



# P A N E L I T E

## PANELITE ClearShade™ IGU [INSULATING GLASS UNIT] SPECIFICATIONS

### Section 08800 – Glazing – Honeycomb IGU Glazing

#### PART I – GENERAL

##### 1.1 SUMMARY

- A. This Section includes glazing for the following products and applications, including those specified in other sections where glazing requirements are specified by reference to this Section: *(EDIT AS NEEDED)*
  - 1. Windows
  - 2. Doors
  - 3. Glazed entrances
  - 4. Curtain Walls
  - 5. Sloped Glazing
  - 6. Graphics applied to glass
- B. Related Sections: *(EDIT AS NEEDED)*
  - 1. Division 5 Section “Guardrails”
  - 2. Division 8 Section “All-Glass Doors and Partitions”
  - 3. Division 8 Section “Sliding Automatic Entrance Doors”
  - 4. Division 8 Section “Manual Sliding Entrance Doors”
  - 5. Division 8 Section “Revolving Doors”
  - 6. Division 8 Section “Fire Rated Glass and Framing Systems”
  - 7. Division 8 Section “Installation and Framing Systems”

##### 1.2 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributed to the following: defective manufacture, fabrication and installation: failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials or other defects in construction.
- B. Glass Design: Glass thicknesses indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than in thicknesses and in strengths required to meet or exceed needed requirements.
- C. ClearShade™ IGU Specification and Performance: The performance of all honeycomb IGU products must be generated and confirmed per NFRC 100-2010 Environmental Conditions with Window 7 per Lawrence Berkely National Laboratory, a division of the US Department of Energy. Supplier to confirm performance with verified Window 7 documentation that specified units meet or exceed specified performance requirements.

##### 1.3 SUBMITTALS

- A. PRODUCT SAMPLE
  - 1. Honeycomb IGU submittal samples (12” x 12”) must be submitted for approval and retain original suppliers label on sample.
- B. CERTIFICATE OF PERFORMANCE
  - 1. Certificate verifying Honeycomb IGU performance per Lawrence Berkeley National Laboratory Windows 7 must be submitted with sample in order to be approved.



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2. Product Data submitted solely from manufacturers website or on company letterhead will not be accepted.
- C. 10 YEAR LIMITED WARRANTY as supplied by manufacturer.
- D. TERMS AND CONDITIONS as supplied by manufacturer
- E. MOCKUPS:
  1. Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects. *(DELETE IF NOT REQUIRED OR NEEDED)*
  2. Build mockup of [each type of] Honeycomb Insulated Glass Unit as required
  3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- F. MAINTENANCE INFORMATION:
  1. Submit PANELITE'S care and maintenance data, including care, repair and cleaning instructions. Include in Project close-out documents.

## 1.4 QUALITY ASSURANCE

Suppliers of Honeycomb IGU products must have a minimum of 10 years experience in this technology and have honeycomb glazing products and projects installed in the field for over 10 years.

Honeycomb IG units must be manufactured by IGCC Certified facility.

Standard 10 year limited warranty required.

ClearShade™ IGU inserts are manufactured with ClearShade™ resin, a high performance and UV stabilized raw material designed to optimize daylighting and solar heat gain control performance.

Panelite ClearShade IGU is patent pending and Panelite LLC retains the global exclusivity on the use and distribution of ClearShade Inserts for use within an IGU composition.

## 1.5 PERFORMANCE CERTIFICATION

Honeycomb IGU glazing unit performance must be certified to comply with the Performance data as specified unit compositions outlined in Section 2.2 "Materials" below.

### Performance Data Requirements

- A. Honeycomb IGU products fall under the category of "Dynamic Glazing". Angularly selective performance of dynamic glazing product is dependent upon unit specifications and sun angle of incidence.
- B. All Honeycomb IGU performance data must be generated and certified through the Window 7 glazing performance technology platform which is developed, maintained, updated and distributed solely by Lawrence Berkeley National Laboratory, a division of the US Department of Energy.
- C. Submittals without performance data generated and verified by LBNL Window 7 will not be considered.
- D. All performance data to be submitted for 8 angles of incidence from 10-80 degrees in 10 degree increments.
- E. Performance of all unit types must also be submitted in the form of an executable BSDF file format for direct integration by project engineer into Energy Plus and Radiance models to confirm angularly



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selective energy and daylighting performance.

- F. Performance Values Required **[REQUEST DATA / SPECS FROM PANELITE]**
- a. Transmission
    - i. \_\_\_\_% Visible/Diffused Light
    - ii. \_\_\_\_% Solar Energy
    - iii. \_\_\_\_% UV
  - b. Reflectance
    - i. \_\_\_\_% Visible/Diffused Light Out (Front)
    - ii. \_\_\_\_% Visible/Diffused Light In (Back)
    - iii. \_\_\_\_% Solar energy
  - c. U Value
    - i. \_\_\_\_ Winter
    - ii. \_\_\_\_ Summer
  - d. \_\_\_\_ Shading Coefficient
  - e. \_\_\_\_ Solar Heat Gain Coefficient
  - f. \_\_\_\_ Light to Solar Gain

## 1.6 DELIVERY, HANDLING AND STORAGE

- A. All material to be delivered on an open wood crate constructed from dimensional lumber. Maximum weight per crate not to exceed 2000 lbs.
- B. Immediately upon delivery examine each crate for evidence of damage. If damage has occurred during shipping, mark on waybill and confirm with delivering party. Do not accept crate if material enclosed is damaged and not usable.
- C. Do not deliver Insulated Glass Units, framing systems and/or accessories to Project site until areas are ready for installation.
- D. If delivered early, panels should remain on skids and in crates with other packaging material. Store in a dry shaded area. Vertical storage recommended.
- E. Handle materials to prevent damage to finished surfaces.
- F. Do not install Insulated Glass Units until spaces and construction site is prepared for proper glazing installation.
- G. Do not force, warp or torque panels during handling or installation.
- H. Carry panels vertically and by appropriate means. Glazing suction cups recommended.
- I. Units containing breather tubes to insure pressure equilibrium must be handled and installed per manufacturers and GANA recommendations.

## 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits recommended by installer and when glazing channel substrates are wet from rain, frost, condensation or other causes.

## Part 2 – PRODUCTS

### 2.1 MANUFACTURERS

- A. ClearShade™ IGU honeycomb glazing is patent pending and distributed exclusively by PANELITE LLC.
- B. Alternative honeycomb IGU products from other manufacturers submitted as “Equal” to Panelite ClearShade™ IGU must be submitted for approval accompanied by criteria set forth in Sections 1.2 – 1.5.
- C. Provide product as specified below under “Materials”.



# P A N E L I T E

## D. Licensed Distributors

Panelite LLC

Contact: Christian B Mitman

8599 Venice Blvd, Suite 220

Los Angeles CA 90034

Tel 323.297.1115, Press 2

E-mail [cmitman@panelite.us](mailto:cmitman@panelite.us)

URL [www.panelite.us](http://www.panelite.us)

Info [info@panelite.us](mailto:info@panelite.us)

## E. Licensed Distributors - United Arab Emirates, North Africa

Alumco Glass

Contact: Haitham Al khatib

Dubai Investment Park

Dubai

United Arab Emirates

Tel +971 4 8854355

E-mail [haitham@alumcoglass.ae](mailto:haitham@alumcoglass.ae)

URL [www.alumcouae.com](http://www.alumcouae.com)

Info [alumco@alumco.ae](mailto:alumco@alumco.ae)



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## 2.2 MATERIALS

ClearShade IGU Composition: ClearShade™ Insulating Glass Units are composed of monolithic or laminated glass lites facings with encapsulated ClearShade™ high performance honeycomb insert and specified to meet performance specifications.

Glass lite components of all ClearShade IG Units comply with ASTM 1036 (float glass,) ASTM 1048 (heat treated, tempered glass,) SGCC (heat-treated glass) .

Honeycomb IGU material must be manufactured in accordance with IGCC certifications and CBA ratings.  
Basis of Design: ClearShade™ IGU by Panelite

### 2.2A Glass Type 1: GL-1

#### GL-1 Unit Specifications

ClearShade™ IGU by Panelite  
Product Code: CS-XXXX-XXXX-XXXX-XXXX,

Outboard Lite \_\_\_\_\_  
Airspace:  
ClearShade:  
Inboard Lite:  
Spacer:  
Silicone

#### GL-1: Performance Specifications, Generated with LBNL Window 7.1, NFRC 100-2010

INSERT GL-1 PERFORMANCE DATA CHART HERE  
REQUEST FROM BY PANELITE

### 2.2b Glass Type 2: GL-2

#### GL-2 Unit Specifications

ClearShade™ IGU by Panelite  
Product Code: CS-XXXX-XXXX-XXXX-XXXX,

Outboard Lite  
Airspace:  
ClearShade:  
Inboard Lite:  
Spacer:  
Silicone



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## GL-2: Performance Specifications, Generated with LBNL Window 7.1, NFRC 100-2010

INSERT GL-2 PERFORMANCE DATA CHART HERE  
REQUEST FROM PANELITE

- B. Overall Unit Thickness and Thickness for each Lite: Thickness as dictated by unit specification and industry and manufacturing tolerances
- C. Overall Unit Dimensions: Honeycomb IG unit are fabricated to comply with issued drawings and specifications and standard insulating glass unit tolerances.  
ClearShade™ Insulating Glass Units maximum size: 60" x 144"
- D. Sealing: Dual seal with primary and secondary sealants as follows:
  - 1. Primary Seal: Polyisobutylene
  - 2. Secondary Seal: 2 Part silicone
  - 3. Color Options: Grey and Black available. Color of primary and secondary seal may vary
- E. Spacer Specifications: Spacer type to be specified by Project Architect and approved by PANELITE with construction to comply with the following requirements:
  - 1. Spacer Type: mill finish aluminum, black anodized aluminum, or stainless steel.
  - 2. Desiccant: standard
  - 3. Corner Construction: Plastic Key standard, CNC Bent available as required

### PART 3 – EXECUTION

#### 3.1 EXAMINATION

- A. Examine frame and glazing with installer present for compliance with the following:
  - 1. PANELITE, MANUFACTURER AND INDUSTRY tolerances including those for size, squareness and thickness. Additional specification documentation available upon request.
  - 2. Minimum required face, edge deletion or daylight opening clearance.
  - 3. Effective sealing between joints of glass and framing members.
- B. Proceed with installation only after unsatisfactory conditions have been identified, confirmed and corrected.

#### 3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrate.

#### 3.3 INSTALLATION AND GLAZING

- A. Install as per Manufacturers specifications for installation and framing members.
- B. Comply with combined written instructions of PANELITE, sealants, gaskets and other glazing materials unless more stringent requirements are indicated. To be reviewed and approved by architect and installer.
- C. Glazing channel dimensions as indicated on Drawings provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses with reasonable tolerances. Adjust as required by project conditions –All changes to be reviewed and approved by installer.
- D. Protect glass edges from damage during handling and installation. Remove damaged glass from project site and legally dispose of off project site. Glass with edge damage or other imperfections, when installed, could weaken insulated glass unit and impair performance and appearance.
- E. Set glass lites in each series with uniform pattern and cell direction.

END OF SECTION