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SECTION 08820 or 08825 Decorative Glass

SECTION 08820 / 08825 - DECORATIVE GLASS, (Copyright 2005, Dazzle Glazz Studio, LLC)

PART 1 GENERAL

1.1 SECTION INCLUDES the following type(s) of art glass on this project:

- A. Leaded art glass
- B. Inlaid (laminated) art glass
- C. Faceted (dalle de verre) art glass
- D. Etched art glass
- E. Obscure art glass
- F. Fused art glass
- G. Dichroic glass
- H. Decorative mosaic glass

1.2 DEFINITIONS

.....Note to specifiers.....delete sections below not applicable

- A. Manufacturer is used in this section to refer to a company that produces architectural art glass as defined in the referenced glazing standard.
- B. Leaded art glass means glass that is nominally 1/8" thick and cut into small pieces that are held together with a lead channel soldered at each joint. Putty brushed into any voids between the glass and lead channel. The glass may be clear or colored, unpainted or painted. Elements of etched, fused, obscure, iridescent, beveled or dichroic glass may be included.
- C. Inlaid (laminated) art glass means pieces of nominally 1/8" thick glass bonded to a substrate layer of plate glass by a hardened laminating liquid, either epoxy or UV curing resin. The 1/8" layer may be large or small pieces of glass. The spaces between the pieces are filled with an epoxy or UV curing grout.
- D. Faceted (dalle de verre) art glass means chunks of glass composed into a design and set into a medium of epoxy approximately 3/4" thick. The chunks are composed of slabs of glass nominally 8" x 10" x 3/4" maximum, or smaller portions of these slabs.
- E. Etched art glass mean glass that has had its surface modified by abrasive blast or acid.

- F. Fused glass refers to glass that is made by the partial melting of one layer of glass so that it bonds with an another adjacent layer of glass.
- G. Obscure art glass means glass with a surface variation that bends or distorts the path of light through it, thereby restricting (obscuring) the visibility of objects on the other side of the glass.
- H. Dichroic glass means glass that reflects one color and transmits another color. Also glass whose color transmitted or reflected varies by viewing angle. Dichroic glass refers either to glass coated with a thin layer of metallic atoms that cause the dichroic effect or to glass that is laminated with a film that produces the same effect.
- I. Decorative Mosaic Glass means any assemblage of pieces of glass used to form a design by reflected light and the pieces are secured from behind the reflective surface. The assemblage may use grout between the pieces of glass, depending on the design. This is more a decorative use of glass instead of a fenestration use.

1.3 RELATED SECTIONS

- A. Section 06200 - Finish Carpentry.
- B. Section 07900 - Joint Sealers.
- C. Section 08110 - Steel Doors and Frames.
- D. Section 08211 - Flush Wood Doors.
- E. Section 08410 - Metal-Framed Storefronts
- F. Section 08800 - Glazing: Glazing methods
- G. Section 08910 - Metal-Framed Curtain Wall.

1.3 REFERENCES

- A. ANSI Z97.1 - American National Standard for Glazing Materials Used in Buildings -- Safety Performance Specifications and Methods of Test.
- B. ASTM C 1036 - Standard Specification for Flat Glass.
- C. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass
- D. GANA (GM) - GANA Glazing Manual; Glass Association of North America.

1.4 PERFORMANCE REQUIREMENTS

- A. Leaded, etched, fused, or obscure glass shall be installed by double stop glazing method on the interior side of an architectural glazing and shall be capable of withstanding normal thermal movements and its own dead loads without failure, including loss due to defective manufacture, fabrication and installation. All live loads shall be borne by the primary exterior glazing.
- B. Faceted glass shall be of nominal thickness 3/4". Each undivided area to be glazed shall not exceed 15 square-feet. When installed in accordance with the glazing system, it shall be

capable of withstanding normal thermal movements and its own dead loads without failure, including loss due to defective manufacture, fabrication and installation.

- C. Inlaid (laminated) glass shall be of thickness to conform to the requirements of the glazing system and shall be determined by the glazing system manufacturer. Confirm glass thickness by analyzing in-service requirements. Glass shall be capable of withstanding normal thermal movements and dead and live loads without failure, including loss due to defective manufacture, fabrication and installation.
- D. Fused glass elements shall be free from excessive stresses as viewed with polarized light stress analyzer.
- E. Decorative mosaic glass shall withstand the elements if mounted outdoors.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Renderings of the design detail indicating composition and glass color selection including representative indication of size of joints between the art glass pieces. Renderings may be hand-drawn or computer graphics.
- C. Samples: For each type of art glass specified, submit sample of not less than 6 inches square, and containing a representative range of color and pattern variation. Prepare samples from the same material to be used for the fabricated product. Provide packaging to prevent breakage and to protect edges of sample.

1.6 QUALITY ASSURANCE

- A. Glazing Publications: Comply with the published recommendation of product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise in this section.
 - 1. LSGA Publication: LSGA Design Guide
 - 2. FGMA Publication: FGMA Glazing Manual
 - 3. FGMA Publication: FGMA Sealant Guide
- B. Single-Source Responsibility: Obtain art glass from one source and by a single manufacturer.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Work with glazier to check actual decorative glass openings by accurate field measurements and/or templates as may be required before fabrication.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's instruction for receiving, handling, storing and protecting glass and glazing materials.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

- C. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Prevent edge damage to glass, and damage/deterioration to coating on glass.

1.9 WARRANTY

- A. Provide a written warranty, for a period of one (1) year from date of manufacture. Warranty shall be issued by manufacturer of art glass and cover re-manufacture (or repair at manufacturer's option). Warranty covers only deterioration due to normal conditions of use and not to handling, installing, protecting and maintaining practices contrary to glass manufacturer's printed instructions. Warranty also excludes damage as a result of vandalism or breakage from impact, accidental or deliberate.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Art glass manufacturers to include, among others:
 - Tooley Art Glass Studio
 - 2742 San Ramon Drive
 - Rancho Palos Verdes, CA 90275
 - 800-821-9576
 - Contact: Owner-artist: Duncan TooleyNote: Major production studio located in Baton Rouge, LA
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. Provide all project art glass from a single manufacturer.
- D. Green manufacturer should recycle scrap materials and protect lead for entering environment.

2.2 LEADED ART GLASS

- A. Decorative art glass consisting of separate pieces of glass cut into shapes to achieve the design. Glass types may include, but are not limited to, antique, seedy, opalescent, cathedral, rolled, dichroic, iridescent, crackle, flashed, fused, obscure, etched, painted, etc. Glass may be of any color, pattern or texture to achieve the design. Decorative elements may include, but are not limited to, jewels, bevels, mirrors, etc...to achieve the design. Nominal thickness of glass is 1/8". Substitutions allowed where necessary by manufacturer.
- B. The separate pieces of glass are supported by a web of metal channels consisting of, but not limited to, lead, zinc, brass, steel, galvanized steel, copper to achieve the design and provide required support. Thickness of metal channels can vary from 3/16" to 1/2" to achieve the design.
- C. Voids between the metal web and the glass pieces are to be filled with a glazing compound specifically designed for stained glass and colored black (or yellow for brass or copper webs).

- D. Excess glazing compound will be removed and the entire piece cleaned with fine pumice. All traces of glazing compound must be removed from the viewable areas.
- E. Steel reinforcement bars that resist movement normal to the plane of the glass will be provided either internally within the web or externally attached to the web when the design and the horizontal span combine to permit possible future movement. Specify reinforcement type and location on the design submittal. Repositioning by manufacturer is permitted when necessary.

2.3 Faceted (dalle de verre) art glass

- A. Colored glass slabs will be cut or broken into sizes and shapes to achieve design. Decorative art glass consisting of separate pieces of glass cut into shapes to achieve the design. Glass types may include, but are not limited to, antique, seedy, opalescent, cathedral, rolled, dichroic, iridescent, crackle, flashed, fused, obscure, etched, painted, etc. Glass may be of any color, pattern or texture to achieve the design. Decorative elements may include, but are not limited to, jewels, bevels, mirrors, etc...to achieve the design. Nominal thickness of glass is 3/4". Substitutions allowed where necessary by manufacturer. Thinner glass may be laminated to another glass to achieve the design and the thickness similar to slab glass.
- B. Epoxy will be cast all around and between all the pieces to achieve a monolithic panel. Sand, gravel, roofing granules, or similar material may be used on one or both surfaces of the epoxy to achieve the desired color and texture.
- C. Edges of the glass will be faceted to achieve the design.

2.4 Inlaid (laminated) art glass

- A. Art Glass Layer will be composed of separate pieces of glass decorative art glass cut into shapes to achieve the design. Glass types may include, but are not limited to, antique, seedy, opalescent, cathedral, rolled, dichroic, iridescent, crackle, flashed, fused, obscure, etched, painted, etc. Glass may be of any color, pattern or texture to achieve the design. Decorative elements may include, but are not limited to, jewels, bevels, mirrors, etc...to achieve the design. Nominal thickness of glass is 1/8". Substitutions allowed where necessary by manufacturer.
- B. Art Glass Joint Material: Low shrinkage, non-etching, resin. May be clear, black or colored to achieve the design.
- C. Joint width will be nominal 1/8" wide and may vary plus or minus 3/32" in 15% of the gaps.
- D. Art glass layer will be laminated with clear epoxy or UV resin to a clear glass backplane whose thickness is determined by project requirements. Resin thickness is nominally 1/16th inch but may vary upward to fill voids if the art glass layer warrants.
- E. The design considers that the outmost 5/8 inch of the panels will be hidden behind the framing stops. The tape which separates the art glass from the backplane and seals the lamination layer may be in this boundary area.

2.5 Etched art glass

- A. Surface layer may be removed by abrasive or acid to achieve the design effect. Area etched will be protected during fabrication, installation and subsequent construction to avoid accumulation of dust or dirt in the microscopic pockets created in the glass surface that attract and hold soiling materials.

B. Etch of single color glass will produce a dull matte effect in the etched are. Etch of multicolor glass will partially or totally reveal the substrate color as necessary to achieve the design effect.

C.

D.

2.6 Fused art glass

A. Glasses of the same coefficient of expansion will be used to achieve the design. Fused glass will be properly annealed and free from stresses.

B.

C.

2.7 Obscure art glass

A. Obscure glass will be used to provide privacy. Pattern will be selected by client. Obscure glass will be tempered when used in locations subject to safety glazing.

B. Obscure glass will be used as part of art glass fabrications where necessary to achieve the design and insure privacy. The design will specify the orientation of the smooth side of the glass (or the textured side of the glass). If the glass has a directional pattern, the design will specify the direction of the pattern for each piece of glass, or if no orientation is required.

C.

D.

2.8 Dichroic glass

A. Dichroic glass will be oriented to maximize the color-changing effect.

B. Edges of dichroic glass will be free from areas where the metallic surface has chipped off.

C.

2.9 Decorative mosaic glass

A. Mosaic glass pieces will be utilized for opalescent glass scrap insofar as possible to maintain Green qualification of manufacturer and project.

B. If the decorative element will be within reach, the edges of mosaic glass pieces shall be smooth.

C.

ACCESSORIES

A. Setting and Edge Glazing Blocks: Per Fabricators Installation Instructions.

- B. Glazing Gaskets for Dry Glazing Systems: Solid neoprene, providing continuous spacer and seal between glass and framing.
- C. For glass to be set inside of exterior glazing, utilize double glass stops of nominal size 1/2" x 1/2" of same material, color and finish as glazing system. Provide maximum air space between exterior glazing and art glazing as permitted by glass stops and art glazing.
- D. Glazing Sealant: _____ where required.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine glass framing and support systems for compliance with installation requirements.
- B. Open crates of art glass and inspect for damage, correct quantity and labeling.
- C. Do not begin installation until deficiencies have been corrected.

3.2 PREPARATION

- A. Protect surfaces of art glass before and during installation.
- B. Obtain the necessary tools and manpower indicated by manufacturer's installation instructions.
- C. Comply with requirements of the manufacturer.

3.3 INSTALLATION

- A. Do not install glass with edge or face damage.
- B. Install setting blocks and edge spacing blocks. Do not use unshimmed glazing tapes.
- C. Install smooth-surfaced exterior glazing using dry gasket glazing system.
- D. Install faceted glass using wet sealant glazing system.
- E. Install leaded glass using double glass-stop method interior to the external glazing.
- F. Insure that exterior glazing installation does not block weep holes.

3.4 CLEANING

- A. Clean glass surfaces and framing members of excess glazing sealant with recommended solvent.
- B. Use of razor blades as scrapers is discouraged. Surface damage resulted from such use will not be covered by warrantee.

END OF SECTION

..... [Send corrections and suggestions to info@TooleyGlass.com](mailto:info@TooleyGlass.com)