

SECTION 09 62 83

STRUCTURAL GLASS FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Recessed walkable skylights.
 - 2. Walkable skylights integrated with pedestal pavers.
 - 3. Walkable skylights integrated into a green roof.
 - 4. Structural glass floors.
 - 5. Structural glass stair treads and landings.
 - 6. Glass decks.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's standard product data for each type of product.
- B. Shop Drawings: Include fabrication and installation details for metal fabrications.
 - 1. Include plans, elevations, sections, and details of glass flooring and their connections. Show anchorage and accessory items.
 - 2. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Samples for Verification: For each type of structural glass flooring and accessory, approximately 6 inches square and of same thickness and material indicated for the Work and showing the full range of normal color, pattern and texture variations expected.
- D. Delegated-Design Submittal: For framing indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Minimum 2 years' experience manufacturing similar products.
- B. Installer: Minimum 2 years' experience installing similar systems, and acceptable to the structural glass flooring manufacturer.
- C. Delegated Design: Engineer glass flooring systems, including comprehensive engineering analysis by a qualified professional engineer licensed in the jurisdiction of the project.
 - 1. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of metal fabrications that are similar to those indicated for this Project in material, design, and extent.

- D. Source Limitations: Obtain each type of structural glass flooring panels and components from one source with resources to provide materials and products of consistent quality in appearance and physical properties.
- E. Physical Performance: Provide structural glass flooring, including anchorage, capable of withstanding, without defects, the effects of the following:
 - 1. Structural loads, including wind, snow, seismic or other anticipated loads.
 - 2. Thermal movements.
 - 3. Movements of supporting structure.
 - 4. Dimensional tolerances of building frame and other adjacent construction.
- F. Performance: Provide structural glass flooring which does not exhibit any of the following defects after installation:
 - 1. Water leakage.
 - 2. Noise or vibration created by wind and thermal and structural movements.
 - 3. Framing members transferring stresses to glazing.
 - 4. Loosening or weakening of fasteners, attachments, and other components.
 - 5. Sealant failure.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle glass flooring systems as recommended by manufacture. Store off the ground to prevent contamination by mud, dust or other materials likely to cause staining or other defects.

PART 2 - PRODUCTS

2.1 STRUCTURAL GLASS FLOORING

- A. Basis-of-Design: Glass Flooring Systems, Inc., 10 Leslie Court, Whippany, NJ 07891. Tel: 862-701-5320. www.glassflooringsystems.com.
- B. Recessed Walkable Skylights: Provide fully glazed, fully assembled engineered SkyFloor walkable skylights by Glass Flooring Systems, Inc. with the following characteristics:
 - 1. Application: Interior.
 - 2. Application: Exterior.
 - 3. Application: Exterior, integrated with pedestal pavers.
 - 4. Type: SkyFloor Fully Assembled Unit – Model FA-TB 2x2, single lite configuration
 - 5. Type: SkyFloor Fully Assembled Unit – Model FA-TB 2x4, single lite configuration.
 - 6. Type: SkyFloor Fully Assembled Unit – Model FA-TB 4x2, single lite configuration.
 - 7. Type: SkyFloor Fully Assembled Unit – Model FA-TB 4x4x4, four lite configuration.
 - 8. Type: SkyFloor Fully Assembled Unit – Custom configuration.
 - 9. Type: SkyFloor Standard Unit Model SS – 2.5, single light configuration.
 - 10. Type: SkyFloor Standard Unit Model SS – 3.5, single light configuration.
 - 11. Type: SkyFloor Standard Unit Model SS – 4.0, single light configuration.
 - 12. Type: SkyFloor Standard Unit Model SS – 5.0, dual light configuration.
 - 13. Type: SkyFloor Standard Unit Model SS – 7.0, dual light configuration.
 - 14. Type: SkyFloor Standard Unit Model SS – 8.0, dual light configuration.
 - 15. Type: SkyFloor Standard Unit Model SS – 7.5, triple light configuration.

16. Type: SkyFloor Standard Unit Model SS – 10.5, triple light configuration.
 17. Type: SkyFloor Custom Unit, Custom configuration.
 18. Frame Color: White.
 19. Frame Color: Black.
 20. Frame Color: Custom.
 21. Thermal Break: Required.
 22. Thermal Break: Not required.
 23. Glass: Standard float glass, textured walking surface.
 24. Glass: Low iron, textured walking surface.
 25. Glass Assembly: Three layers of 3/8-inch glass with Eastman Safety PVB or SentryGlass interlayers as applicable.
 - a. Interlayer: Clear.
 - b. Interlayer: Digital printed.
 - c. Interlayer: Decorative mesh.
 - d. Interlayer: Colored.
 - e. Finish: Tested anti-slip texture.
 26. Aluminum Framing: Alloy 6063-T6 extruded aluminum.
 27. Clips and Fasteners: Stainless steel.
 28. Sealant: Dow Corning 995 structural sealant.
 29. Integrated Snap-On Setting Blocks: 80-90 shore hardness.
 30. Cap: Adjustable with backer rod strip.
 31. Lighting Option: Integrated LED lighting at perimeter.
- C. Structural Glass Flooring: Provide engineered structural glass flooring by Glass Flooring Systems, Inc. with the following characteristics:
1. Application: Interior.
 2. Application: Exterior.
 3. Glass Assembly: Three layers of 3/8-inch glass with Eastman Safety PVB or SentryGlass interlayers as applicable.
 - a. Interlayer: Clear.
 - b. Interlayer: Digital printed.
 - c. Interlayer: Decorative mesh.
 - d. Interlayer: Colored.
 4. Slip-Resistant Floor Glass: SEVASA CriSamar STEP T-Series, transparent.
 - a. Finish: Lunaris-T.
 - b. Finish: Aluminum T.
 - c. Finish: Nexus-T.
 - d. Finish: Incus-T.
 - e. Finish: Omicron-T.
 - f. Finish: Trapecius-T.
 5. Slip-Resistant Floor Glass: SEVASA CriSamar STEP S-Series, satin design.
 - a. Finish: Lunaris -S.
 - b. Finish: Aluminum-S.
 - c. Finish: Nexus-S.
 - d. Finish: Incus-S.
 - e. Finish: Omicron-S.
 - f. Finish: Codex-S.
 - g. Finish: Versus-S.
 6. Slip-Resistant Floor Glass: SEVASA CriSamar STEP X-Series, extra anti-slip.
 - a. Finish: Lunaris-X.
 - b. Finish: Aluminum-X.
 - c. Finish: Nexus-X.

- d. Finish: Incus-X.
 - e. Finish: Omicron-X.
 - f. Finish: Codex-X.
 7. Aluminum Framing: Alloy 6063-T6 extruded aluminum.
 8. Clips and Fasteners: Stainless steel.
 9. Sealant: Dow Corning 995 structural sealant.
 10. Lighting Option: Integrated LED lighting at perimeter.
- D. Structural Glass Stair Treads and Landings: Provide engineered stair treads and landings by Glass Flooring Systems, Inc. with the following characteristics:
1. Application: Interior.
 2. Application: Exterior.
 3. Glass Assembly: Three layers of 3/8-inch glass with Eastman Safety PVB or SentryGlass interlayers as applicable.
 - a. Interlayer: Clear.
 - b. Interlayer: Digital printed.
 - c. Interlayer: Decorative mesh.
 - d. Interlayer: Colored.
 4. Slip-Resistant Floor Glass: SEVASA CriSamar STEP T-Series, transparent.
 - a. Finish: Lunar-T.
 - b. Finish: Aluminum T.
 - c. Finish: Nexus-T.
 - d. Finish: Incus-T.
 - e. Finish: Omicron-T.
 - f. Finish: Trapecius-T.
 5. Slip-Resistant Floor Glass: SEVASA CriSamar STEP S-Series, satin design.
 - a. Finish: Lunar -S.
 - b. Finish: Aluminum-S.
 - c. Finish: Nexus-S.
 - d. Finish: Incus-S.
 - e. Finish: Omicron-S.
 - f. Finish: Codex-S.
 - g. Finish: Versus-S.
 6. Slip-Resistant Floor Glass: SEVASA CriSamar STEP X-Series, extra anti-slip.
 - a. Finish: Lunar-X.
 - b. Finish: Aluminum-X.
 - c. Finish: Nexus-X.
 - d. Finish: Incus-X.
 - e. Finish: Omicron-X.
 - f. Finish: Codex-X.
 7. Clips and Fasteners: Stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for existing conditions, installation tolerances, and other conditions affecting performance of structural glass flooring.

1. Verify that substrates comply with tolerances and other requirements specified in other Sections.
2. Verify that pitch of 1/8 inch per foot is achievable.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install glass flooring in accordance with manufacturer's instructions and approved submittals and the following:
 1. Do not use panels with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.
 2. Rigidly secure nonmovement joints.
 3. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
 4. Seal joints watertight.
- B. Erection Tolerances: Install glass flooring systems to comply with the following maximum tolerances:
 1. Alignment: Limit offset from true alignment to 1/16 inch where surfaces abut in line, edge to edge, at corners, or where a reveal or protruding element separates aligned surfaces by less than 3 inches; otherwise, limit offset to 1/8 inch.
 2. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet but no greater than 1/2 inch over total length.

3.3 CLEANING AND PROTECTION

- A. Protect structural glass flooring from damage during construction until date of Substantial Completion. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces. Clean glass on both surfaces.
- B. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from during the construction period.

END OF SECTION