications. Captured frame and structurally glazed configurations are available. The systems shall be a Four Sided Structurally Silicone Glazed – Non-Captured Face Seal Barrier wall system that precludes water from entering the system and does not require or incorporate the use of weeps. The system or systems shall be unitized pre-assembled and factory pre-glazed systems.

Certified FM Approvals Flood Barrier for Opening Flood Barrier Applications

Florida Product Approval for the State of Florida & Texas. Approved for use within and outside the High Velocity Hurricane Zone (HVHZ).

ANSI/FM Approvals 2510-2020 (Hydrostatic and Impact) tested system.

E. Method of Installation: Install prime factory pre-glazed aluminum curtain wall and window wall systems only. Install as a unitized pre-assembled and manufacturer factory pre-glazed system. Field glazing will be permitted only for replacement glazing or special concealed or field conditions.

F. Framing Member Dimensions: The framing members systems shall have size, shapes, profiles, and configurations as shown in the Approved Shop Drawings.

**2.2 PERFORMANCE REQUIREMENTS**

A. Engineering Code Practices: Engineer flood products to conform to the design requirements that are based on the latest adopted editions of ASCE 24, ASCE 7, and the International Building Code (IBC).

B. Design Criteria: Conform to the requirements for A and AE Zones as set forth by the National Flood Insurance Program (NFIP).

C. General Performance: Comply with performance requirements specified, as determined by testing of manufacturer's 4-Sided Non-Captured Structural Silicone Glazed Face sealed barrier wall aluminum curtain walls and window walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Structural-sealant-glazed non-captured curtain walls and window walls shall withstand movements of supporting structure indicated on Drawings including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated wind loads and live loads.

2. Failure also includes the following:

a. Thermal stresses transferring to building structure.

b. Excessive glass breakage.

c. Excessive noise or vibration created by wind, thermal and structural movements.

d. Loosening or weakening of fasteners, attachments, and other components.

3. Structural Design: The curtain wall and window wall manufacturer is responsible for the following work:

a. Glazed aluminum curtain walls and window walls, including comprehensive engineering analysis by a qualified structural engineer, using performance requirements and design criteria indicated.

b. Systems shall be designed to withstand loads indicated according to ASCE 7 and as required by the applicable Building Code, whichever is more stringent.

4. Wind Loads: Cladding wind-load criteria, positive and negative for various parts of building is based on requirements of the current Florida Building Code or as otherwise noted herein. The required design pressures shall be those provided by the Building’s Structural Engineer of Record and as noted and included in the Contract Documents.

a. Wind pressures: As shown in the Contract Drawings.

b. Determined according to the applicable Building Code, ASCE 7, and/or the wind tunnel report.

5. Structural-Test Performance: Test according to ASTM E 330 as follows:

a. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.

b. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.04 percent of span.

c. Test Durations: As required by design wind velocity, but not less than 10 seconds.

7. Windborne-Debris-Impact-Resistance Performance: Comply with requirements for wind-Borne Debris under the Florida Building Code 8th edition as called for in Section 449.4.2.5.1 and further described in sections 1626.2 through 1626.4. Note that this project shall have the glazing that shall meet the requirements for a Risk Category 2 Building. All exterior fixed glazing systems shall be tested and meet the impact protection level for “D” Missile at or below 30 feet and standard “A” missile above 30 feet.

8. Flood Barrier Requirements: Areas of the project noted as requiring Glazed Flood Barrier. The system shall have current FM Approval’s 2510 testing and approval with incorporated and tested mullions, heads, sills and shall be a four-sided structural silicone glazing system that is non captured. The system shall incorporate concealed reinforcing as tested and engineered and shall be a conventional appearing glazing system. Profiles of the system shall be capable of being exterior silicone butt jointed and shall be tested to a minimum of 48” of water height with FM Approval’s current standard floating debris impact test.

9. Water Penetration under Static Pressure for the Fixed Glass System: Based on laboratory testing, there shall be no evidence of water penetration through fixed glazing and framing areas when tested according to AAMA 502 at a minimum static-air-pressure differential of 100 percent of positive wind-load design pressure up to a maximum positive pressure of 100psf, but no less than 51 lbs/sq. ft.

10. Thermal Movements: Allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures:

a. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

b. Test Interior Ambient-Air Temperature: 70 deg F.

11. Air Infiltration: Tested per ASTM E283 and TAS 202 @ 6.24 P.S.F. (no infiltration).

12. Water Infiltration: ASTM E331, AAMA 501, and TAS 202 - 18 P.S.F.

13. Structural: ASTM E330, AAMA 501, and TAS 202 - Design Pressure +/- 120 P.S.F.

14. Hurricane Impact: ASTM 1996 and TAS 201 up to missile level “A”, “B”, “C”, & “D”

15. Cycling: ASTM 1886 and TAS 203 (9,000 cycles) 120 P.S.F.

16. Hydrostatic and Impact Flood Mitigation per ANSI/FM Approvals 2510 Section 4.3:

a. Up to 10 ft Static Water Test for captured and structurally glazed configurations.

b. Dynamic Impact Log Tested.

17. Enhanced security glazing: UL 972, EN 356 level 1-5 – superior security rating may be viable depending on glass composition.

**2.3 MATERIALS**

A. Aluminum: Alloy and temper as tested to comply with the Product Approval and as recommended by manufacturer for type of use and finish indicated.

a. Sheet and Plate: ASTM B 209.

b. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.

c. Extruded Structural Pipe and Tubes: ASTM B 429.

d. Structural Profiles: ASTM B 308/B 308M.

e. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

a. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.

b. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.

c. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

C. Frame:

a. Aluminum: 6061-T6 or 6005-T5 or 6005-T6 Structural Extruded Aluminum ASTM B 221.

b. Framing Members: Manufacturer's standard extruded aluminum framing members of thickness required and reinforced as required to support imposed loads.

c. Location of Glazing Plane: Front.

d. Frame assembly: Welded or mechanically attached with screws (410 Stainless Steel Self Drilling Screws) from the factory.

D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum or painted steel with shims for aligning system components.

E. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.

2. Reinforce members as required to receive fastener threads.

F. Anchors: Manufacturers standard Product Approval compliant with adjustment that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

1. Concrete Inserts: malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.

G. Framing Sealants: Manufacturer's standard sealants, as specified in the Florida Product Approval and with VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

H. Glass: CPSC 16 CFR 1201 - ANSI Z97.1 - ASTM E1300 - ASTM C1048

1. (1-1/16”) 1/2" H.S. or F.T. + 0.090" SG + 1/2" H.S. or F.T.

2. (1-7/16”) 1/2" H.S. or F.T. + 0.090" SG + 1/2" H.S. or F.T + 0.090" SG + 1/4" H.S. or F.T.

3. (2-7/16”) 1/2" H.S. or F.T. + 0.090" SG + 1/4" H.S. or F.T. + 1/2" Air Space + 1/2" H.S. or F.T. + 0.090" SG + 1/2" H.S. or F.T.
a. Glass to be Heat-Strengthened (H.S.) or Fully Tempered (F.T.).

b. Alternate glass compositions may be available upon request.
c. Heat-treated glass optical quality observations:
d. Glass sourced from first-rate manufacturers to provide the best optical

quality; however, all heat-treated glass products inherently may exhibit roll distortion, which can be exacerbated by the viewing angle.

e. Heat-treated glass tends to exhibit more distortion than annealed glass, particularly when the units are laminated.

f. In the heat-treated glass, a strain pattern or iridescence that is typically not visible may become noticeable under specific lighting conditions. This phenomenon is not a defect but rather an acceptable characteristic of heat-strengthened and fully tempered glass. It should not be confused with discoloration (ASTM C 1048).

g. Roller wave orientation will depend on panel sizes.

h. Glazing Products: Specified in Division 08 Section "Glazing." and as per the Florida Product Approval

I. Glazing Gaskets: Manufacturer's standard of black polypropylene gaskets. Setting blocks, and shims or spacers shall be as per the Product Approval and as recommended by the manufacturer. Comply with ASTM C864, C1105 and E2203.

J. Glazing Sealants: Structural Silicone for the shop glazing shall be DowSil #983 black.

1. Structural Sealant: TREMCO Proglaze® II or DOWSIL™ 983 Structural Glazing Sealant.

a. Perimeter weatherproofing sealant: TREMCO Spectrem® 2 Silicone, DOWSIL™ 795 Silicone Building Sealant or equivalent. Installer to verify compatibility with host structure substrate material. DowSil 700 series silicone (where applicable).

b. Structural Glazing Tape: Tremco SGT921 or similar.

K. Finishes:

1. Aluminum: Powder coatings AAMA 2604 or 2605 Kynar or equivalent.

2. Class 1 Clear Anodized Aluminum

3. Finish for Framing Components: High-Performance Organic Finish: Two-coat or three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

a. Color and Gloss: As selected by Architect from full range of standard non-exotic colors.

L. Accessory Materials:

1. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil thickness per coat.

**2.4 FABRICATION**

A. Extrude aluminum shapes before finishing.

B. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.

2. Accurately fitted joints with ends coped or mitered.

3. Physical and thermal isolation of glazing from framing members.

4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.

5. Provisions for field replacement of glazing from exterior.

6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

C. Fabricate components that, when assembled, have the following characteristics:

1. Four-sided structural silicone glazed, unitized, factory assembled and pre-glazed. The system shall be a “Face Seal Barrier Wall System” that is designed to not permit any water penetration into the glazing system and that will not have the need for additional or internal guttering or other means to drain or weep water.

**PART 3 EXECUTION**

**3.1 MANUFACTURER’S INSTRUCTIONS**

A. Compliance: Comply with manufacturer’s product data including product technical bulletins and installation instructions per Installation & Maintenance Manual.

**3.2 EXAMINATION**

A. Site Verification of Conditions: Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Verify substrate conditions, have been previously installed under other sections, and are acceptable for product installation in accordance with manufacturer’s instructions. Openings shall be plumb, square, and within allowable tolerances. The Architect/Engineer shall be notified of any conditions that jeopardize the integrity of the proposed framing system. Do not proceed until such conditions are corrected.

B. For flood, compatible product on the substrate has to be used to comply with recommended and tested qualification.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.3 INSTALLATION**

A. Installation shall be by a prequalified licensed contractor and in strict accordance with the approved shop drawings. Verify compatibility for all products used for installation.

B. General:

1. Comply with distributor’s written instructions.

2. Do not install damaged components.

3. Fit joints to produce hairline joints free of burrs and distortion.

4. Rigidly secure non-movement joints.

5. Install anchors located in wet environment with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

6. Seal joints watertight unless otherwise indicated.

C. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.

2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

D. Joints in Framing Members: Where vertical and horizontal mullions exceed a standard length, join members in concealed locations or locations shown on approved Shop Drawings.

E. Install components plumb and true in alignment with established lines and grades.

F. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

G. Glazing, with the exception of incidental conditions or the replacement of glass, or inaccessible conditions for anchoring access, shall be factory pre-glazed. The glass products shall comply with Division 08 Section "Glazing.", and the requirements of the Florida Product approval.

**3.4 ERECTION TOLERANCES**

A. Erection Tolerances: Install glazed aluminum curtain walls to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.

2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.

3. Alignment:

a. Where surfaces butt in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/32 inch.

b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/16 inch.

c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/8 inch.

4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

**3.5 FIELD QUALITY CONTROL**

A. Testing Agency: The Owner may engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of representative areas of glazed aluminum curtain walls and window walls if elected and done by the Owner, shall take place as installation proceeds to determine compliance of installed assemblies with specified requirements.

C. Perform quality-control procedures complying with ASTM C 1401 recommendations including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks.

1. Structural-Sealant Adhesion: Test structural sealant according to recommendations in ASTM C 1401, Destructive Test Method A, "Hand Pull Tab (Destructive)," Appendix X2.

a. Repair installation areas damaged by testing.

D. Water Penetration: Areas shall be tested according to ASTM E 1105 at a minimum uniform and cyclic static-air-pressure differential of 0.67 times the static-air-pressure differential specified for laboratory testing in "Performance Requirements" Article, but not less than 34.17 lbf/sq. ft., and shall not evidence water penetration. Manufacturer test reports will be provided; third-party test optional.

E. Water Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration.

Manufacturer test reports will be provided; third-party test optional.

F. Structural-sealant-glazed curtain walls will be considered defective if they do not pass tests and inspections. Prepare test and inspection reports

**3.4 CLEANING AND PROTECTION**

A. Protect glass from contact with contaminating substances resulting from construction operations.

B. Wash glass on both faces not more than four days prior to the date scheduled for inspections intended to establish the date of Substantial Completion. Wash glass by the method recommended by the glass manufacturer.

C. Remove temporary coverings and protection of adjacent work areas.

**END OF SECTION**

**Please feel free to copy and paste the below graphics into your plans.**

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