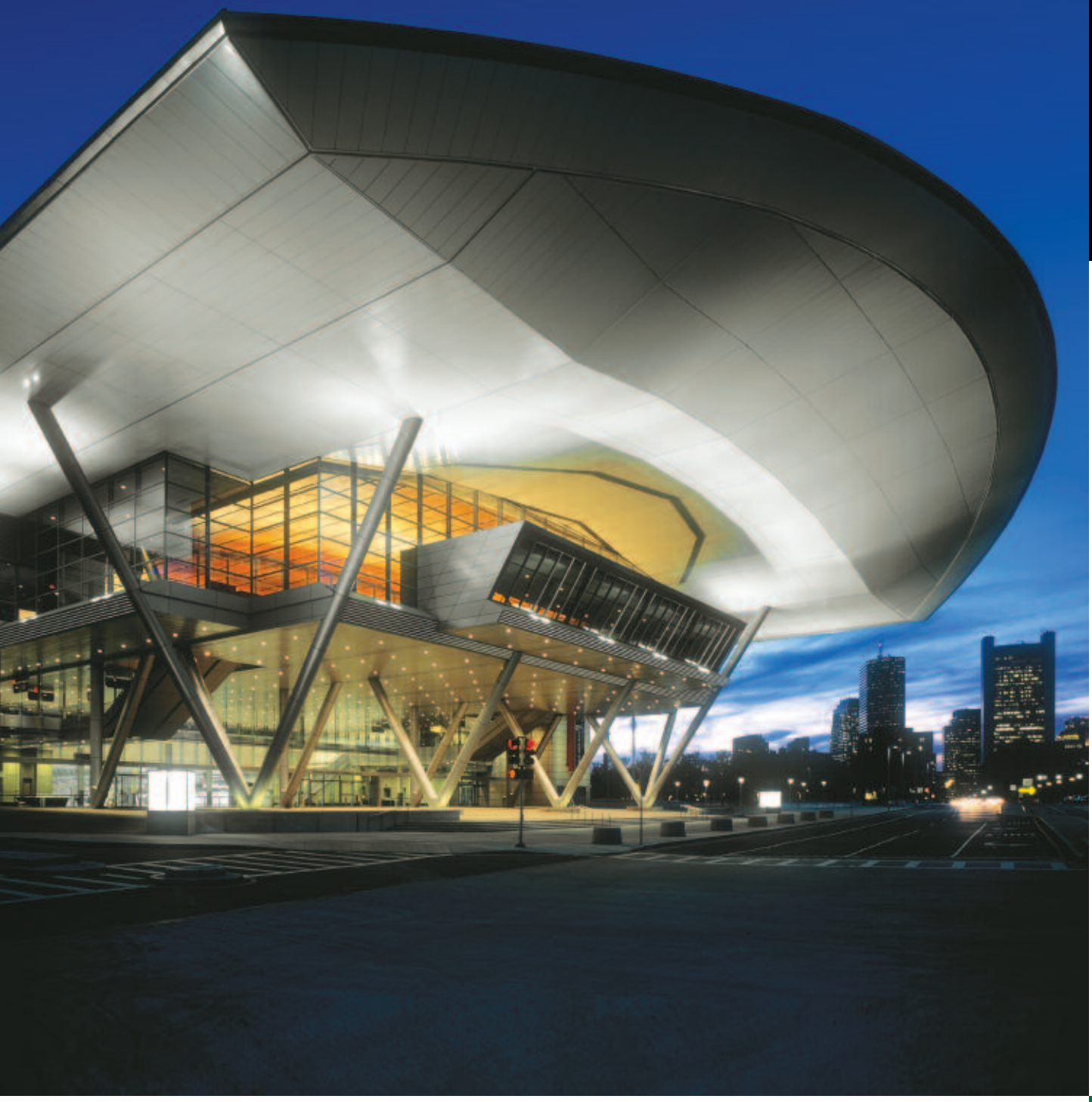
Spandrel Glass

Spandrel Glass

Boston Convention Center
Boston, Massachusetts
Architect: Raphael Viñoly

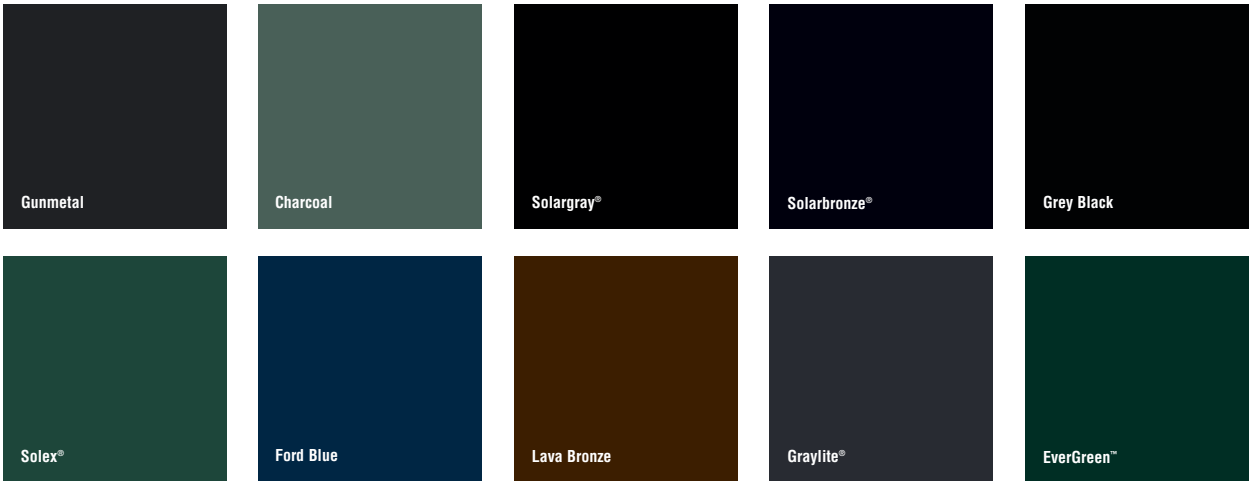


Oldcastle Glass®

Where glass becomes architecture™

Spandrel Glass

Offered monolithically, in insulating units or as laminated glass, spandrel glass is typically specified for building nonvision areas to mask construction materials. Even refurbished buildings, cladded in a combination of vision and spandrel glass, can appear to be constructed entirely of glass. Color samples are shown below. Black and white are also available, as well as an array of custom colors.



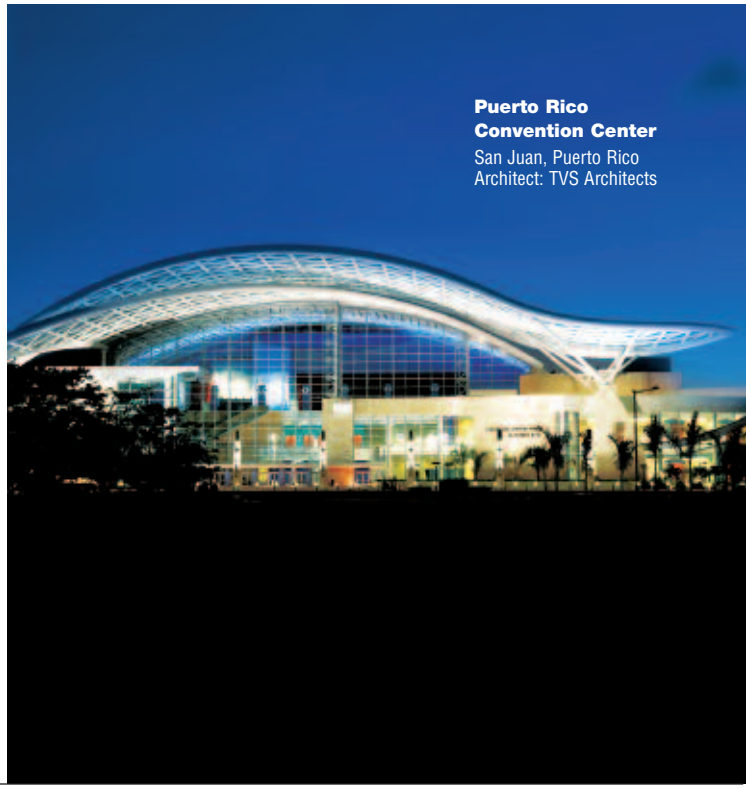
Due to the limitations of the printing process, colors above may vary. Consult factory for actual color samples.

Spandrel Applications

Spandrel glass applications range from functional to decorative:

- Masking structural components while maintaining a consistent glass look
- Custom Color Applications
- Nonvision Areas
- Curtain Walls
- Storefronts
- Wall Cladding

Note: Applications in which light may pass through the glass must be reviewed prior to fabrication.



Puerto Rico Convention Center
San Juan, Puerto Rico
Architect: TVS Architects

Oldcastle Glass®

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Spandrel Glass

Introduction

Oldcastle Glass® provides today's design professional with a family of glass products that create that distinctive look, from refreshingly new exterior cladding designs to exciting interior applications. Oldcastle Glass® spandrel glass is available in a palette of colors, allowing the glass to become a critical design element that is not only functional, but also aesthetically important. Many buildings are cladded in a combination of vision and spandrel glass, giving them an all glass appearance. Even refurbished buildings, with little or no actual vision glass, can provide expansive glass areas through the use of spandrel glass. The versatile nature of this product, allows it to be produced in many colors, which makes opaque glass an attractive product choice for owners, architects and designers who seek to attain unique features in the structures they create or refine. Spandrel glass is an opaque, painted glass, traditionally used in non-vision areas of a building to mask construction materials. The paint, a ceramic frit or an elastomeric silicone, is applied directly to the glass surface by utilizing modern coating technology.

Designed for non-vision areas, spandrel glass should be glazed against a dark uniform background, void of light. Spandrel glass is normally heat-strengthened to withstand higher temperatures associated with these areas of the building's facade, reduce the risk of fallout and minimize the possibility of spontaneous breakage. Spandrel glass can be tempered to meet safety glazing requirements for hazardous locations.

Description

Ceramic Frit Spandrel

Available in a variety of colors to harmonize or contrast with the vision area, the ceramic frit is applied to the #2 surface of the glass by using a horizontal roller-coating process. Ceramic enamel frits contain finely ground glass mixed with inorganic pigments to produce a desired color. The coated glass is then heated to about 1,150°F, fusing the frit to the glass surface, which produces a ceramic coating almost as hard and tough as the glass itself. A fired ceramic frit is durable and resists scratching, chipping, peeling, fading and chemical attacks.

OPACI-COAT-300® Silicone Paint Spandrel

OPACI-COAT-300® silicone paint is a water-based, elastomeric coating that provides optimal glass opacification. Applied without heat during the final stage of the spandrel fabrication process, OPACI-COAT-300® can be used with equal effectiveness on annealed glass (interior only) or heat-treated glass. OPACI-COAT-300® creates a rubber-like film when applied to glass, and, when specified, may satisfy criteria for fallout protection without the need for taping or the application of scrim films.

For a list of available glass products/colors, go to the White Glass Options Tab.

Spandrel Glass

Capabilities

Size:	
Maximum size on 1/4" glass(1)	72" x 144"
Minimum size on 1/4" glass	12" x 12"

(1) Represents typical standard size limitations; please review larger and smaller size requirements with Oldcastle Glass®.

Available in Ceramic Frit or OPACI-COAT-300® Colors

Standard colors include gunmetal, charcoal, Solargray®, Solarbronze®, gray black, Solex®, blue, lava bronze, Graylite® and New EverGreen™. Additional industry standard colors are available along with a variety of custom color options. For additional information, log on to www.oldcastleglass.com.

Applications

Spandrel glass can be installed monolithically, using insulated metal back-pans, but is more often found as a component of an insulating glass unit. Reflective spandrel glass units are widely used when a uniform all-glass look is desired for the building exterior. Typical applications include commercial fixed windows, curtain walls, storefronts and wall cladding. Spandrel glass is traditionally an opaque material not intended for use in vision areas. Glazing conditions, such as in transoms and partitions, where the glass can be viewed in transmission, should be avoided.

See the White Glass Selector Tab for some common applications.

Variable sky conditions may influence the perception of glass color and appearance. When viewing glass from the outside, the dominant visual characteristic is the visible light reflectance. Overcast (gray) skies result in a greater visual disparity between vision and spandrel areas. This is due to the relative transparency of the vision glass, resulting in the perception of depth in the vision areas. By contrast, the opaque spandrel glass tends to look two-dimensional.

Curtain Walls

Curtain wall construction typically includes both vision glazing and spandrel glazing. The spandrel area often complements the vision area in terms of exterior appearance. This is relatively easy to achieve when low-light transmitting (or highly reflective) glass types are used. These glass types provide the least contrast between vision and spandrel areas under a variety of lighting conditions. Glass with high light transmission or low reflectance typically provides greater contrast between vision and spandrel areas.

Spandrel and Low-E Glass

Applying spandrel coatings to a Low Emissivity (Low-E) glass is not recommended. If applied directly onto the Low-E coating, it will negate the effectiveness of the Low-E coating. If applied on the opposite side, the Low-E coating may be damaged during the tempering process. For vision IG units with a Low-E coating on the inboard lite, it is standard practice to replace the Low-E coated glass with clear glass for the spandrel IG units.

For a ceramic frit spandrel IG unit that has the Low-E coating on the #2 surface, the spandrel coating is typically applied to the #4 surface. In some circumstances, it can be applied to the #3 surface. For a ceramic frit spandrel IG unit with the Low-E coating on the #3 surface, the spandrel coating can be on the #2 surface, or the Low-E inboard lite can be replaced with clear glass and the ceramic frit spandrel coating placed on the #3 or #4 surface.

Oldcastle Glass® requires using OPACI-COAT-300® spandrel paint on the #4 surface of an IG unit that has a Low-E coating on the #2 surface.

(continued on next page)

Spandrel Glass

Applications (continued)

For an OPACI-COAT-300® spandrel IG unit with the Low-E coating on the #3 surface of the vision unit, the Low-E inboard lite can be replaced with clear glass with the OPACI-COAT-300® spandrel coating on the #4 surface.

As always, full-size mock-ups should be viewed prior to the final design decision.

Spandrel with Insulation

Many companies throughout the glass industry have long studied the subject of exterior spandrel glass and its accompanying use with building insulations.

It has been suggested that the best possible method of using spandrel glass with insulation is to have an air gap between the two materials. Any glass, if installed improperly, can become stained or mottled from moisture when it is allowed to remain in contact with the glass for long periods of time. Airborne contaminants can also be present before and during the time of installation. When this moisture blends with alkaline materials, staining potential is increased if moisture is trapped between the insulation and the coated surface of the spandrel glass. Thermal breakage can also be influenced by the use of insulation. On darker colors the heat buildup can be significant. If insulation should be improperly applied, an uneven distribution of heat can occur, resulting in hot and cold spots.

Reflective Glass Products

The use of insulation in direct contact with reflective surfaces is not recommended. Manufacturers of reflective glass products recommend a minimum air gap of 1" to 2" (26 mm to 51 mm) when the coated surface is in the #2 position. This recommendation applies to both sputter/vacuum deposited (soft coat) and pyrolytic coated (hard coat) reflective glass products.

See the White Glass Selector Tab for some typical applications.

Characteristics

Installed Appearance

Standard industry practice advises against the use of spandrel glass in vision areas. Spandrel glass is designed to be glazed against a uniform dark background and should not be used in transoms, partitions, or other areas where it can be viewed in transmission. Applications in which light may pass through the glass must be reviewed prior to fabrication.

Quality

Pinholes, roller marks and opaque particles are permissible in ceramic enamel spandrel glass.

Visual Characteristics

Greater contrast between vision and spandrel areas occurs when using tinted (uncoated) glass or high-transmission Low-E coatings on clear substrates. Under these conditions, insulating glass spandrel units (shadowbox IG units) can provide the illusion of depth and approximate the look of the vision glass more closely. Keeping both the vision and the spandrel glass construction similar (the same exterior glass color, coating, etc.) can minimize the contrast under various lighting conditions. Oldcastle Glass® suggests specifying a neutral colored opaque spandrel (a ceramic frit or silicone paint) on the #4 surface of the IG for this application.

Spandrel Glass

Additional Important Information

Design Criteria

Details on the following important topics can be found in the Black Design Criteria Tab: Glazing Instructions, Thermal Stress, Deflection, Glass Design Loads, Glass Thickness Selection, Spontaneous Breakage of Tempered Glass, Roller Wave Distortion in Heat-treated Glass, Mock-ups and Warranties.

Specifications

A sample Section 08 81 00 Specification for North America can be found in the Black Specifications Tab. Information specific to spandrel glass can be found in Part 2 Products, 2.02 Materials.

Contact Us

For any additional information, including details, technical data, specifications, technical assistance and samples, call 1-866-OLDCASTLE (653-2278).

Visit Us on the Web

Log on to www.oldcastleglass.com for project photos, product colors, general inquiries and project assistance.

To view performance data on a wide range of glass make-ups, or to build your own product specification, log on to www.oldcastleglass.com and choose GlasSelect.®