

SECTION 08 80 00**GLAZING****PART 1 - GENERAL****1.1 DESCRIPTION**

This section specifies glass, plastic, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

1.2 RELATED WORK

A. Factory glazed by manufacturer in following units:

1. Sound resistant doors: Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, and Section 08 14 00, WOOD DOORS.
2. Mirrors: Section 10 28 00, TOILET, BATH, AND LAUNDRY ACCESSORIES.
3. Lead glass: Section 13 49 00, RADIATION PROTECTION.
4. Section 08 51 13, ALUMINUM WINDOWS
5. Section 08 44 13, GLAZED ALUMINUM CURTAIN WALLS.
6. Color of spandrel glass, tinted (heat absorbing or light reducing) glass, and reflective (metallic coated) glass: Section 09 06 00, SCHEDULE FOR FINISHES.
7. Section 28 13 11, PHYSICAL ACCESS CONTROL SYSTEMS.
8. Section 28 16 11, INTRUSION DETECTION SYSTEM.

1.3 LABELS

A. Temporary labels:

1. Provide temporary label on each light of glass identifying manufacturer or brand and glass type, quality and nominal thickness.
2. Label in accordance with NFRC (National Fenestration Rating Council) label requirements.
3. Temporary labels shall remain intact until glass is approved by Resident Engineer.

B. Permanent labels:

1. Locate in corner for each pane.
2. Label in accordance with ANSI Z97.1 and SGCC (Safety Glass Certification Council) label requirements.
 - a. Tempered glass.
 - b. Laminated glass or have certificate for panes without permanent label.
 - c. Organic coated glass.

1.4 PERFORMANCE REQUIREMENTS

- A. Building Enclosure Vapor Retarder and Air Barrier:
 - 1. Utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapor retarder seal.
 - 2. Maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
- B. Glass Thickness:
 - 1. Select thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with applicable code.
 - 2. Test in accordance with ASTM E 1300.
 - 3. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

1.5 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Certificates:
 - 1. Certificates stating that wire glass, meets requirements for safety glazing material as specified in ANSI Z97.1.
 - 2. Certificate on shading coefficient.
 - 3. Certificate on "R" value when value is specified.
 - 4. Certificate test reports confirming compliance's with specified bullet resistive rating.
 - 5. Certificate that blast resistant glass meets the requirements of UFC4-010-01.
- C. Warranty: Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.
- D. Manufacturer's Literature and Data:
 - 1. Glass, each kind required.
 - 2. Insulating glass units.
 - 3. Transparent (one-way vision glass) mirrors.
 - 4. Elastic compound for metal sash glazing.
 - 5. Glazing cushion.
 - 6. Sealing compound.
- E. Samples:
 - 1. Size: 150 mm by 150 mm (6 inches by 6 inches).
 - 2. Tinted glass.

- 3. Reflective glass.
- 4. Transparent (one-way vision glass) mirrors.
- F. Preconstruction Adhesion and Compatibility Test Report: Submit glazing sealant manufacturer's test report indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.
- G. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.1: For glazing sealants used inside of the weatherproofing system, including printed statement of VOC content.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.
- B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.
- C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators between each.
- D. Protect laminated security glazing units against face and edge damage during entire sequence of fabrication, handling, and delivery to installation location. Provide protective covering on exposed faces of glazing plastics, and mark inside as "INTERIOR FACE" or "PROTECTED FACE":
 - 1. Treat security glazing as fragile merchandise, and packaged and shipped in export wood cases with width end in upright position and blocked together in a mass. Storage and handling shall comply with Manufacturer's directions and as required to prevent edge damage or other damage to glazing resulting from effects of moisture, condensation, temperature changes, direct exposure to sun, other environmental conditions, and contact with chemical solvents.
 - 2. Protect sealed-air-space insulating glazing units from exposure to abnormal pressure changes, as could result from substantial changes in altitude during delivery by air freight. Provide temporary breather tubes which do not nullify applicable warranties on hermetic seals.
 - 3. Temporary protections: The glass front and polycarbonate back of glazing shall be temporarily protected with compatible, peelable,

heat-resistant film which will be peeled for inspections and re-applied and finally removed after doors and windows are installed at destination. Since many adhesives will attack polycarbonate, the film used on exposed polycarbonate surfaces shall be approved and applied by manufacturer.

4. Edge protection: To cushion and protect glass clad, polycarbonate, and Noviflex edges from contamination or foreign matter, the four edges shall be sealed the depth of glazing with continuous standard-thickness Santoprene tape. Alternatively, continuous channel shaped extrusion of Santoprene shall be used, with flanges extending into face sides of glazing.
5. Protect "Constant Temperature" units including every unit where glass sheet is directly laminated to or directly sealed with metal-tube type spacer bar to polycarbonate sheet, from exposures to ambient temperatures outside the range of 16 to 24 C, during the fabricating, handling, shipping, storing, installation, and subsequent protection of glazing.

1.7 PROJECT CONDITIONS

Field Measurements: Field measure openings before ordering tempered glass products. Be responsible for proper fit of field measured products.

1.8 WARRANTY

- A. Warranty: Conform to terms of "Warranty of Construction", FAR clause 52.246-21, except extend warranty period for the following:
 1. Bullet resistive plastic material to remain visibly clear without discoloration for 10 years.
 2. Insulating glass units to remain sealed for 10 years.
 3. Laminated glass units to remain laminated for 5 years.
 4. Polycarbonate to remain clear and ultraviolet light stabilized for 5 years.
 5. Insulating plastic to not have more than 6 percent decrease in light transmission and be ultraviolet light stabilized for 10 years.

1.9 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):

Z97.1-04.....Safety Glazing Material Used in Buildings,
Safety Performance Specifications and Methods
of Test.

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

C1363-05.....Thermal Performance of Building Assemblies, by
Means of A Hot Box Apparatus

C542-05.....Lock-Strip Gaskets.

C716-06.....Installing Lock-Strip Gaskets and Infill
Glazing Materials.

C794-06.....Adhesion-in-Peel of Elastomeric Joint Sealants.

C864-05.....Dense Elastomeric Compression Seal Gaskets,
Setting Blocks, and Spacers.

C920-08.....Elastomeric Joint Sealants.

C964-07.....Standard Guide for Lock-Strip Gasket Glazing.

C1036.....Standard Specification for Flat Glass.

C1048.....Standard Specification for Heat-Treated Flat
Glass-Kind HS, Kind FT Coated and Uncoated
Glass.

C1172-09.....Laminated Architectural Flat Glass.

C1376.....Standard Specification for Pyrolytic and Vacuum
Deposition Coatings on Glass.

D635-06.....Rate of Burning and/or Extent and Time of
Burning of Self-Supporting Plastic in a
Horizontal Position.

D4802-02.....Poly (Methyl Methacrylate) Acrylic Plastic
Sheet.

E84-09.....Surface Burning Characteristics of Building
Materials.

E773.....Standard Test Method for Accelerated Weathering
of Sealed Insulating Glass Units.

E774.....Standard Specification for the Classification
of the Durability of Sealed Insulating Glass
Units

E1300-09.....Determining Load Resistance of Glass in
Buildings.

E2188.....Standard Test Method for Insulating Glass Unit
Performance.

E2190.....Standard Specification for Insulating Glass
Unit Performance and Evaluation.

D. Commercial Item Description (CID):

A-A-59502.....Plastic Sheet, Polycarbonate

E. Code of Federal Regulations (CFR):

16 CFR 1201 - Safety Standard for Architectural Glazing Materials;
1977, with 1984 Revision.

F. National Fire Protection Association (NFPA):

80-08.....Fire Doors and Windows.

G. National Fenestration Rating Council (NFRC)

H. Safety Glazing Certification Council (SGCC)2009:

Certified Products Directory (Issued Semi-Annually).

I. Underwriters Laboratories, Inc. (UL):

752-06.....Bullet-Resisting Equipment.

J. Unified Facilities Criteria (UFC):

4-010-01-2007.....DOD Minimum Antiterrorism Standards for
Buildings

K. Glass Association of North America (GANA):

Glazing Manual (Latest Edition)

Sealant Manual (2008)

L. American Society of Civil Engineers (ASCE):

ASCE 7-10.....Wind Load Provisions

M. CPSC 16CFR-1201 - Safety Standard for Architectural Glazing Materials.

1.10 DEFINITIONS

A. Sealed Insulating Glass Unit Surfaces:

1. Surface No. 1: Exterior surface of outer lite.
2. Surface No. 2: Interior surface of outer lite.
3. Surface No. 3: Exterior surface of inner lite.
4. Surface No. 4: Interior surface of inner lite.

B. Airspace: Space between lites of an insulating glass unit that contains dehydrated air or other inert specified gas.

1.11 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Minimum of 5 years experience manufacturing solar control coated glass.

B. Fabricator's Qualifications:

1. Minimum of 5 years experience manufacturing sealed insulating glass units meeting ASTM E 2190, Class CBA.
2. Certified by manufacturer.

C. Mock-Ups:

1. Comply with Section 01450 - Quality Control.
2. Obtain acceptance of mock-ups by Architect before proceeding with work.

D. Substitutions: No substitution will be considered unless the architect has received a request for approval in writing.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. The design is based on the following product: Guardian Industries Corp., 11535 E. Mountain View Ave., Kingsburg, California 93631. Toll Free (800) 955-4567. Phone (559) 891-4119. Fax (248) 758-6177. Web Sites www.guardian.com, www.sunguardglass.com.

REV 072213

B.

- C. Requests for substitutions must comply with provisions of Paragraph 1.11 D.

2.2 GLASS

- A. Use thickness stated unless specified otherwise in assemblies.
- B. Clear Glass:
1. ASTM C1036, Type I, Class 1, Quality q3.
 2. Thickness, 6 mm (1/4 inch).

2.3 HEAT-TREATED GLASS

- A. Clear Heat Strengthened Glass:
1. ASTM C1048, Kind HS, Condition A, Type I, Class 1, Quality q3.
 2. Thickness, 6 mm (1/4 inch).
- B. Tinted Heat Strengthened Glass:
1. ASTM C1048, Kind HS, Condition A, Type I, Class 2, Quality q3.
 2. Thickness, 6 mm (1/4 inch).
- C. Clear Tempered Glass:
1. ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3.
 2. Thickness, 6 mm (1/4 inch).
- D. Tinted Tempered Glass.
1. ASTM C1048, Kind FT, Condition A, Type I, Class 2, Quality q3.
 2. Thickness, 6 mm (1/4 inch).
- E. Tempered Patterned Glass (obscure):
1. ASTM C1048, Kind FT, Type II, Class 1, Form 3, Quality q8, Finish f1, Pattern p3.
 2. Thickness 10.7 mm (0.422 inch).

2.4 INSULATING GLASS UNITS

- A. Double-Glazed Sputter-Coated Insulating Glass Units:
 - 1. Conformance: ASTM E 2190, Class CBA.
 - 2. Outboard Lite: Sputter-coated clear float glass.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.
 - b. Vacuum Deposition Sputtered Coating: ASTM C 1376.
 - c. Coating on Surface No. 2: SunGuard SuperNeutral 68 (SN 68).
 - d. Glass Thickness: 6 mm (1/4 inch).
 - f. Heat Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.
 - 3. Air Space: 12 mm (1/2 inch) wide, hermetically sealed, dehydrated air space.
 - 4. Inboard Lite: Clear float glass.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.
 - b. Glass Thickness: 6 mm (1/4 inch).
 - d. Heat-Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.
 - 5. Glass Unit Performance Characteristics:
 - a. Visible Light Transmittance: 68 percent
 - b. Visible Light Reflectance Outdoors: 11 percent
 - c. Direct Solar Energy Transmittance: 33 percent
 - d. Direct Solar Energy Reflectance Outdoors: 32 percent
 - e. Winter U-Value Nighttime: 0.29
 - f. Summer U-Value Daytime: 0.28
 - g. Shading Coefficient: 0.43
 - h. Solar Heat Gain Coefficient: 0.38
 - i. Summer Relative Heat Gain: 90
 - 6. Edge Seals: ASTM E 773, with aluminum spacers and silicone sealant for glass-to-spacer seals.
 - 7. Sealant: Approved by glass manufacturer.
- B. Double-Glazed Sputter-Coated Insulating Glass Units with an Acid Etched Inboard Lite:
 - 1. Conformance: ASTM E 2190, Class CBA.
 - 2. Outboard Lite: Sputter-coated clear float glass.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.

- b. Vacuum Deposition Sputtered Coating: ASTM C 1376.
 - c. Coating on Surface No. 2: SunGuard SuperNeutral 68 (SN 68).
 - d. Glass Thickness: 6 mm (1/4 inch).
 - f. Heat Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.
- 3. Air Space: 12 mm (1/2 inch) wide, hermetically sealed, dehydrated air space.
- 4. Inboard Lite: SunGuard SatinDeco Acid Etched glass.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.
 - b. Acid Etched surface on Surface #3: SunGuard SatinDeco on clear float glass.
 - c. Glass Thickness: 6 mm (1/4 inch).
 - e. Heat-Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.
- 5. Glass Unit Performance Characteristics:
 - a. Visible Light Transmittance: 66 percent
 - b. Visible Light Reflectance Outdoors: 11 percent
 - c. Direct Solar Energy Transmittance: 32 percent
 - d. Direct Solar Energy Reflectance Outdoors: 32 percent
 - e. Winter U-Value Nighttime: 0.29
 - f. Summer U-Value Daytime: 0.27
 - g. Shading Coefficient: 0.43
 - h. Solar Heat Gain Coefficient: 0.38
 - i. Summer Relative Heat Gain: 90
- 6. Edge Seals: ASTM E 773, with aluminum spacers and silicone sealant for glass-to-spacer seals.
- 7. Sealant: Approved by glass manufacturer.
- C. Double-Glazed Sputter-Coated Insulating Glass Units with Spandrel:
 - 1. Conformance: ASTM E 2190, Class CBA.
 - 2. Outboard Lite: Sputter-coated clear float glass.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.
 - b. Vacuum Deposition Sputtered Coating: ASTM C 1376.
 - c. Coating on Surface No. 2: SunGuard SuperNeutral 68 (SN 68).
 - d. Glass Thickness: 6 mm (1/4 inch).
 - f. Heat Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.

3. Air Space: 12 mm (1/2 inch) wide, hermetically sealed, dehydrated air space.
4. Inboard Lite: Clear float glass with spandrel.
 - a. Annealed Clear Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.
 - b. Spandrel on Surface #3: ICD Opaci-Coat Standard Architectural Color. Color to be selected by architect. Mock-up of spandrel unit must be furnished for, and approved by, architect prior to installation.
 - c. Glass Thickness: 6 mm (1/4 inch).
 - e. Heat-Treatment: Fully tempered where required by code; ASTM C 1048, Kind FT; CPSC 16CFR-1201; ANSI Z 97.1.
5. Glass Unit Performance Characteristics:
 - a. Winter U-Value Nighttime: 0.29
 - b. Summer U-Value Daytime: 0.27
6. Edge Seals: ASTM E 773, with aluminum spacers and silicone sealant for glass-to-spacer seals.
7. Sealant: Approved by glass manufacturer.

2.5 FIRE RESISTANT GLASS WITHOUT WIRE MESH

- A. Fire resistant glass or glass assembly classified by UL in Building Materials Directory or other approved testing laboratory bearing permanent mark of classification.
- B. Firelite.
 1. UL listing R13377-1, 4.8 mm (3/16 inch) thick, unpolished.
 2. Distributed by Technical Glass Products; Kirkland, WA 98033.
- C. Pyrovue Commercial.
 1. UL listing R10178(N), 41 mm (1-5/8 inch) thick.
 2. Represented by Advanced Glass Systems Corporation, Trumbauersville, PA 18970-0051

2.6 GLAZING ACCESSORIES

- A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation. Ferrous metal accessories exposed in the finished work shall have a finish that will not corrode or stain while in service.
- B. Setting Blocks: ASTM C864:
 1. Channel shape; having 6 mm (1/4 inch) internal depth.
 2. Shore a hardness of 80 to 90 Durometer.

3. Block lengths: 50 mm (two inches) except 100 to 150 mm (four to six inches) for insulating glass.
 4. Block width: Approximately 1.6 mm (1/16 inch) less than the full width of the rabbet.
 5. Block thickness: Minimum 4.8 mm (3/16 inch). Thickness sized for rabbet depth as required.
- C. Spacers: ASTM C864:
1. Channel shape having a 6 mm (1/4 inch) internal depth.
 2. Flanges not less 2.4 mm (3/32 inch) thick and web 3 mm (1/8 inch) thick.
 3. Lengths: One to 25 to 76 mm (one to three inches).
 4. Shore a hardness of 40 to 50 Durometer.
- D. Sealing Tapes:
1. Semi-solid polymeric based material exhibiting pressure-sensitive adhesion and withstanding exposure to sunlight, moisture, heat, cold, and aging.
 2. Shape, size and degree of softness and strength suitable for use in glazing application to prevent water infiltration.
- E. Spring Steel Spacer: Galvanized steel wire or strip designed to position glazing in channel or rabbeted sash with stops.
- F. Glazing Clips: Galvanized steel spring wire designed to hold glass in position in rabbeted sash without stops.
- G. Glazing Points (Sprigs): Pure zinc stock, thin, flat, triangular or diamond shaped pieces, 6 mm (1/4 inch) minimum size.
- H. Glazing Gaskets: ASTM C864:
1. Firm dense wedge shape for locking in sash.
 2. Soft, closed cell with locking key for sash key.
 3. Flanges may terminate above the glazing-beads or terminate flush with top of beads.
- I. Lock-Strip Glazing Gaskets: ASTM C542, shape, size, and mounting as indicated.
- J. Glazing Sealants: ASTM C920, silicone neutral cure:
1. Type S.
 2. Class 25
 3. Grade NS.
 4. Shore A hardness of 25 to 30 Durometer.
- K. Structural Sealant: ASTM C920, silicone acetoxo cure:

1. Type S.
 2. Class 25.
 3. Grade NS.
 4. Shore a hardness of 25 to 30 Durometer.
- L. Neoprene, EPDM, or Vinyl Glazing Gasket: ASTM C864.
1. Channel shape; flanges may terminate above the glazing channel or flush with the top of the channel.
 2. Designed for dry glazing.
- M. Color:
1. Color of glazing compounds, gaskets, and sealants used for aluminum color frames shall match color of the finished aluminum and be nonstaining.
 2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted shall be black, gray, or neutral color.
- N. Smoke Removal Unit Targets: Adhesive targets affixed to glass to identify glass units intended for removal for smoke control. Comply with requirements of local Fire Department.

2.7 GLAZING SEALANTS:

- A. General: Provide products of type indicated, complying with the following requirements:
1. VOC Content: For sealants used inside of the weatherproofing system that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.
 2. Verify that glazing openings conform with details, dimensions and tolerances indicated on manufacturer's approved shop drawings.
- B. Advise Contractor of conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation: Do not proceed with installation until unsatisfactory conditions have been corrected.

- C. Verify that wash down of adjacent masonry is completed prior to erection of glass and glazing units to prevent damage to glass and glazing units by cleaning materials.

3.2 PREPARATION

- A. For sealant glazing, prepare glazing surfaces in accordance with GANA-02 Sealant Manual.
- B. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.
- C. Shop fabricate and cut glass with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.
- D. Verify that components used are compatible.
- E. Clean and dry glazing surfaces.
- F. Prime surfaces scheduled to receive sealants, as determined by preconstruction sealant-substrate testing.

3.3 INSTALLATION - GENERAL

- A. Install in accordance with GANA-01 Glazing Manual and GANA-02 Sealant Manual unless specified otherwise.
- B. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.
- C. Set glazing without bending, twisting, or forcing of units.
- D. Do not allow glass to rest on or contact any framing member.
- E. Glaze doors and operable sash, in a securely fixed or closed and locked position, until sealant, glazing compound, or putty has thoroughly set.
- F. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.
- G. Insulating Glass Units:
 - 1. Glaze in compliance with glass manufacturer's written instructions.
 - 2. When glazing gaskets are used, they shall be of sufficient size and depth to cover glass seal or metal channel frame completely.
 - 3. Do not use putty or glazing compounds.
 - 4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.
 - 5. Install with tape or gunnable sealant in wood sash.
- L. Fire Resistant Glass:
 - 1. Other fire resistant glass: Glaze in accordance with UL design requirements.

3.4 INSTALLATION - WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- A. Cut glazing tape to length and set against permanent stops, 5 mm (3/16 inch) below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at 1/4 points with edge block no more than 150 mm (6 inches) from corners.
- D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to achieve full contact at perimeter of pane or glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops, 6 mm (1/4 inch) below sight line. Place glazing tape on glazing pane or unit with tape flush with sight line.
- F. Fill gap between glazing and stop with silicone type sealant to depth equal to bite of frame on glazing, but not more than 9 mm (3/8 inch) below sight line.
- G. Apply cap bead of silicone type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.6 INSTALLATION - WET METHOD (SEALANT AND SEALANT)

- A. Place setting blocks at 1/4 points and install glazing pane or unit.
- B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 600 mm (24 inch) intervals, 6 mm (1/4 inch) below sight line.
- C. Fill gaps between glazing and stops with silicone type sealant to depth of bite on glazing, but not more than 9 mm (3/8 inch) below sight line to ensure full contact with glazing and continue the air and vapor seal.
- D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.7 INSTALLATION - EXTERIOR BUTT GLAZED METHOD (SEALANT ONLY)

- A. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.
- B. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.

- C. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- D. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- E. Remove masking tape.

3.8 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting 1.6 mm (1/16 inch) above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 150 mm (6 inches) from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at 600 mm (24 inch) intervals, 6 mm (1/4 inch) below sight line.
- E. Fill gaps between pane and applied stop with silicone type sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

3.9 REPLACEMENT AND CLEANING

- A. Clean new glass surfaces removing temporary labels, paint spots, and defacement after approval by Resident Engineer.
- B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
- C. Leave glass, putty, and other setting material in clean, whole, and acceptable condition.

3.10 PROTECTION

Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

3.13 GLAZING SCHEDULE

- A. Install all respective glazing types at the locations indicated in the drawings.

- - - E N D - - -