SEEDMATCHGROUP

Commercial Agriculture Glossary

Greenhouses & climate

Polytunnel (High Tunnel)

A low-cost structure with a bent steel frame covered in polyethylene film, used for season extension and basic crop protection. Procurement buyers value it for fast deployment and lower capital outlay versus glass or multi-span systems.

Multi-Span Greenhouse

A series of connected gutter-linked bays forming one continuous covered area, enabling larger contiguous growing footprints and shared climate infrastructure. It is the standard structural format for commercial-scale protected agriculture procurement.

Venlo Glasshouse

A glass-clad multi-span design with small, repeating roof panes and slender trusses, originating from Dutch horticulture and favoured for high light transmission and long structural life. Buyers typically select it for high-value crops where light quality and durability justify the higher capital intensity.

Semi-Closed Greenhouse

A greenhouse concept that limits passive roof ventilation in favour of mechanical air handling with heat recovery, sustaining more stable temperature, humidity, and CO2 levels. It suits buyers prioritising climate consistency and energy management over the lowest initial structural cost.

Pad-and-Fan Cooling

An evaporative cooling method where exhaust fans draw outside air through saturated cellulose pads, lowering greenhouse air temperature as water evaporates. It is the standard mechanical cooling approach specified for hot, dry-climate greenhouse projects.

High-Pressure Fogging

A climate control method that atomizes water into fine droplets suspended in the air, cooling the greenhouse through evaporation while also raising humidity, often used alongside or instead of pad-and-fan systems. It suits humid climates or crops needing finer humidity control than evaporative pads provide.

Horizontal Air Flow (HAF) Fans

Low-speed circulation fans positioned to create a continuous horizontal air movement loop within the greenhouse, equalizing temperature and humidity and reducing microclimate pockets around the canopy. They are a low-cost addition specified to improve uniformity alongside heating, cooling, or screening systems.

Greenhouse Heating System

Central or distributed equipment, such as hot-water pipe rails, unit heaters, or boilers, that maintains minimum crop temperatures during cold periods and supports consistent growth cycles. Procurement specifications should define heating capacity requirements by climate zone and crop rather than by brand.

Energy / Shade Screen

A retractable fabric layer installed below the roof that can be deployed to retain heat at night, reduce solar load during the day, or diffuse light, depending on the screen type selected. It is a key lever for balancing energy consumption and crop quality in a climate control specification.

Natural and Mechanical Ventilation

Air exchange achieved either passively through roof and side vents driven by buoyancy and wind, or actively through exhaust fans and intake louvers. The choice and sizing of ventilation strategy shapes the rest of the climate system design and should be matched to local wind and temperature patterns.

Climate Computer (Climate Controller)

A centralized control system that integrates sensor data on temperature, humidity, CO2, and light to automatically coordinate vents, screens, heating, cooling, and fogging equipment toward set targets. It is the integration layer buyers should specify early, since it determines compatibility across all climate equipment suppliers.

CO2 Enrichment

The controlled injection of carbon dioxide into the greenhouse atmosphere, typically from combustion flue gas, liquid CO2, or dedicated generators, to support photosynthesis above ambient outdoor concentrations. It is most relevant in closed or semi-closed greenhouses where ventilation losses are minimized.

Cladding Material

The transparent or translucent covering of a greenhouse structure, such as glass, multi-wall polycarbonate, or polyethylene film, each offering different trade-offs in light transmission, insulation, durability, and replacement cycle. Cladding choice is a foundational procurement decision that interacts directly with heating, cooling, and screening needs.

Protected Agriculture

Crop production carried out inside structures, such as greenhouses or tunnels, that moderate the external environment to reduce weather and pest exposure and extend growing seasons. It is the broad category under which greenhouse climate and structural procurement decisions are made for commercial projects.

Hydroponic Growing System

A soilless cultivation method that delivers nutrients directly to plant roots via a water-based solution, commonly paired with controlled-climate greenhouses to maximize the return on environmental control investment. The choice of hydroponic system interacts with climate design through humidity load and root-zone temperature requirements.

Vapour Pressure Deficit (VPD) Management

The practice of managing the gap between the moisture the air can hold and the moisture it actually holds, which drives plant transpiration rates and disease risk. Climate computers typically use VPD alongside temperature and humidity setpoints to coordinate heating, ventilation, and fogging decisions.

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