

SPECIFICATION TEXT – SUNPARK GREENHOUSE SYSTEM

27.31.20 – Self-Supporting Greenhouse Roofs with Integrated PV Panels

0. Description

Supply and installation of a self-supporting greenhouse roof system, type Sunpark Greenhouse System, consisting of a roof structure with integrated photovoltaic (PV) panels to replace traditional greenhouse covering.

The system is mounted on existing or new greenhouse gutters and includes all components required for a complete, structurally safe roof with a high level of watertightness, including fasteners and controlled rainwater drainage via greenhouse gutters.

1. Materials

1.1 General

The system consists of:

- Existing or new greenhouse gutters (steel or aluminium)
- Rails (aluminium roof profiles)
- Ridge construction
- Fasteners
- Integrated PV panels

1.2 Gutters

- Type: greenhouse gutters (Venlo system)
- Material: steel or aluminium
- Function: load-bearing and water-draining
- Existing gutters must be structurally suitable (to be verified)
- Note: For projects outside standard greenhouse sizes, unusual loads, or applications outside the Netherlands, the structure must be verified by a locally certified structural engineer.

1.3 PV Panels

- Type: standard photovoltaic panels
- Application: integrated as roof covering
- Orientation: portrait
- Dimensions and power ratings (indicative):

Roof Span	Panel Size	Power
approx. 3.20 m	1762 × 1134 × 30 mm	± 460 Wp
approx. 4.00 m	2278 × 1134 × 30 mm	± 600 Wp



Final selection according to supplier specifications and project calculation.

2. Execution

2.1 General

Installation according to the system supplier's instructions.

2.2 Structure

- PV panels form a pitched roof together with rails and ridge elements
- Roof structure is self-supporting between the greenhouse gutters
- Mounted on existing or new greenhouse gutters
- Column spacing and spans according to structural calculation

2.3 PV Panels

- Installed between gutter and ridge
- Fastened using aluminium rails
- Connection ensures a high level of watertightness according to system detailing

2.4 Ventilation

- Roof equipped with integrated ventilation provisions
- Ventilation contributes to cooling and efficiency of the PV panels

2.5 Roof Pitch

- Roof slope: approx. 29–30°

3. Requirements and Performance

3.1 General

The system must comply with the Dutch Building Decree (Besluit bouwwerken leefomgeving, Bbl).

3.2 Structural Safety

- Design and calculation according to:
 - NEN-EN 13031 (greenhouses)
 - Additionally, if applicable: NEN-EN 1990–1999 (Eurocodes)
- Verification by a locally certified structural engineer required for non-standard gutters, loads, or projects outside the Netherlands



3.3 Loads

- Loads according to:
 - NEN-EN 13031 (greenhouses)
 - NEN-EN 1991 (if Eurocodes are applied)

3.4 Specific Application

- Primarily intended for greenhouses and garden centers
- If the building function changes, verification according to Eurocodes is required
- Existing greenhouse gutters may be a limiting factor

3.5 Dimensioning

- Profiles and fasteners designed for:
 - Snow load
 - Wind load
 - Consequence class according to project

3.6 Water Drainage / Watertightness

- Roof structure must drain rainwater via greenhouse gutters with a high level of watertightness

3.7 Durability

- Materials must be low-maintenance and corrosion-resistant
- Electrical components installed in a dry environment

3.8 Use

- Suitable for greenhouses, garden centers, and comparable applications
- Not primarily intended for thermally insulated or heated buildings

4. Applications

Applicable for:

- Production greenhouses
- Garden centers
- Processing spaces
- Logistics areas
- Storage areas
- Technical rooms
- (Semi-)transparent greenhouse roofs



5. Measurement and Payment

5.1 Unit of Measurement

- m² of projected roof area

5.2 Included in Price

- Supply and installation of complete roof structure
- Integrated PV panels (mechanical)
- Fasteners
- Rainwater drainage via greenhouse gutters
- Coordination with existing or new greenhouse structure

5.3 Not Included

- Main supporting structure (columns/beams)
- Modification or reinforcement of existing greenhouse gutters, unless specified
- Electrical installation, cabling, and inverters