****

GUIDE SPECIFICATION

Manufacturer:

**Oldcastle BuildingEnvelope®**

P.O. Box 629

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Terrell, Texas 75160

Voice (972) 551-6100

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**SECTION 08 42 13 - ALUMINUM-FRAMED ENTRANCES (MSD-375/WSD-500 StormMax™ Doors)**

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This guide specification has been prepared by **Oldcastle BuildingEnvelope®** in printed and electronic media as an aid to specifiers in preparing written construction documents for entrance door systems.

This section includes MSD-375 and WSD-500 Entrance Doorsfor exterior applications, factory prefinished and shop

fabricated, for factory/field glazing.

Sealants are referenced in Section 07 92 00, ***Joint Sealants***.

Glass and glazing are referenced in Section 08 80 00, ***Glazing***.

Door hardware may be specified in whole or in part in this Section or in Section 08 71 00, ***Door Hardware***. Coordinate requirements.

Section 01 43 00, ***Quality Assurance*** is intended for use along with this section. Coordinate requirements accordingly.

Where work of this section integrates with storefront, window wall, curtain wall, sloped glazing system, skylights, windows or other glazing system(s), carefully coordinate all sections to function together. Air and vapor barrier continuity from this system to adjacent construction is critical to the successful air tightness of the building; specify compatible materials in conjunction with adjacent air and vapor barriers.

Edit entire master to suit project requirements. Modify or add items as necessary. Delete items, which are not applicable. Words and sentences within brackets [\_\_\_\_\_] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance, proprietary, and descriptive type specifications. Edit to avoid conflicting requirements.

Editor notes are included within the text of this section to assist the specifier in knowledgeable decision-making.

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**PART 1 - GENERAL**

1.01 SUMMARY

 A. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings

 apply to Work of this Section.

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*Edit this paragraph to briefly describe the contents of the section. After editing section,*

*refer back to this paragraph to verify no conflicts exist.*

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 B. Section Includes:

 1. Aluminum doors complete with hardware.

 2. Accessories necessary to complete Work.

 C. Products Furnished But Not Installed Under this Section: Inserts and anchoring devices that are to be built into structure.

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*This document incorporates CSI (Construction Specifications Institute) Manual of Practice*

*principles of cross-referencing to Division 1 sections and other sections. The cross references*

*must be edited to retain only those other sections used. Other guide specifications for* ***Oldcastle BuildingEnvelope*®** *include:*

 *Section 08 41 13 Aluminum-Framed Entrances and Storefronts*

 *Section 08 41 26 All-Glass Entrances and Storefronts*

 *Section 08 43 13 Aluminum-Framed Storefronts*

 *Section 08 43 29 Sliding Storefronts*

 *Section 08 44 13 Glazed Aluminum Curtain Walls*

 *Section 08 44 23 Structural Sealant Glazed Curtain Walls*

 *Section 08 44 33 Sloped Glazed Assemblies*

 S*ection 08 46 00 Window Wall Assemblies*

 *Section 08 51 13 Aluminum Windows*

 *Section 08 62 00 Unit Skylights*

 *Section 08 63 00 Metal-Framed Skylights*

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 D. Related Sections:

 1. Section 01 43 00 Quality Assurance

 2. Section 01 43 39 Mockups

 3. Section 01 45 23 Testing and Inspecting Services

 4. Section 01 78 36 Warranties

 5 Section 05 50 00 Metal Fabricators

 6. Section 06 10 00 Rough Carpentry

 7. Section 07 92 00 Joint Sealants

 8. Section 08 41 13 Aluminum Entrances and Storefronts

 9. Section 08 41 26 All-Glass Entrances and Storefronts

 10. Section 08 42 13 Aluminum-Framed Entrances

 11. Section 08 43 13 Aluminum-Framed Storefronts

 12. Section 08 43 29 Sliding Storefronts

 13. Section 08 44 13 Glazed Aluminum Curtain Walls

 14. Section 08 44 23 Structural Sealant Glazed Curtain Walls

 15. Section 08 44 33 Sloped Glazed Assemblies

 16. Section 08 46 00 Window Wall Assemblies

 17. Section 08 51 13 Aluminum Windows

 18. Section 08 63 00 Metal-Framed Skylights

 19. Section 08 71 00 Door Hardware

 20. Section 08 80 00 Glazing

 21. Section 08 81 00 Glass Glazing

 22. Section 08 85 00 Glazing Accessories

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*List reference standards that are included within the text of this section. Edit the following*

*as required for project conditions.*

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1.02 REFERENCES

 A. Aluminum Association (AA):

 DAF-45 Designation System for Aluminum Finishes

 B. American Architectural Manufacturers Association (AAMA):

 501 Methods of Test for Exterior Walls

 501.2 Quality Assurance and Diagnostic Water Leakage Field Check of Installed

 Storefronts, Curtain Walls and Sloped Glazing Systems

 2605 Voluntary Specification, Performance Requirements and Test Procedures for

 Superior Performing Organic Coatings on Aluminum Extrusions and Panels

 606.1 Voluntary Guide Specifications and Inspection Methods for Integral Color Anodic

 Finishes for Architectural Aluminum

 607.1 Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes

 for Architectural Aluminum

 608.1 Voluntary Guide Specifications and Inspection Methods for Electrolytically Deposited

 Color Anodic Finishes for Architectural Aluminum

 611 Voluntary Specification for Anodized Architectural Aluminum

 701/702 Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration

 Weatherseals

 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of

 Windows, Doors and Glazed Wall Sections

 1801 Voluntary Specification for the Acoustical Rating of Exterior Windows, Doors, Skylights

 and Glazed Wall Section

 CW-10 Care and Handling of Architectural Aluminum From Shop to Site

 CW-DG-1 Aluminum Curtain Wall Design Guide Manual

 CWG-1 Installation of Aluminum Curtain Walls

 SFM1 Aluminum Storefront and Entrance Manual

 TIR-A8 Structural Performance of Composite Thermal Barrier Framing Systems

 C. American National Standards Institute (ANSI):

 A117.1 Accessible and Usable Buildings and Facilities

 Z97.1 Safety Glazing Materials Used in Buildings – Safety Performance Specifications

 and Methods of Test

 D. American Society for Testing and Materials (ASTM):

 A36 Standard Specification for Carbon Structural Steel

 A123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

 A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-

 Coated (Galvannealed) by the Hot-Dip Process

 B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

 B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire,

 Profiles, and Tubes

 B308 Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled

 or Extruded

 C716 Standard Specification for Installing Lock-Strip Gaskets and Infill Glazing Materials

 C920 Standard Specification for Elastomeric Joint Sealants

 E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows,

 Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen

 E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights

 and Curtain Walls by Uniform Static Air Pressure Difference

 E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors

 and Curtain Walls by Static Air Pressure Difference

 E1886 Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and

 Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure

 E1996 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors,

 and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

 E2188 Standard Test Method for Insulating Glass Unit Performance

 E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation

 E. Consumer Product Safety Commission (CPSC):

 16 CFR 1201 Safety Standard for Architectural Glazing Materials

 F. Federal Specifications (FS):

 TT-P-641G(1) Primer Coating; Zinc Dust-Zinc Oxide (For Galvanized Surfaces)

 TT-P-645A Primer, Paint, Zinc-Molybdate, Alkyd Type

 G. Florida Building Code (HVHZ)/Miami-Dade County (BCCO):

 TAS 201 Testing Application Standard - Impact Test Procedures

 TAS 202 Testing Application Standard - Criteria for Testing Impact & Nonimpact Resistant

 Building Envelope Components Using Uniform Static Air Pressure

 TAS 203 Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

 H. Glass Association of North America (GANA):

 Glazing Manual

 I. Steel Structures Painting Council (SSPC):

 Paint 12 Cold-Applied Asphalt Mastic (Extra Thick Film)

 J. Unified Facilities Criteria (UFC):

 4-010-01 DoD Minimum Antiterrorism Standards for Buildings

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*Restrict statements to identify system performance requirements or function criteria only,*

*permitting system manufacturers the latitude to adjust or redesign proprietary systems to*

*achieve specified requirements. Edit system requirements carefully and include only applicable*

*performance criteria making sure there is no conflict with proprietary information listed*

*in part 2. Delete paragraphs not appropriate to project.*

*The following paragraphs represent a suggested listing of performance criteria.*

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1.03 SYSTEM REQUIREMENTS

 A. General Standard: In addition to requirements shown or specified, comply with applicable provisions of AAMA SFM-1 "Aluminum Storefront and Entrance Manual" for design, materials, fabrication and installation of component parts along with Miami-Dade County Protocol TAS-201, TAS-202 and TAS-203, [and, or] ASTM 1996 and 1886.

 B. Design Requirements:

 1. Provide entrance system including necessary modifications to meet specified requirements and

 maintaining visual design concepts.

 2. Fabricate system(s) to match system glazing method and installation requirements.

 3. Perimeter conditions shall allow for installation tolerances, expansion and contraction of adjacent materials, and sealant manufacturer's recommended joint design.

 4. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage or moisture disposal.

 5. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.

 6. Do not assume glass, sealants, and interior finishes contribute to framing member strength, stiffness, or lateral stability.

 7. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.

 8. Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.

 9. Not Permitted: Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system.

 10. Provide concealed fastening.

 11. Perimeter fasteners to be installed per anchor chart locations based on surrounding

 structure and design loads.

 12. Where anchor inspections are required, sill design with appropriate access will be provided.

 13. Framing systems shall accommodate expansion and contraction movement due to structural

 movement and surface temperature differentials of 180 degrees F without causing buckling,

 stress on glass, failure of joint seals, excessive stress on structural elements, reduction of

 performance, or other detrimental effects.

 14. Provide uniform color and profile appearance at components exposed to view.

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*Retain item below when structural silicone glazing is utilized.*

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 15. Glazing shall rest on EPDM setting blocks that transfer glass weight to main framing members.

 16. Cleaning and preparation of materials to be in contact with structural sealant must be cleaned properly as recommended by sealant manufacturer.

 17. As a minimum, aluminum shapes to be in contact with structural silicone to receive an alodine finish. Structural sealant directly attaching to mill finished aluminum is not acceptable.

 18. Proper compatibility and adhesion analysis of substrates to be provided by sealant manufacturer.

 C. Performance Requirements:

 1. Wind loads: Provide framing system capable of withstanding wind load design pressures

 of +70 psf acting inward and -80 psf acting outward. The design pressures are to be tested

 in accordance with ASTM E-330.

 2. Large missile impact resistant per ASTM E 1996.

 3. Cycle tested per ASTM E 1886.

 4. Forced Entry tested per AAMA 1304.

 5. Cycle tested per ASTM E 1886.

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*Coordinate wind loads with applicable building code, or appropriate wind loads may be*

*determined by using ASCE 7, “Minimum Design Loads and Associated Criteria for Buildings*

*and Other Structures”. Edit following paragraph accordingly.*

*Boundary layer wind tunnel testing may be necessary for determining design wind loads*

*when building shape is other than rectangular in plan, site location has unusual wind*

*conditions, or building is critically located with respect to other nearby buildings.*

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 D. Structural Requirements:

 1. Wind loading:

1. Basic zones: \_\_\_\_\_\_ psf

b. Corner zones: \_\_\_\_\_\_ psf

 E. Hurricane Resistance Requirements:

 1. **[**Large, Small**]** Missile Impact per Miami–Dade County Building Code Compliance Office

 (BCCO) protocol (TAS-201), Florida Building Code HVHZ (TAS-201) [and, or] ASTM E 1996

 2. Cyclic Load Test per Miami–Dade County Building Code Compliance Office (BCCO) protocol

 (TAS-203), Florida Building Code HVHZ (TAS-203) [and, or] ASTM E 1886 test requirements.

 3. Uniform Static Load Test per Miami-Dade County Building Code Compliance Office (BCCO)

 protocol (TAS-202), Florida Building Code HVHZ (TAS-202) [and, or] ASTM E 330.

 4. Forced Entry Resistance per current Florida Building Code test requirements.

 5. Provide components that have been previously tested in accordance with Miami-Dade County

 (BCCO) protocol TAS-201, TAS-202, and TAS-203, Florida Building Code HVHZ TAS-201,

 TAS-202, TAS-203 [and, or] ASTM E 1886 and 1996 test procedures.

 F. Laboratory Testing Requirements:

 Refer to Section 01 40 00 for requirements. An independent testing laboratory certified by

 Miami– Dade County Building Code Compliance Office (BCCO), Florida Building Code (FBC)

 and ASTM.

 G. Interface:

 1. Furnish inserts and anchoring devices, which need to be preset and built into structure by appropriate trade.

 2. Supply on timely basis to avoid delay in Work.

 3. Instruct other trades of proper location and position.

 4. Furnish setting drawings, diagrams, templates and installation instructions.

 5. Anchor design to accommodate minimum 1” (25.4mm) building structure tolerance in all directions

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*Include submittal requirements below, which are consistent with scope of project and*

*extent of work of this section. Only request submittals, which are absolutely necessary.*

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1.04 SUBMITTALS

 A. General: Submit in accordance with Section 01 30 00.

 B. Product Data:

 1. Submit manufacturer's descriptive literature for each manufactured product.

 2. Include information for factory finishes, hardware, accessories and other required components.

 [3. Include color charts for finish indicating manufacturer's standard colors available for selection.]

 C. Shop Drawings:

 1. Submit drawings indicating elevations, dimensions, arrangement of units, joint locations, detailed design, member profiles (including thermal breaks), member connections, fabrication, installation and finish of specified systems.

 2. Show following items where applicable:

 a. Details of special shapes and composite members

 b. Joint connections for framing systems and entrance doors

 c. Reinforcing

 d. Location of exposed fasteners

 e. Glazing methods and accessories

 f. Internal sealant requirements

 g. Anchorage

 h. Interfacing with building construction

 i. Clearly show where and how manufacturer's system deviates from Contract Drawings and these Specifications.

 D. Mock-up Drawings:

 Submit drawings for mock-ups; refer to Section 01 43 39 for mock-up requirements.

 E. Samples:

 1. Submit manufactures samples indicating quality of finish in required colors [and range].

2. Where normal texture or color variations are expected, include additional samples

 illustrating range of variation.

 3. Submit samples for each type of glass, (12 x 12 inch, 9305 mm x 9305 mm) size.

 [4. Submit samples of structural glazing gaskets, (12-inch, 9305 mm) lengths.

 5. Submit samples of sealants for color selection.]

 F. Test Reports or State Approval Documents: Submit certified or stamped copies of previous tests reports by independent laboratory substantiating performance of system, or state recognized approval documents based on certified testing. Include other supportive data as necessary.

 G. Qualification Data: Submit installer qualifications verifying years of experience.

 H. Certificates: Submit manufacturer's certification stating that installed system is in compliance with specified requirements.

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*Retain data within brackets in paragraph below for structural silicone glazed system.*

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 I. Manufacturer's Instructions: Submit manufacturer's printed installation instructions.

 J. Warranty: Submit specified warranties.

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*Include quality assurance requirements consistent with size and scope of project and*

*extent of work of this section. Edit following article accordingly.*

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1.05 QUALITY ASSURANCE

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*Oldcastle BuildingEnvelope****®*** *is unique in the industry in single source responsibility.*

*First, system design, extrusion, fabrication, and finishing occur at the same facility, and*

*under strict tolerances, assuring uniformity of profile and finishes between systems.*

*Second, Oldcastle BuildingEnvelope****®*** *products include a full array of storefronts, ribbon*

*windows, curtain walls, architectural windows, all glass entrances, sliding mall fronts,*

*sloped glazing, and flush faced aluminum framed doors, as well as all the monumental*

*and unit skylight products, allowing the designer and specifier a single source of*

*responsibility when combining products from any of these categories.*

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 A. Single Source Responsibility: To ensure quality of appearance and performance, obtain

 materials for systems from either a single manufacturer or from manufacturer(s)

 approved by systems manufacturer.

 B. Manufacturer Qualifications: Manufacturer should be experienced with products covered

 under this Section and capable of providing a doorsystem capable of meeting or

 exceeding the performance criteria noted in this Section.

 C. Engineer Qualifications: Professional Engineer registered and licensed in State where

 Project is located.

 D. Installer Qualifications: Installer should have successful experience in installation of

 products covered in this Section on similar projects in scope and size If requested by

 Owner, installer shall provide a reference list of similar completed projects.

 E. Perform work in accordance with AAMA SFM-1 "Aluminum Storefront and Entrance Manual".

 F. Conform to requirements of ANSI A117.1 and local amendments.

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*Depending on scope of work, mock-ups may not be required; retain and edit following*

*article accordingly. Ensure Section 01 43 39 includes details for each mock-up required.*

*Also, a pre-installation conference may not be required. Retain article below when*

*applicable and edit accordingly.*

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 1.06 PREINSTALLATION CONFERENCE

 A. Conduct pre-installation conference in accordance with Section 01 31 19.

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*Include submittal requirements below, which are consistent with scope of project and extent of*

*work of this section. Only request submittals that are absolutely necessary.*

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1.07 DELIVERY, STORAGE, AND HANDLING

 A. Comply with requirements of Sections 01 65 00 and 01 66 00.

 B. Protect finished surfaces to prevent damage.

 C. Do not use adhesive papers or sprayed coatings, which become firmly bonded when exposed to sun.

 D. Do not leave coating residue on surfaces.

 E. Replace damaged units.

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*Retain following paragraphs when glass is included as work of this section.*

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 [F. Deliver glass units with manufacturer's labels intact on interior side of glass. Ensure labels indicate glass thickness, unit location, glass strength and orientation of units in vertical position.

 G. Protect glass edges and corners to prevent chipping, cracking, and other similar damages.]

1.08 PROJECT CONDITIONS

 A. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.

1.09 WARRANTY

 A. Provide warranties in accordance with Section 01 78 36.

 B. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

 C. Warranty shall cover following:

 1. Complete watertight and airtight system installation within specified tolerances.

 2. Glass and glazing gaskets will not break or "pop" from frames due to design wind, expansion or

 contraction movement or structural loading.

 3. Glazing sealants and gaskets will remain free from abnormal deterioration or dislocation due to

 sunlight, weather or oxidation.

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*Delete paragraph below if high performance fluoropolymer finish not used.*

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 D. Provide written warranty stating organic coating finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer's descriptive standards for 5 years from date of Substantial Completion and agreeing to promptly correct defects.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS AND PRODUCTS

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*In this article, list the manufacturers acceptable for this project.*

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 A. Subject to compliance with requirements indicated, provide products by one of the following:

 **Oldcastle BuildingEnvelope®**

 **803 Airport Road**

 **Terrell, TX 75160**

 **(800) 869-4567**

 B. Substitutions: Submit under provisions of Section 01 63 00, a minimum of 10 days prior to bid date.

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*Edit the following paragraphs for appropriate system in each category and delete remaining.*

*Refer to Oldcastle BuildingEnvelope****®*** *technical literature for additional information.*

*When specifying manufacturer's standard product or manufacturer's standard product*

*with modifications, describe using manufacturer's name and model numbers.*

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 C. Acceptable Entrance Systems:

 StormMax™ [MSD-375 MEDIUM STILE DOORS, WSD-500 WIDE STILE DOORS]

2.02 FRAMING MATERIALS AND ACCESSORIES

 A. Aluminum:

 1. ASTM B221, alloy 6063-T6 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

 2. Minimum thickness of [0.080] inch for main framing members.

 B. Internal Reinforcing:

 1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.

 2. Shapes and sizes to suit installation.

 3. Shop or factory coat steel components after fabrication with alkyd type zinc chromate primer complying with FS TT-P-645.

 C. Inserts and Anchorage Devices:

 1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.

 2. Hot-dip galvanize steel assemblies after fabrication; comply with ASTM A123, 2.0 ounce minimum coating.

 D. Fasteners:

 1. Aluminum, non-magnetic stainless steel or other non-corrosive materials compatible with materials being fastened.

 2. Provide nuts or washers of design having means to prevent disengagement; deforming of fastener threads is not acceptable.

 3. Provide concealed fasteners wherever possible.

 4. For exposed locations, provide flathead fasteners with finish matching item fastened.

 E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

 F. Shims: Non-staining, non-ferrous, type as recommended by system manufacturer.

 G. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

 H. Touch-Up Primer for Galvanized Components: Zinc oxide conforming with FS TT-P-641.

 I. Glazing Gaskets:

 1. Compression type design, replaceable, molded or extruded, of neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM).

 2. Dow Corning 995 structural silicone sealant at glazing bead with FG-5188 EPDM spacer gasket.

 J. Weatherstripping:

 1. Provide WP-085 wool pile weathering in AS-6 adjustable astragal.

 2. Provide D-120 vinyl weatherstripping in bottom door rail.

2.03 GLASS AND GLAZING ACCESSORIES

 A. Refer to Sections 08 80 00 and 08 81 00.

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*Impact Resistant Doors have been tested with specific hardware including locks, panic devices,*

*thresholds, flush bolts and hinges. Reference test reports, NOA drawings, FBC approval*

*drawings or TDI approved drawings for approved hardware. All other hardware can be specified*

*here or in Section 08 71 00. However, all hardware should be installed by storefront and entrance*

*manufacturer, Coordinate requirements.*

*List each item of hardware to be furnished, Describe each item by giving manufacturer's name,*

*catalog number, size, finish and special features. Add, delete and edit as required.*

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2.04 DOOR HARDWARE

 A. Hardware Items:

 1. Pivot hinges: [Offset type [with intermediate]] [Center hung type].

 2. Butt hinges: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 3. Continuous gear hinge: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 3. Concealed overhead closers: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 4. Surface closers: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 5. Push bar: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 6. Pulls: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 7. Panic devices: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 8. Deadlocks: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 9. Dead-latch: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 10. Knob-lock: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 11. Cylinders: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 12. Electric strikes: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 13. Flush bolts: [ \_\_\_\_\_\_\_\_\_ ].

 14. Coordinators: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 15. Door holders: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 16. Stops: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 17. Kick-plates: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 18. Thresholds: [ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ].

 19. Weather-stripping: Manufacturer's standard.

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*Create a hardware set for each door. List each item of hardware proposed on a specific door*

*to form a hardware set. List item by title and quantity required per opening. Each set shall list*

*door openings to which set is applicable. Following hardware set is an example.*

*Edit as necessary and create additional sets as required by project conditions.*

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 **[**B. Hardware Set 1, each single door shall have:

 1. 1-1/2 pair butt hinges.

 2. 1 each deadlock.

 3. 1 each closer.

 4. 1 set push/pull bars.

 5. 1 each stop.

 6. 1 each threshold.**]**

2.05 SYSTEM FABRICATION

 A. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.

 B. Fabricate components true to detail and free from defects impairing appearance, strength or durability.

 C. Fabricate units to withstand loads, which will be applied when system is in place.

 D. Reinforce components as required at anchorage and support points, at joints, and at attachment points for interfacing work.

 E. Provide structural reinforcing within framing members where required to maintain rigidity and accommodate design loads.

 F. Separate dissimilar metals with protective coating or preformed separators to prevent contact and corrosion.

 G. Comply with Section 08 81 00 for glazing requirements.

 H. Entrance Doors:

 1. Fabricate with mechanical joints using internal [steel] reinforcing plates and shear blocks attached

 with fasteners and by welding.

1. Provide extruded aluminum glazing stops permanently anchored on silicone bead side and removable

on the opposite side.

 I. Hardware:

 [1. Receive hardware supplied in accordance with Section 08 71 00 and install in accordance with requirements of this Section.]

 2. Cut, reinforce, drill and tap frames and doors as required to receive hardware.

 3. Comply with hardware manufacturer's templates and instructions.

 4. Use concealed fasteners wherever possible.

 R. Welding:

 1. Comply with recommendations of the American Welding Society.

 2. Use recommended electrodes and methods to avoid distortion and discoloration.

 3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

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*Select and edit following items for appropriate finish; delete inapplicable types. Oldcastle*

*BuildingEnvelope****®*** *is a licensed applicator for all of the coating manufacturers listed below.*

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2.06 FINISHES

 A. Organic Coating (high performance fluorocarbon):

 1. Comply with requirements of AAMA 2605.

 2. Surfaces cleaned and given conversion coating pre-treatment prior to application of 0.3 mil dry film thickness of epoxy or acrylic primer following recommendations of finish coat manufacturer.

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*Note: A less expensive finish coat containing a minimum of 50% fluorocarbon resin is*

*also available, and meets AAMA 605.2, but with reduced performance over time.*

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 3. Finish coat of [50%, 70%] minimum fluorocarbon resin fused to primed surfaces at temperature recommended by manufacturer, 1.0 mil minimum dry film thickness.

 4. Acceptable coatings are Trinar by Akzo Coatings, Inc.; Nubelar by Glidden Company; Fluoroceram by Morton International, Inc.; Duranar by PPG Industries Inc.; and Fluropon by Valspar Corporation.

 5. Provide in either 2, 3, or 4 coat system as required for color selected.

 6. [Custom colors as selected by Architect.]

 \*\*\*\*\* OR \*\*\*\*\*

 [7. Manufacturer's standard colors as selected by Architect.]

 \*\*\*\*\* OR \*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

*Oldcastle BuildingEnvelope****®*** *utilizes a computer driven anodizing system, which*

*produces the closest color range available.*

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 B. Clear Anodized:

 1. Conforming to AA-M12C22A31 and AAMA 611.

 2. Architectural Class [I, II], etched, medium matte, clear anodic coating, [0.4, 0.7] mil minimum thickness.

 \*\*\*\*\* OR \*\*\*\*\*

 C. Color Anodized:

 1. Conforming to AA-M12C22A42 or A43 or A44 and AAMA 606.1 and 608.1.

 2. Architectural Class [I, II], etched, medium matte, [black, dark bronze, medium bronze, or light bronze] colored anodic coating, [0.4, 0.7] mil minimum thickness.

**PART 3 - EXECUTION**

3.01 EXAMINATION

 A. Examine conditions and proceed with Work in accordance with Section 01 40 00.

 B. Verify dimensions, tolerances, and method of attachment with other Work.

3.02 INSTALLATION

 A. Install in accordance with manufacturer's instructions and applicable provisions of AAMA SFM-1 "Aluminum Storefront and Entrance Manual".

 B. Align assemblies plumb and level, free of warp or twist, aligning with adjacent Work.

 C. Erection Tolerances:

 1. Limit variations from plumb and level:

 a. 1/8 inch in 10'-0" vertically.

 b. 1/8 inch in 20'-0" horizontally.

 2. Limit offsets in theoretical end-to-end and edge-to-edge alignment:

 a. 1/16 inch where surfaces are flush or less than 1/2 inch out of flush and separated by not more than 2 inches.

 b. 1/8 inch for surfaces separated by more than 2 inches.

 D. Install doors and hardware in accordance with manufacturer's printed instructions.

E. Set units plumb, level and true to line, without warp or rack of frame.

 F. Anchor securely in place, allowing for required movement, including expansion and contraction.

 G. Separate dissimilar materials at contract points, including metal in contact with masonry or concrete surfaces, with protective coating or preformed separators to prevent contact and electrolytic action.

 H. Set threshold in full bed of sealant. Set other members with internal sealants and baffles to provide weathertight construction.

 I. Coordinate installation of perimeter sealant and backing materials between assemblies and adjacent construction in accordance with requirements of Section 07 92 00.

 J. Glazing: Refer to requirements of Section 08 81 00.

3.03 ADJUSTING

 a. Test door operating functions. Adjust closing and latching speeds and other hardware in accordance with manufacturer's instructions to ensure smooth operation.

3.04 CLEANING

 A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, foreign materials and other unsightly marks.

 B. Clean metal surfaces exercising care to avoid damage.

 **END OF SECTION**