

Crystal Structures – GrowTech™ Greenhouse System

CSI Section 13 34 13 – Greenhouses

Product Overview

The **GrowTech™ Greenhouse System** by **Crystal Structures** is a high quality, architectural, pre-engineered, glazed structural system designed for educational, research, and commercial horticulture environments.

Each greenhouse combines durable aluminum or galvanized framing with high-performance glazing options to deliver year-round daylighting, energy efficiency, and environmental control specific to your needs.

Crystal Structures' design-build approach ensures seamless integration from **concept through completion**, offering engineered systems that meet both performance and aesthetic goals.

System Description

A complete greenhouse structure consisting of:

- **Aluminum framing** designed for site-specific snow, wind, and seismic loads.
 - **Hot-dipped galvanized steel frame** engineered for site-specific snow, wind, and seismic loads.
 - **Polycarbonate glazing system** available in multiwall, twinwall, or clear single-wall configurations.
 - **Insulated glass unit** consisting of tempered and laminated glass configurations
 - Factory-extruded aluminum caps and trim for corrosion protection and long-term durability.
 - Integrated natural or mechanical ventilation, shading, and optional environmental controls.
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Performance Features

- **Durability:** Corrosion-resistant galvanized steel and UV-protected polycarbonate panels ensure long service life with minimal maintenance.
- **Daylighting:** Up to **85% light transmission** while diffusing harsh sunlight to promote healthy plant growth.

- **Thermal Efficiency:** Multiwall polycarbonate reduces heat loss and provides superior insulation compared to glass.
- **Safety:** Impact-resistant glazing resists breakage from hail or debris and meets ASTM E84 for flame spread classification.
- **Weather Resistance:** Factory-sealed joints and aluminum trim ensure watertight performance under all conditions.

Technical Data

Component	Specification
Frame Material	Aluminum or Hot-dipped galvanized structural steel
Finish	Factory-applied corrosion-resistant coating
Glazing Material	Glass, or multiwall polycarbonate, UV-resistant
Panel Thickness	16 mm to 25 mm (varies by insulation and span)
Light Transmission	65% – 85% (depending on glazing type)
Thermal Insulation (R-value)	R = 1.5 – 3.5 typical
Wind Load Capacity	Up to 120 mph (site-specific)
Snow Load Capacity	Up to 60 psf (site-specific)
System Life Expectancy	20 – 25 years typical with minimal maintenance

Accessory Options- Greenhouse accessories available in levels 1-3 (site specific variables)

- Roof and sidewall ventilation systems (manual or motorized)
- Shade cloth systems (interior or exterior mounted)
- Heating, cooling, and automated environmental controls
- Gutter-connected ranges or free-standing units

Compliance and Standards

- **CSI Division 13 – Special Construction**
- **Section 13 34 13 – Greenhouses**
- Complies with applicable **International Building Code (IBC)** and **ASCE 7** load requirements
- **ASTM E84** (Surface Burning Characteristics)
- **NFRC** energy performance compliant (when specified)
- **LEED®** compatible: contributes to daylighting and sustainable design credits

Applications

- K–12 and higher education greenhouse classrooms
 - University research and teaching facilities
 - Botanical gardens and community education centers
 - Commercial horticulture and plant propagation spaces
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Warranty

- **Polycarbonate Panels:** 10-year limited warranty against yellowing and light transmission loss
 - **Insulated glass unit:** 10-year limited warranty
 - **Structural Frame:** 10-year limited warranty against rust-through or structural failure
 - **Workmanship:** 1-year installation warranty when installed by certified technicians
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Manufacturer

Crystal Structures Glazing

Phone: (800) 222-1598

Website: www.crystalstructuresglazing.com

Product Line: *GrowTech™ Greenhouse Systems*

Division: Daylighting, Sloped Glazing, and Specialty Structures

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