

Spandrel Glasses Ceramic Frit Coated

Spandrelite® Glass

Spandrelite glass panels are heat-strengthened glasses with a ceramic frit color fused permanently to one surface. Because *Spandrelite* glass panels are installed with the color surface to the indoor side of the wall, the fused surface is permanently protected from weather and window cleaning abrasion.

Spandrelite glass panels are heat strengthened to a specially selected degree of strength to provide optimum performance in resisting stresses caused by the sun's heat and to provide maximum probability that the *Spandrelite* glass panel, if broken would usually remain fixed in the framing structure.

Insulated Spandrelite®

GLASS

Insulated Spandrelite glass panels are supplied as an integral factory assembly in which *Spandrelite* glass panels are backed by 1- or 2-inch fiber glass insulation with an aluminum foil vapor barrier, or by ¾-inch fiber glass insulation with galvanized steel or cement asbestos board backing.

The unauthorized installation of any other insulation or backing material voids any warranties.

Insulated Spandrelite glass panels assure an excellent insulating system when used in walls having adequate weep-breathe provisions and compression contact surfaces for the vapor barrier.

Special care should be taken with respect to fire safety requirements in high rise buildings to insure that the factory applied insulation complies with current specifications.

Standard Colors

Although *Spandrelite* and *Insulated Spandrelite* glass panels are available in an almost limitless variety of custom colors, 10 standard colors have proven to be the most widely used.

They include Charcoal 5341, Walnut 5177, Sable 5216, Graphite 5405,

Special Bronze 7177, and Black 5460.

Four additional colors, designated Harmony *Spandrelite* Glasses, have been found to be particularly effective when matched with the tinted PPG vision glasses: Harmony *Graylite* 14, *Spandrelite* 6383, Harmony *Solar-bronze Spandrelite* 6612, Harmony *Solargray Spandrelite* 6401, and Harmony *Solex Spandrelite* Glass 6357.

Characteristics

The heat strengthening of *Spandrelite* and *Insulated Spandrelite* glasses makes these products several times as strong as annealed glass of the same thickness. PPG *Spandrelite* and *Insulated Spandrelite* glasses are resistant to thermal stress and edge damage, and usually remain in the framing structure even when they have been broken.

When safety considerations require greater assurance that broken glass will remain in the spandrel area, SPANDRELITE glass which meets General Service Administration Public Building Service Guide Specification PBS-4-0885, February

1970, should be ordered.

Technological advantages in the production of *Spandrelite* and *Insulated Spandrelite* glasses, combined with the inherent advantages of glass over other spandrel materials, provide *Spandrelite* glass with an almost limitless application flexibility.

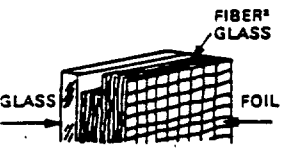
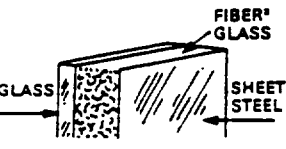
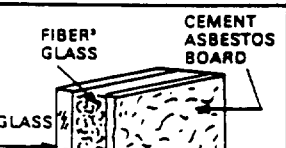
The colored spandrel areas of these products are designed to be used with a back-up wall or against a dark background. PPG *Spandrelite* products are not recommended for use in transoms, partitions, or other areas without back-up. If areas do not have back-up material, pinholes and some nonuniformity in ceramic film thickness will be visible.

Ceramic Frit Coating

This consists of a layer of durable colored ceramic frit compatible with the base material in its coefficient of thermal expansion and fire fused to the surface of the base glass. Installation should be made so that the colored surface is toward the indoor side of the wall.



Reproduction of the subdued, dark *Spandrelite* colors with lithography is difficult and often inaccurate. Before specification, ask for a set of *Spandrelite* Glass samples.

PPG Product	Glass	Insulation and Roomside Facing	Nominal Unit Thickness inches	Unit Size and Tolerance ⁴ inches	Approx. Weight lb per sq ft	U-Value ^{5,7}		Btu/hr-sq ft-F
						Winter Nighttime	Summer Daytime	
 SPANDRELITE Glass ¹	1/4" Ceramic Coated	None	3/8"	Minimum 12 x 26	3.3	1.09	1.04	
	3/8" Ceramic Coated	None	3/8"	+0—3/8"	4.9	1.06	1.04	
 INSULATED SPANDRELITE Glass with Fiber Glass Insulation	1/4" Ceramic Coated	1" Fiber Glass ² and .005" Aluminum foil vapor barrier	1 1/4"	Maximum 84 x 168 +0—3/8"	3.6	0.16	0.16	
		2" Fiber Glass ² and .005" Aluminum foil vapor barrier	2 1/4"	Consult PPG for length over 168"	3.9	0.10	0.10	
 INSULATED SPANDRELITE Glass with Fiber Glass Insulation and sheet metal backing ⁶	1/4" Ceramic Coated	1/2" Fiber Glass Insulation ³ and 24 gauge steel	1 1/4"	Compresses to fit 1" rabbet	4.2	0.21	0.20	
 INSULATED SPANDRELITE Glass with Fiber Glass Insulation and cement asbestos board backing ⁷	1/4" Ceramic Coated	1/2" Fiber Glass Insulation ⁴ and 1/2" cement asbestos board	1 1/4"	Compresses to fit 1" rabbet	4.5	0.20	0.20	

¹Also available to meet GSA-PBS Guide Specification PBS:4-0885.

²Factory applied fiber glass batt 2 # density with 0.005 inch reinforced aluminum foil vapor barrier insulation can be ordered cut flush with edge of *Spandrelite* glass, cut back, or notched.

³Factory applied fiber glass insulation 6 # density available cut flush with edge of *Spandrelite* glass, only.

⁴Bow and warp tolerances to be in accordance with Federal Specification DD-G-001403.

⁵U is the overall coefficient of heat transmission or thermal transmittance (air to air)

⁶All cement asbestos board or sheet metal interior backing on Insulated *Spandrelite* panels must be positively retained in the opening through the use of glazing stops.

⁷Subject to manufacturing changes to meet varying conditions.

Guide Specifications and Limited Warranty

1. **Scope of Work**—Furnish all labor, materials, appliances and services required to complete mineral fiber cement panel work generally as follows: a. Facing bands, b. Spandrels, c. Balcony rails, d. Fascias, e. Soffits, f. Structural panels, g. Fasteners and installation accessories, h. Gaskets, i. Cleaning.

2. **Work not included**—The following related work is specified in other Sections of the Specification: a. Sheathing, b. Insulation, c. Framing, d. Metal or wood furring, e. Caulking and Sealing, f. Blocking and nailers, g. Soffit suspension systems, h. Painting clips in open joints, i. Flashing.

3. **Shop Drawings**—Submit shop drawings for approval per requirements of the General Conditions. Shop drawings shall show size and thickness of each panel, edge work, jointing, provisions for fastening, type, size and material of fasteners, and relation of panels to work of other trades.

4. **Samples**—Submit samples for approval per requirements of the General Conditions. Samples shall be at least 6" by 8" and shall indicate finish of face, edges and corners. Where Rigid Clip System is to be used submit samples showing joint size, gasket and fastener in position.

5. **Materials**—a. Mineral fiber cement panels shall be Qasal, a homogeneous autoclaved board of mineral fiber, cementitious binders (1/4" thick) (1 1/2" thick) of thickness shown on the drawings as distributed by PPG Industries, Inc. (thickness tolerance $\pm 10\%$). Panels shall be integrally colored throughout with a uniformly (smooth) (textured) surface on the exposed face and shall meet the following requirements: (1) Density when dry 112 lb./cu. ft. (2) Minimum tensile strength 2,100 psi. (3) Minimum flexural strength 4,500 psi. (4) Crushing strength (flatwise) 29,500 psi. (5) Dimensional stability—remains visibly flat in actual service. (6) Fire classification—flame spread 0, smoke developed 0, fuel contributed 0. (7) Conductivity—2.5 Btu-in./sq. ft.-F. (8) Coefficient of linear expansion 5×10^{-6} in./in.-F. (9) Permeability—1 perms.

b. Fasteners shall be:

FOR EXPOSED ATTACHMENT—Rivets or screws with PVC caps as recommended by PPG Industries, Inc. (Round head, pan head, or flat head may be used.)

FOR CONCEALED SCREW ATTACHMENT—TD plugs as recommended by PPG Industries, Inc.

FOR CONCEALED CLIP ATTACHMENT—Rigid Clip®, stainless steel clips with flat head oxidized chrome,

triple plated screws or stainless steel rigid clip or other clips as supplied by PPG Industries, Inc.

c. Gaskets, Bedding Tapes: Gaskets shall be an approved, closed cell neoprene, EPDM or butyl based compressible tape. (Note: Tapes should be non-staining and capable of functioning in the temperature range and environmental conditions expected at the site.)

d. Sealants. The following sealant formulations have been tested for mechanical compatibility by their manufacturers and have been used on many Glasweld applications:

Polysulfides: Those tested and approved under the Thikol Licensing Program.

Silicones: Those recommended by G. E. Silicone Products Division or Dow Corning Corp. for use with cement based products.

Acrylics: Mono-Iasto-Meric as manufactured by Tremco Manufacturing Co. Consult the sealant manufacturer for specific project recommendations.

6. **Fabrication:** a. Qasal shall be fabricated to sizes shown on the approved shop drawings. Edges shall be sawed with masonry blades. Visible faces and edges shall be free of tool marks, and shall be sharp and true to square.

b. Panels shall be protected and stored under cover until installation.

c. Verify measurements at the jobsite.

7. **Installation:** Note: Qasal panels should be installed on furring, over sheathed structures or existing surfaces. It has been successfully applied directly to framing and possesses structural properties that permit its use as a diaphragm capable of resisting shear.

Qasal has the ability to pass vapor but its physical properties are not affected by moisture, freezing or thawing. (Backing and furring should be designed to take advantage of this property by providing adequate ventilation behind the panel and permitting condensation to weep.)

a. Surfaces to receive Qasal panels shall be properly prepared: furring shall be plumb, true, secure, properly spaced and designed to weep. Wood or other sheathing construction with open joints shall have joints covered with 15 lb. felt or with other suitable covering. Insulation shall be secured in place. Wood furring shall be primed and ferrous metal shall be primed or galvanized. Notify the Contractor if surfaces, framing or furring are not in acceptable condition to apply the panels. Commencing work shall signify acceptance of conditions.

((Furring and framing requirements: A furring (framing member or solid sheathing must be located behind each Qasal joint; and for 1/2" panels wider than two feet, intermediately to prevent drumming. All joint openings must be furred (framed) except where windows are to be installed within a panel. Provide for 1/4" expansion joints every 20 ft. of height or run if Qasal is outted or where required by construction.))

b. Do all cutting and fitting required to properly install the panels. Use masonry saw blades and dress edges smooth with carbide tipped or carborundum files. Pre-drill holes in Qasal for all screws, bolts and sleeves. Provide additional angles, blocking or furring required to fully support the weight of each panel. No weight shall be allowed to bear on the panels.

c. Install panels plumb, true, and not out of wind with adjacent faces in the same plane. Joints shall be aligned, in both directions and of uniform width for their full length. Panel corners and edges shall be sharp and unbroken.

d. Apply gaskets and bedding tapes in accordance with tape manufacturer's instructions. Maintain continuity of seal around the entire panel periphery. Draw up fasteners tightly so that tapes are uniformly compressed.

e. Spacing for fasteners shall be in accordance with design load requirements.

Screws should not be placed closer than 1/4" to panel edge.

f. Install sealants in strict accordance with the sealant manufacturer's current printed instructions. Protect panel faces from sealant. Sealants shall be smooth, of uniform depth, tooled concave, free of voids or sags.

8. **Cleaning and Protection:** a. After joints have sealed, remove tape and clean off excess sealant from panel faces.

b. Clean panels with water to remove all soil. Remove grease, oil, paint and other stubborn stains with materials and methods recommended by PPG Industries, Inc. in accordance with their printed instructions.

c. Remove and replace all broken, cracked or otherwise defective panels.

d. Protect work of this Section until acceptance of building by the Architect.

9. **Warranty:** a. Deliver to Owner PPG's written statement warranting the panels free of manufacturing defects. Note: Where Qasal panels are used as a component in a structural system the above specification should be modified to conform to local codes.

*Patent Pending

Limited Qasal® Warranty

PPG Industries warrants Qasal panels for material integrity (under non-load-bearing conditions) for the life of the building on which they are installed.

Any panel covered by this warranty which is found by an authorized representative of PPG and the Architect to be defective within the terms of this warranty will be replaced FOB nearest Mineral Products Depot to the place of installation. This warranty is limited to replacement of the panel and does not include removal or installation.

This warranty is applicable only when the products covered by it have been installed in accordance with established building practices and procedures recommended by PPG have been accorded treatment recognized as good practice in the building industry regarding storage and maintenance, and have been subjected only to normal use.