

(Specifier Note: The purpose of this guide specification is to assist the specifier in correctly specifying a specialty graphic interlayer for laminated glass products. The specifier needs to edit the guide specifications to fit the needs of the specific project. Contact a SentryGlas® Expressions™ Licensee Representative to assist in making the appropriate interlayer selections; contact a glazing fabricator for additional assistance in selection of glazing products. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file. The term Architect is used throughout these guide specifications, as a guide and may be edited to read "Design Professional", "Engineer", "Owner" or other appropriate designation as required for specific project.

Laminated glass consists of two or more lites of glass bonded together with an interlayer of polyvinyl butyral (PVB) sheet, which is bonded to glass lites under heat and pressure in an autoclave. SentryGlas® Expressions™ interlayers are clear PVB sheets printed using high-resolution ink jet printers with specially formulated ink. A soft white or translucent white interlayer backing can be specified to create additional translucency in the laminate.

References have been made within the text of the specification to MasterFormat 2004 Section numbers and titles, specifier need to coordinate this numbers and titles with sections included for the specific project. Brackets []; "AND/OR"; and "OR" have been used to indicate when a selection is required.

Fabricators (laminators) purchase interlayers from which various laminated glass products are produced. Laminated glass can be incorporated into insulating glass units for improved thermal and acoustical properties, contact a glass fabricator for assistance.

The focus of this guide specification is on the interlayer. Section needs to be coordinated with the laminated glass manufacturer, the project requirements and other product information for accuracy.)

SECTION 08 81 13 DECORATIVE GLASS GLAZING

Laminated Glass with DuPont™ SentryGlas® Expressions™ Interlayer

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Laminated Glass

1.2 REFERENCES

(Specifier Note: EDIT listed references for specific project.)

- A. ASTM International

- 1. ASTM C 1036 Specification for Flat Glass

2. ASTM C 1048 Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass
 3. ASTM C 1172 Specification for Laminated Architectural Flat Glass
 4. ASTM C 1376 Specification for Pyrolytic and Vacuum Deposition Coatings on Glass
 5. ASTM C 1464 Standard Specification for Bent Glass
 6. ASTM E 1300 Practice for Determining Load Resistance of Glass in Buildings
- B. American National Standards Institute (ANSI)
1. ANSI Z97.1-2004 Glazing Materials Used in Buildings-Safety performance Specifications and Methods of Test
- C. American Society of Civil Engineers (ASCE)
1. ASCE 7-98 Minimum Design Loads for Buildings and Other Structures
- D. Consumer Product Safety Standard (CPSC) 16 CFR 1201: Safety Standard for Architectural Glazing Materials
- E. Glass Association of North America (GANA)
1. GANA Glazing Manual
 2. GANA Laminated Glazing Reference Manual
 3. Bulletin 01-0300 - Proper Procedures for Cleaning Architectural Glass Products

1.3 SUBMITTALS

(Specifier Note: EDIT the first paragraph to include the project specific section number and title where general project submittal requirements are addressed.)

- A. Refer to [Section 01 33 00 Submittal Procedures] [Section] for general project submittal requirements.
- B. Product Data: Submit manufacturers current product literature for each glazing component, including laminated glass interlayer.
- C. Samples
1. Provide [12-inch square] [insert required size] sample of decorative glazing.
- D. Quality Assurance Submittals
1. Provide test reports indicating products meet or exceed specified requirements.
 2. Compatibility Test Report: From sealant manufacturer, indicating sealant compatibility with interlayer.

E. Closeout Submittals

1. Warranty: Submit fabricator's warranty

1.4 QUALITY ASSURANCE

(Specifier Note: SentryGlas® Expressions™ Licensees are laminators/printers trained to work with SentryGlas® Expressions™ interlayers.)

Laminator Qualifications: Laminators trained by the interlayer manufacturer in best practices. Contact DuPont for a current list of authorized laminators.

1.5 STORAGE AND PROTECTION

- A. Store laminated glass according to fabricator's written instructions.
- B. Protect laminated glass from condensation, temperature changes, direct exposure to sun.

1.6 WARRANTY

- A. Special Warranty:
 1. Provide 5-year limited warranty signed by the laminator against delamination from date of Substantial Completion.
 2. Provide 5-year limited warranty against fading from the date of Substantial Completion.

PART 2 - PRODUCTS

(Specifier Note: Work with glass and interlayer manufacturers to achieve desired design and performance requirements.)

2.1 LAMINATED GLASS

- A. Kind: [Laminated Annealed] [Laminated Heat-Strengthened] [Laminated Fully-Tempered] [Insert other]
- B. Edgework: [Clean cut – factory edge] [Seamed – to remove sharp edges] [Ground and Polished] [Insert other]
- C. Overall Nominal Thickness: [6.0 mm] [10.0 mm] [12.0 mm] [16.0 mm] [indicate thickness]

2.2 COMPONENTS

A. Glass

1. Outboard lite

- a. Type: [Annealed] [Heat-Strengthened] [Fully Tempered]
- b. Thickness: [3.0 mm] [5.0 mm] [6.0 mm] [8.0 mm] [10.0 mm] [12.0 mm] [16.0 mm] [19.0 mm] [indicated thickness]
- c. Class: [Clear 1 – Clear] [Other Specialty Glass]

2. Inboard lite

- a. Type: [Annealed] [Heat-Strengthened] [Fully Tempered]
- b. Thickness: [3.0 mm] [5.0 mm] [6.0 mm] [8.0 mm] [10.0 mm] [12.0 mm] [16.0 mm] [19.0 mm] [indicate thickness]
- c. Class: [Class 1 – Clear] [Other Specialty Glass]

B. Interlayer:

- 1. Basis of Design: SentryGlas® Expressions™, as manufactured by a Licensed Manufacturer. For a list of licensees please reference sentryglas.dupont.com

(Specifier Note: SELECT interlayer thickness of 0.045 and no backer for clear SentryGlas® Expressions™ when glass plies are annealed. SELECT interlayer thickness of 0.060 and clear backer for clear SentryGlas® Expressions™ when glass plies are to be heat-treated. SELECT interlayer thickness of 0.060 inch and translucent white or soft white backer as required. Contact a SentryGlas® Expressions™ Licensee Representative for assistance in selection of the appropriate interlayer.)

- a. Thickness: [0.045 inch] [0.060 inch]
- b. Backer: [none] [Clear] [Translucent White] [Soft White]

(Specifier Note: Coordination with a licensed manufacturer of SentryGlas® Expressions™ is critical in utilizing SentryGlas® Expressions™ for a project. Contact a licensee early in the design process. Image files are best scaled at 1:10 for easy handling; however, other scaling factors are acceptable. For high-quality printing, raster image files generally should be 150-200 pixels per inch at final production size. Electronic files sizes should be generally e not more than 250 MB, but greater than 50 MB. Acceptable formats include PC- or Macintosh-based Photoshop, Illustrator, and most other common image originating programs. Digital printing onto SentryGlas® Expressions™ interlayer is performed using large format ink jet equipment capable of achieving print resolution of up to 1,440 dots per inch.)

- c. Image: Graphic image has been coordinated with the SentryGlas® Expressions™ licensee design team. Contact them directly to obtain project information regarding this specific SentryGlas® Expressions™ project. Reference: [Insert project name].

2.3 ACCESSORIES

(Specifier Note: The following paragraph titles are only provided for suggestion. Specifier needs to provide additional product description or performance requirements related to the relevant items. DELETE/ADD accessories as required for specific project.)

A. Glazing Gaskets

B. Sealants

(Specifier Note: Sealants may be specified in this section or may be specified in Division 07. Select glazing sealants that are compatible with one another and with other materials they will contact, including the laminated glass interlayer.)

C. Glazing Tapes

D. Cleaners, Primers, and Sealers

E. Setting Blocks

F. Spacers

G. Edge Blocks

H. Cylindrical Glazing Sealant Backing

2.4 FABRICATION

A. Fabricate laminated glass to produce glass free of foreign substances and air or glass pockets.

PART 3 - EXECUTION

(Specifier Note: The execution part of this specification needs to include project specific requirements on how to install laminated glass within the project. These instructions are from the Design Professional and directed at the General Contractor.)

3.1 INSTALLERS

3.2 EXAMINATION

3.3 INSTALLATION

A. Laminated Glass Installation: Install in accordance with recommendations of the GANA Glazing Manual and GANA Laminated Glazing Reference Manual.

3.4 CLEANING

- A. Clean laminated glazing materials in accordance with GANA Bulletin 01-0300.

3.5 PROTECTION

- A. Protect laminated glazing in accordance with GANA Glazing Manual.

END OF SECTION

DISCLAIMER:

SentryGlas® Expressions™ Licensee Guide Specifications have been written as an aid to the professionally qualified Specifier and Design Professional. The use of this Guideline Specification requires the sole professional judgment and expertise of the qualified Specifier and Design Professional to adapt the information to the specific needs for the Building Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations and laws. DUPONT AND LICENSEE EXPRESSLY DISCLAIM ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OF THIS PRODUCT FOR THE PROJECT.

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