

ADDENDUM #01

August 4, 2026

Project: CAMPUS, WINDOWS & DOOR REPLACEMENT
WILDLAND FIRE RAPID CITY DISTRICT OFFICE
RAPID CITY, SOUTH DAKOTA
OSE# W2526--02X/SWMR

Bid Opening: August 20, 2026
02:00 PM CT

At: Office of the State Engineer
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501-3182

Owner: State of South Dakota, Department of Public Safety

Scope of this Addendum:

The following becomes a part of the original Project Manual, taking precedence over items that may conflict. The bidder shall note receipt and make acknowledgment of the addendum in their bid and incorporating its provisions in their bid price.

- Item No. 1 Door #100 shall have 1" Insulating Laminated Glass integral to the door.
- Item No. 2 Door #102 shall have 1" Insulating Laminated Glass for Sidelights & Transom.
- Item No. 3 Door #103 shall have 1" Insulating Laminated Glass integral to the door and sidelights.
- Item No. 4 Door #105 shall have 1" Insulating Laminated Glass for Sidelights & Transom.

Item No. 5 Updated Door & Frame Schedule, All Exterior Doors will be either Hardware Set 26 or Set 37

DOOR AND FRAME SCHEDULE																		
DOOR								FRAME						FIRE RATING	HARDWARE		NOTES	
MARK	SIZE			MATL	EL	GLZ	LOUVER		MATL	EL	GL	DETAIL			SET NO	KEYSIDE RM NO		
	W	HT	THK				WT	HT				HEAD	JAMB					SILL
100	6'	7'	0'-1 3/4"	AL	A	INSUL			AL	2	INSUL	4/602			26		SEE SPECIAL NOTE BELOW	
101	6'	7'	0'-1 3/4"		H	INSUL			HM	4	1/4"	1/602			2		INT. ENTRANCE DOOR	
102	3'	7'	0'-1 3/4"		D	EX			EX-HM	EX-HM		-			37		SEE SPECIAL NOTE BELOW	
103	3'	7'	0'-1 3/4"	AL	A	INSUL			AL	1	INSUL	4/602			37		ENTRANCE DOOR	
104	3'	7'	0'-1 3/4"	HM	B	1/4"			HM	1	1/4"	3/602			12		INT. ENTRANCE DOOR	
105	3'	7'	0'-1 3/4"	HM	F	INSUL			HM	3		5/602			37		EXIT DOOR	
106	3'	7'	0'-1 1/4"	HM		NONE						4/A-301			37			
107	3'	7'	0'-1 1/4"	HM		NONE						4/A-301			37			
110	3'	7'	0'-1 1/4"	HM		NONE									37			
NOTE: VERIFY MEASUREMENTS BEFORE ORDERING																		

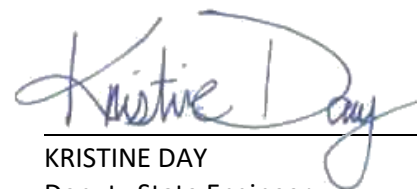
Item No. 6 Doors #100 & #103 will be Replaced with New Doors & Frames

Item No. 7 Doors #100 & #103 will be a Clear Anodized Finish

Item No. 8 Update Spec Section 087000 - Door Hardware (originally missing page 1)

Item No. 9 Update to include Spec Section 088000 - Glazing

Item No. 10 Approved Substitution: Section 084100 - Aluminum Entrances and Storefronts.
- Manko Window Systems, Inc. is added to the approved available manufacturers.



KRISTINE DAY
Deputy State Engineer
Office of the State Engineer



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SECTION 08700 - DOOR HARDWARE

PART 1-GENERAL

1.01 Work Included

- A) The work under this section shall include the furnishing of all items show on the drawing and specifications, but not limited to:
 - 1) Supplying finish hardware
 - 2) Keying as required
 - 3) Hardware as required to meet building and fire codes.

1.02 Related Sections

- A) 08100 Steel Doors & Frames
- B) 08210 Flush Wood Doors

1.03 Products Furnished

Products included in this section are:

- A) Hinges
- B) Locksets & latchsets
- C) Exit Devices
- D) Door closers
- E) Door gasketing (smokeseal)
- F) Thresholds
- G) Weatherstrip
- H) Door stops
- I) Door Protection (kickplates)

1.04 Submittals

- A) Provide submittals per specification 1300.
- B) Hardware submittal to be in standard vertical form
- C) Opening numbers to match architect's numbering on door schedule and floor plan. Degree of openings will be provided.
- D) Clearly identify in submittal hardware conflicts in size, function, compatibility of mounting locations (i.e. a)overlapping hardware mounting conditions; b)conflicts with door thickness; c)conflicts with vision locations).
- E) Each opening will be clearly identified by plan location, architectural handing, size of opening, fire rating, frame material, door material, and door thickness.
- F) Hardware supplied must be Americans with Disabilities Act compliant.
- G) Hardware supplied to be certified by UL/WHI at fire rated assemblies.
- H) A separate submittal with preliminary keying schedule using keying designations as per DHI "Keying Systems and Nomenclature" Keying to be coordinated with Architect and Owner requirements.

1.05 Product Handling

- A) All hardware items are to be individually marked with Opening number
- B) Hardware items are to be individually packaged and have manufacturer's name and item name matching hardware schedule.
- C) Hardware to be delivered to job site to project superintendent. Control handling of hardware items so completion of work will not be delayed by loss or handling.
- D) All keys will be individually stamped with corresponding key schedule code.
- E) Keys will be nickel/silver. 3 cut keys per cylinder and 4 masterkeys shall be provided.

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- F) Contractor will inspect hardware upon delivery to job site. Inspect to make sure all hardware items have been provided. Reject any damaged or flawed hardware prior to installation.
- G) Furnish Owner will Operation and Maintenance information for operable hardware. Include any specialized tools required for adjusting or maintaining hardware.

1.06 Execution

- A) An approved hardware schedule and preparation templates will be provided to the Steel Door & Frame supplier. Answer all inquiries as to hardware mounting and templates.
- B) Contractor to verify that Steel Doors & Frames and Wood Doors & Frames are properly prepared and mortised for hardware prior to installation. Resolve any discrepancies prior to installation of hardware.
- C) Mount door closers, overhead stops, floor stops as required to meet degree of opening per hardware schedule.
- D) Mount doors closers opposite of corridor.
- E) Mount all hardware per installation instructions and templates provided. All door closers, locks, exit devices and operable hardware must work freely.
- F) Mount all hardware level, plumb and true to opening and location.
- G) Drill & countersink units that are not factory prepared for anchorage.
- H) Locks and Exit Device levers must not bind or droop.
- I) Replace defective, flawed or inoperable hardware.
- J) Contractor's hardware installers to be persons with at least one year of commercial hardware installation experience.
- K) Hardware supplier to replace and Contractor to install all defective material within specified warranty period.

PART 2- PRODUCTS

- A) Manufacturers: Available manufacturers are as follows: (Substitutions will be allowed per general specifications:
 - 1) Hinges and Butts: Hager, Stanley, Bommer
ANSI/BHMA 156.1
 - 2) Locks & Cylinders: Best 9K3 x 626 with 4 7/8" ANSI Strike, Dorma
CL800-IC ANSI/BHMA 156.2 (Match State of SD Existing IC Keying System-
Incorporate into existing GMK System).
 - 3) Exit Devices: Precision 2100, Dorma 9000, Sargent 8000, Von Duprin 98
Series
 - 4) Overhead Closers: Stanley, Dorma, LCN
ANSI/BHMA 156.4
 - 5) Weatherstrip/thresholds/smoke seal/sound seals: Hager, Reese, Pemko,
National Guard
ANSI/BHMA 156.16
 - 6) Kickplates/Push Plates/Pulls: Burns, Hager, Rockwood
ANSI/BHMA 156.16
 - 10) Materials & Finishes: ANSI/BHMA 156.18
- B) Materials & Fabrication
 - 1) Finish for this project is US26D Satin Chrome (BHMA 652 on steel;
BMHA 626 on Brass; 689 Paint Finish for Door Closers; 630 Stainless steel for
exit devices and kickplates.)
 - 2) Outswing Exterior Doors: Non-Removable Pin Hinges
 - 3) Outswing Locking Doors: Non-Removable Pin Hinges
 - 4) Balance of hinges: Non Rising Pins.
 - 5) Kickplates are 10" in height (door width minus two inches at single doors or
door width minus one inch at pairs)

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- 6) Exposed hardware mounting fasteners and screws to match finish of hardware.
- 7) Exposed hardware mounting fasteners and screws to match finish of hardware.
- 8) 10 year warranty for door closers
- 9) 3 year warranty for locksets
- 10) Keys: Nickel Silver- Stamped "Do Not Duplicate"
 - 0 additional Masters
 - 2 each Change Keys per Lock (20 Keys Total)
 - 2 each Control Keys

PART 3- HARDWARE GROUPS

Hardware Group #1 (Aluminum Exterior Pair of Doors)

Each Opening: (G001 & 001)

*Door hardware (Concealed Vertical Rods, Pivots,
Door Closers with Heavy Duty Arms, Weather strip, sweeps and thresholds by Aluminum Door Supplier).*

2 each 1E72 or 1E74 as required x 626 Cylinders with Cores supplied by 08710 Hardware supplier keyed to system.

Hardware Group #2 (Pair of Hollow Metal Doors- Vestibule)

Per Opening: (003)

- 6 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D x NRP (hinges)
- 2 each Hager 282D x US26D (top & bottom flush bolts)
- 1 each Best 83T7M x STK x US26D (double cylinder deadbolt)
- 2 each Stanley D-3550 x 689 (door closers)
- 2 each Hager 159D x US32D (Offset Push/Pull Set)
- 2 each Reese 92C x 7 ft (Astragal set)
- 1 each Reese DS70C x 72" x 84 (Neoprene Weatherstrip)
- 2 each Reese 323C x 36" (Neoprene Sweep)
- 1 each Reese S404A-72" (Saddle Threshold- 1/4" x 4")

Hardware Group #3 (Single Exterior HM Door)

Per Opening: (006, G003)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D x NRP (hinges)
- 1 each Best 9K3-7R15D x S3 US26D (Classroom Lever)
- 1 each Stanley D-4550-CS x 689 (door closer)
- 1 each Reese DS70C x 36" x 84 (Neoprene Weatherstrip)
- 1 each Reese 323C x 36" (Neoprene Sweep)
- 1 each Reese S205A x 36" (Threshold)

Hardware Group #4 (Single Interior Door-Office-NR)

Per Opening: (007, 008, 009, 011, 012, 013)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Best 7K3-7AB15D x * x US26D (Office/Entry Lever)
 - * Strike as needed to fit existing wood frame
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #5 (Single Interior Door-Office-20 Min)

Per Opening: (G005, G006, G007, G008, G011, G012, G013, G015, G016, G017)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Stanley D-3551 x 689 x SN (Door Closer)

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- 1 each Best 7K3-7AB15D x S3 x US26D (Classroom Lever)
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #6 (Single Interior Door-ADA Toilet-NR)

Per Opening: (014)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Best 7K3-0L15D x * x US26D (Privacy Lever)
* *Strike as needed to fit existing wood frame*
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #7 (Single Interior Door-Storeroom/Server-20 Min)

Per Opening: (G010, G021, G022)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Stanley D-3551 x 689 x SN (Door Closer)
- 1 each Best 7K3-7D15D x S3 x US26D (Storeroom Lever)
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #8 (Single Interior Door-Customer Toilet-20 Minute)

Per Opening: (G026)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Stanley D-3551 x 689 x SN (Door Closer)
- 1 each Best 7K3-0L15D x S3 x US26D (Privacy Lever)
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #9 (Single Interior Door-Classroom Lock-20 Min)

Work Room, Open Office, Break Room, Meeting Room

Per Opening: (G009, G014, G024, G028, G029)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Stanley D-3551 x 689 x SN (Door Closer)
- 1 each Best 7K3-7D15D x S3 x US26D (Storeroom Lever)
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop)

Hardware Group #10 (Single Interior Door-Public Toilet-20 Minute)

Per Opening: (G018, G019)

- 3 each Hager BB1279 x 4 1/2" x 4 1/2" x US26D (hinges)
- 1 each Stanley D-3551 x 689 x SN (Door Closer)
- 1 each Best 7K3-0N15D x S3 x US26D (Passage Lever)
- 1 each Reese 797B x 36" x 84 (smoke/sound seal)
- 1 each Hager 236W x US32D (Wall Stop) @ G018
- 1 each ABH 4423 x US32D (Overhead Stop) @ G019

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Hardware Group #11 (Aluminum Exterior Single Doors)

Each Opening: (G001)

Door hardware (Rim Panic, Pivots Door Closer with Heavy Duty Arms, Weather strip, sweeps and thresholds by Aluminum Door Supplier).

1 each 1E72 or 1E74 as required x 626 Cylinders with Core supplied by 08710 Hardware supplier keyed to system.

Hardware Group #12 (Pair of Single Metal Door- Vestibule)

Per Opening: (G002)

3 each Hager BB1279 x 4 ½" x 4 ½" x US26D x NRP (hinges)

1 each Best 83T7M x STK x US26D (double cylinder deadbolt)

1 each Stanley D-3550 x 689 (door closer)

1 each Hager 159D x US32D (Offset Push/Pull Set)

1 each Reese DS70C x 36" x 84 (Neoprene Weatherstrip)

1 each Reese 323C x 36" (Neoprene Sweep)

1 each Reese S404A-36" (Saddle Threshold- 1/4" x 4")

Hardware Group #13 (Single Stair Door-20 Minute)

Per Opening: (G023)

3 each Hager BB1279 x 4 ½" x 4 ½" x US26D x NRP (hinges)

1 each Stanley D-3551 x 689 x SN (Door Closer)

1 each Precision FL 2108 x 4908A x US32D (UL Fire Rim Panic)

1 each Reese 797B x 36" x 84 (smoke/sound seal)

1 each Hager 236W x US32D (Wall Stop)

END OF SECTION

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
1. Doors.
 2. Interior borrowed lites.

1.2 PERFORMANCE REQUIREMENTS

1. Design Wind Pressures: 90 mph.
2. Design Snow Loads: 110 lbs/square foot.
3. Vertical Glazing: For glass surfaces sloped 15 degrees or less from vertical, design glass to resist design wind pressure based on glass type factors for short-duration load.
4. Thickness of Patterned Glass: Base design of patterned glass on thickness at thinnest part of the glass.

1.3 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.

1.4 QUALITY ASSURANCE

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: **GANAs "Laminated Glazing Reference Manual"** and GANA's "Glazing Manual."
 2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
 3. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of **the SGCC or another certification agency acceptable to authorities having jurisdiction**. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other

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openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of **450 deg F (250 deg C)**, and the fire-resistance rating in minutes.

- D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.5 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: **10** years from date of Substantial Completion.

- B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: **10** years from date of Substantial Completion.

- C. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: **10** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

- A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.
- B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass **as needed to comply with "Performance Requirements" Article**. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass **as needed to comply with "Performance Requirements" Article**. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.

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- C. Windborne-Debris-Impact Resistance: Provide exterior glazing that passes **basic**-protection testing requirements in ASTM E 1996 for **Wind Zone 1** when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.
1. Large-Missile Test: For all glazing, regardless of height above grade.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as **Btu/sq. ft. x h x deg F (W/sq. m x K)**.
 2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
 3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.2 GLASS PRODUCTS

- A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.
1. Products: Subject to compliance with requirements, **provide the following**:
 - a. AFG Industries, Inc.; Krystal Klear.
 - b. Guardian Industries Corp.; Ultrawhite.
 - c. Pilkington North America; Optiwhite.
 - d. PPG Industries, Inc.; Starphire.
- B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.
- C. Pyrolytic-Coated, Self-Cleaning, Low-Maintenance Glass: Clear float glass with a coating on first surface having both photocatalytic and hydrophilic properties that act to loosen dirt and to cause water to sheet evenly over the glass instead of beading.
1. Products: Subject to compliance with requirements, **provide the following**:
 - a. AFG Industries, Inc.; Spotless Ti.
 - b. Cardinal Glass Industries; LoE2 Plus.
 - c. Pilkington North America; Activ.
 - d. PPG Industries, Inc.; SunClean.
- D. Reflective-Coated Vision Glass: ASTM C 1376, coated by **vacuum deposition (sputter-coating) process**, and complying with other requirements specified.
1. Glass: **Clear float**.

2.3 LAMINATED GLASS

- A. Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

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1. Construction: Laminate glass with **polyvinyl butyral interlayer** to comply with interlayer manufacturer's written recommendations.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

B. Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, with "Windborne-Debris-Impact Resistance" Paragraph in "Glass Products, General" Article, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with **one of** the following to comply with interlayer manufacturer's written recommendations:
 - a. Polyvinyl butyral interlayer.
 - b. Polyvinyl butyral interlayers reinforced with polyethylene terephthalate film.
 - c. Ionoplast interlayer.
 - d. Cast-in-place and cured-transparent-resin interlayer.
 - e. Cast-in-place and cured-transparent-resin interlayer reinforced with polyethylene terephthalate film.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

2.4 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190, and complying with other requirements specified.

1. Sealing System: Dual seal.

2.5 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from **one of** the following:

1. Neoprene complying with ASTM C 864.
2. EPDM complying with ASTM C 864.
3. Thermoplastic polyolefin rubber complying with ASTM C 1115.

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

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2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Colors of Exposed Glazing Sealants: **As selected by Architect from manufacturer's full range.**
- B. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.

2.7 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

- A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- F. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

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2.9 MONOLITHIC-GLASS TYPES

- A. Glass Type: Clear **float glass**.
 - 1. Thickness: **6.0 mm**.
 - 2. Provide safety glazing labeling.
- B. Glass Type [GL-<#>]: Pyrolytic-coated, self-cleaning, low-maintenance, clear **fully tempered float glass**.
 - 1. Thickness: **6.0 mm**.
 - 2. Provide safety glazing labeling.

2.10 LAMINATED-GLASS TYPES

- A. Glass Type: Clear laminated glass with two plies of **fully tempered float glass**.
 - 1. Thickness of Each Glass Ply: **4.0 mm**.
 - 2. Interlayer Thickness: **0.030 inch (0.76 mm)**.
 - 3. Provide safety glazing labeling.
 - 4. Provide safety glazing labeling.
- B. Glass Type: Low-e-coated, laminated vision glass with two plies of clear **float glass**.
 - 1. Thickness of Each Glass Ply: **3.0 mm**.
 - 2. Interlayer Thickness: **0.030 inch (0.76 mm)**.
 - 3. Low-E Coating: **Pyrolytic on second** surface.
 - 4. Provide safety glazing labeling.

2.11 INSULATING-GLASS TYPES

- A. Glass Type: Pyrolytic-coated, self-cleaning, low-maintenance, clear insulating glass.
 - 1. Overall Unit Thickness: **1 inch (25 mm)**.
 - 2. Thickness of Each Glass Lite: **3.0 mm**.
 - 3. Outdoor Lite: Pyrolytic-coated, self-cleaning, low-maintenance, clear **float glass**.
 - 4. Interspace Content: **Argon**.
 - 5. Indoor Lite: **Float glass**.
 - 6. Provide safety glazing labeling.
- B. Glass Type: Low-e-coated, clear insulating glass.
 - 1. Overall Unit Thickness: **5/8 inch (16 mm)**.
 - 2. Thickness of Each Glass Lite: **40 mm**.
 - 3. Interspace Content: **Argon**.
 - 4. Indoor Lite: **Float glass**.
 - 5. Low-E Coating: **Pyrolytic on second** surface.
 - 6. Provide safety glazing labeling.
 - 7. Provide safety glazing labeling.

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2.12 INSULATING-LAMINATED-GLASS TYPES

- A. Glass Type: Reflective-coated, clear, insulating laminated glass.
1. Overall Unit Thickness: **1 inch (25 mm)**.
 2. Thickness of Outdoor Lite: **6.0 mm**.
 3. Outdoor Lite: Clear **heat-strengthened float glass**.
 4. Interspace Content: **Argon**.
 5. Indoor Lite: Clear laminated glass with two plies of **float glass**.
 - a. Thickness of Each Glass Ply: **3.0 mm**.
 - b. Interlayer Thickness: **0.030 inch (0.76 mm)**.
 6. Coating Location: **First** surface.
 7. Provide safety glazing labeling.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than **50 inches (1270 mm)**.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

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3.2 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Apply heel bead of elastomeric sealant.
- F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.4 CLEANING AND PROTECTION

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

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- B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION