

NaturalSpan Product Datasheet

Product Overview

The NaturalSpan system is a thermally broken, extruded aluminium glazing bar arrangement, incorporating a typical mullion and transom assembly with an internal water management system with condensation channels to the lower cill edges of the glazing frame. This system is capable of spanning an infinite length and can also be designed to span great distances unsupported.

This system benefits from the flexibility of being able to be manufactured to a variety of different rooflight styles to suit a variety of applications but most commonly:

- Mono-pitch assembly – Max 5.5m unsupported (please confirm with office for bespoke items)
- Ridge light with hipped ends assembly - (please confirm with office for span capabilities)
- Ridge light with vertical ends assembly - (please confirm with office for span capabilities)
- Lantern light assembly - (please confirm with office for span capabilities)
- Barrel Vault assembly – Span capability from 500mm to 9 metres unsupported to an infinite length.
- Pyramid Assembly - (please confirm with office for span capabilities)
- Octagonal assembly - (please confirm with office for span capabilities)
- Vertical assembly - (please confirm with office for span capabilities)
- Bespoke assembly (please contact the design office with bespoke queries)

Glazing is secured in place using a pressure plate system that is secured to the glazing bars and finished using an extruded capping piece.

External perimeter flashings can also be introduced to encapsulate the unit and can be manufactured to suit the specific project requirements.

Ventilation

Ventilation can be introduced in the system in a variety of applications:

- Glaze-in natural ventilators in both manual and 24v or 240V automatic opening options
- Glaze-in PR60 smoke ventilators in 24v automatic opening option (See Page 4)
- Trickle ventilation
- Hit and miss ventilation
- Vent Axia fan ventilation
- Vortice fan ventilation
- Permanent louver ventilation
- Controllable louver ventilation
- Dampened louver ventilation

Glazing

We can offer a comprehensive range of high-performance glass to suit the specific requirements of any project; glazing layers include single, double, or triple glazing. Many specification options are available to achieve required U-Values.

Polycarbonate glazing is also offered in 3 different colour tints of clear, opal or bronze. Polycarbonate options are:

- 16mm multi-wall structural polycarbonate
- 25mm multi-wall structural polycarbonate
- Factory assembled double or triple skin cassettes manufactured from 3mm polycarbonate

Non-Fragility

Naturalight Systems Ltd have recognised the importance of non-fragile glass roof assemblies and undertook independent testing of their NaturalSpan glazing system. The non-fragility testing was carried out at UKAS accredited Wintech Testing and certification laboratory in accordance with the centre for window and cladding technology (CWCT) technical notes TN66 & 67, recognised as the only industry standard for safety and fragility for glazed roofing, where NaturalLight achieved the highest possible standard, class 1 non-fragility rating. Other non-fragile class 2 arrangements are available to meet TN92 deemed to satisfy specifications. (Please contact Naturalight Systems Ltd design office for design constraints.

Loadings

Generally designed in accordance with BS EN 1991-1-1:2002 Eurocode 1. Actions on Structures. General Actions. Densities, Self-Weight, Imposed Loads for Buildings & BS EN 1991-1-4:2005+A1:2010 Eurocode 1. Actions on Structures. General Actions. Wind Actions Max. 1.2kPa wind and 0.75kPa imposed loading.

Thermal Performance

Part L Compliant in all variations below 2.0Wm²k overall system U-Value.

Fire Regulations

BS 476 pt7: Class 1 (1991)
Class 'O' Tp(a)

Finish

Rooflights can be supplied in mill finish or polyester powder coated to a variety of RAL colours.
BS6496 80-100 microns.

General Design Information

BS EN 1999-1-1:2007+A2:2013 Eurocode 9. Design of Aluminium Structures
BS EN 1991-1-4:2005+A1:2010 Eurocode 1. Actions on Structures. General Actions. Wind Actions
BS EN 1991-1-1:2002 Eurocode 1. Actions on Structures. General Actions. Densities, Self-Weight, Imposed Loads for Buildings
BS EN 1991-1-3:2003+A1:2015 Eurocode 1. Actions on Structures. General Actions. Snow Loads
BS 6375-1:2015+A1:2016 – Performance of windows, classification for weather tightness.
BS EN 1026-2000 – Windows and Doors. Air Permeability. Test Method
BS 5516-2:2004 – Patent glazing and sloping glazing for buildings.
BS EN 12153:2000 – CWCT Air permeability test method applicable to glazed roofs
TN66 / TN 67 – Non fragility of glass roofing assemblies (where applicable)

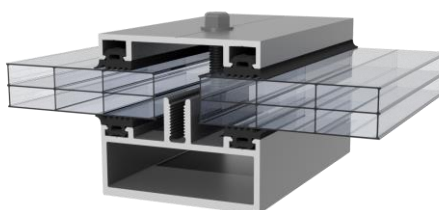
Section Renders



Naturalspan DGU

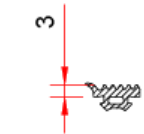


Naturalspan Polycarbonate

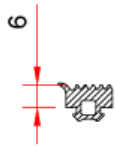


Naturalspan Barrel-Vault

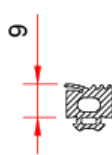
Naturalspan Bars, Capping, Pressure Plates and Gaskets



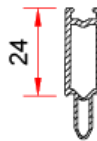
3mm Gasket



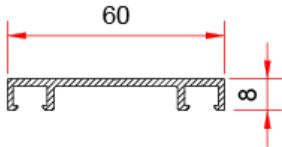
6mm Gasket



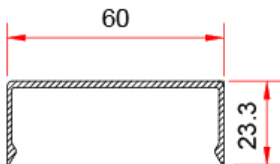
9mm Gasket



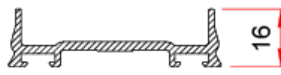
Thermal Isolater



8mm Capping



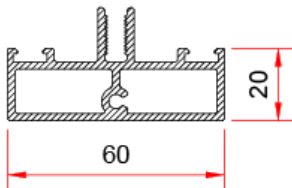
Knock On Capping



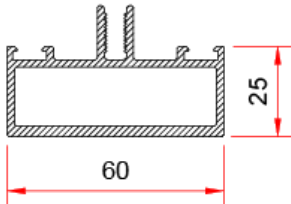
Pressure Plate



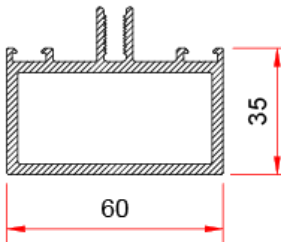
uPVC Pressure Plate



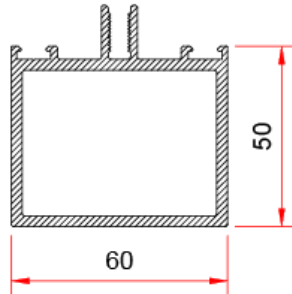
20mm Transom



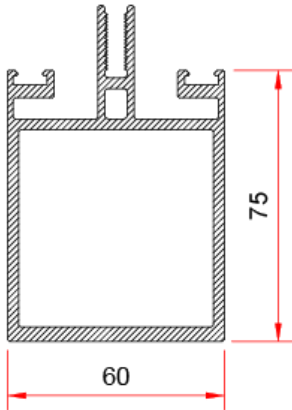
25mm Transom



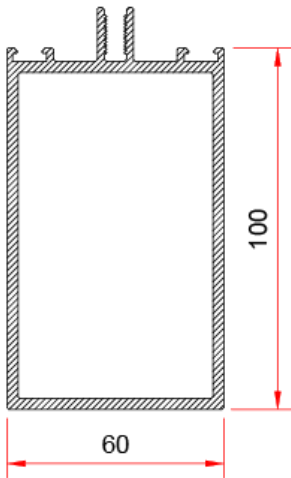
35mm Transom



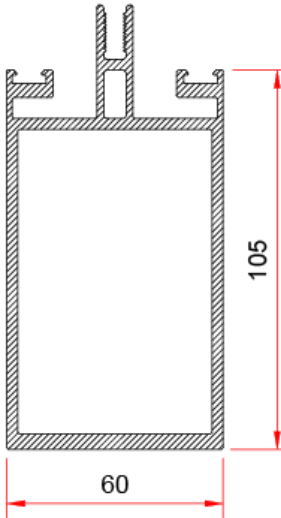
50mm Transom



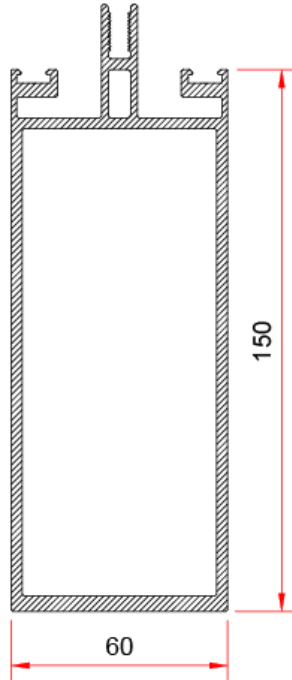
75mm Mullion



100mm Transom

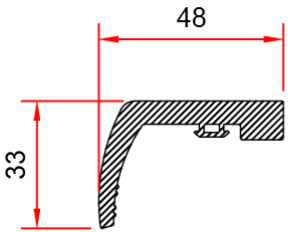


105mm Mullion

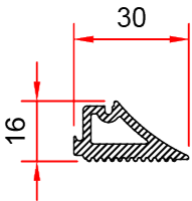


150mm Mullion

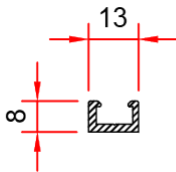
Naturalspan Barrel Vault Components



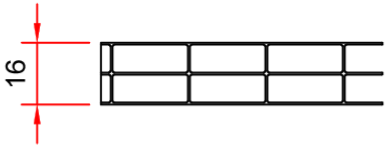
Gable Gasket



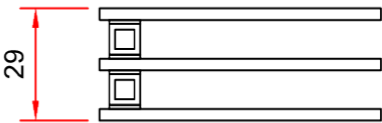
Wedge Gasket



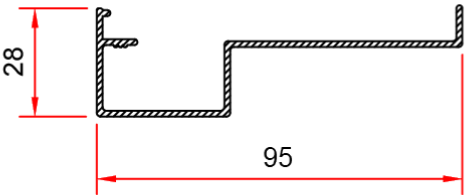
Balancing Channel



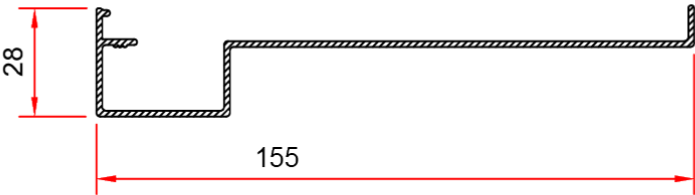
16mm Structural Multiwall Polycarbonate



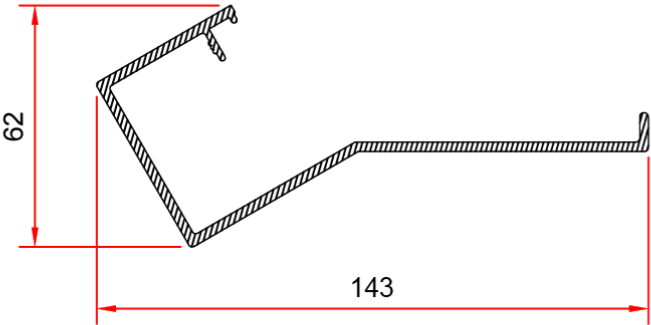
Triple Skin Cassette Glazing



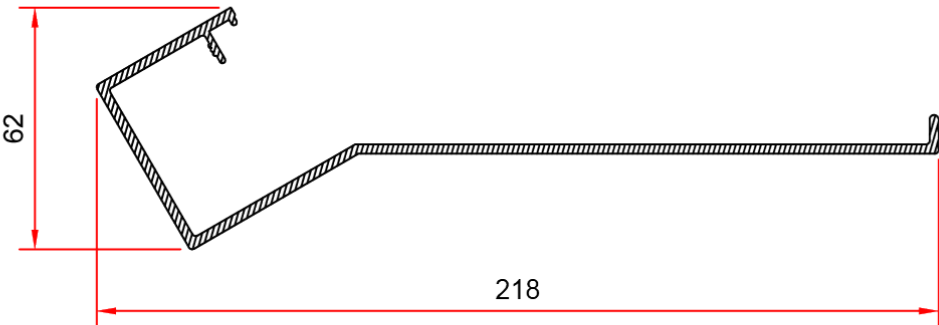
Standard Gable Tray



Extended Gable Tray



Standard Barrel Tray



Extended Barrel Tray

PR60 Opening Vents

Opening for daily ventilation (230v)

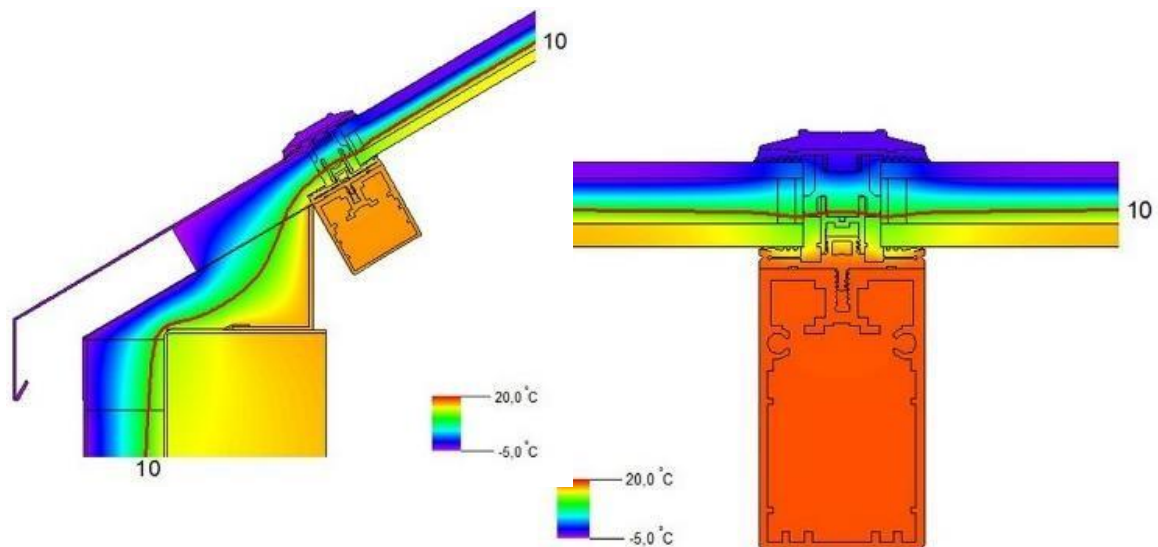
Opening for SHEV (24v)



Performance

- CE marked quality according to EN 1873.
- Life Cycle Assessment (LCA) to EN 15804.
- Typical U-value verification in accordance with EN ISO 10077-1 and 10077-2. System U-value: Double Glazed Thermal transmittance of glazing system: U_g approx. $1.1 \text{ W/m}^2\text{K}$. $U_{mt} \leq 1.30 \text{ W/m}^2\text{K}$
- Airtight to Class 4, EN 12207.
- Water tightness to Class 4 according to BS EN 12208.
- Wind Load to Class C4, EN 12210.
- Thermally broken: 10° isothermal line remains within the structure (see diagram)

Isothermal line diagrams



Insulated Double Glazed Louvre Windows

Louvre Windows are available with a wide variety of fixing adapters, including 17x32mm and 25x32mm (and 28mm) integral glazing adapters, masonry frame adapters, angle flange frames and bespoke glazing adapters to suit a wide variety of applications.

Key Features

- Louvre blades are flush with frame on the outside.
- Louvre blades centrally pivoted. Glass louvres fully framed.
- Thermally separated aluminium extrusions.
- Double or triple-glazed with a total thickness of 28 to 32 mm. Including EPDM gaskets.
- Natural smoke and heat exhaust ventilator (NSHEV) smoke extraction from lift shafts.

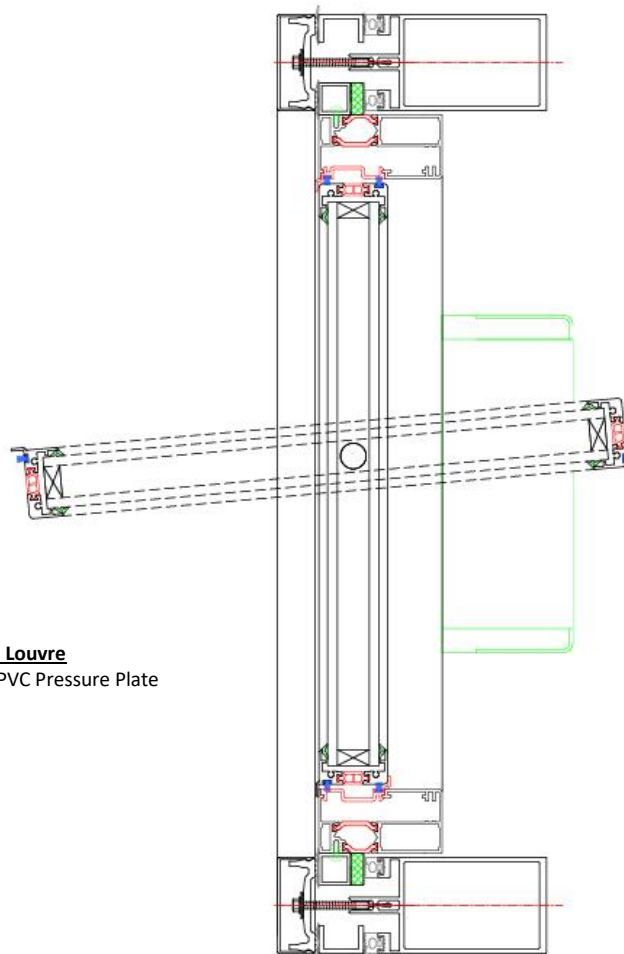
Dimensions

Vent Frame Dimensions

- Visible Frame Width - 40mm
- Frame Depth - 77mm
- Louvre Height - 200mm – 450mm
- Max Frame Height - Unlimited (Couplable)
- Max Frame Width - 2500mm

Certification

- NSHEV certification in accordance with EN 12101-2
- Windows and Doors Product Standard certified in accordance with EN 14351-1
- Flow coefficient Cvo in accordance with EN 12101-2 - Up to 0,58
- Watertightness classification in accordance with EN 12208 - Class 5a
- Air permeability classification in accordance with EN 12207 – Class 4
- Impact resistant in accordance with DIN 18032-3



Typical Section Through Double Glazed Louvre

Glazed Into Naturalspan System With uPVC Pressure Plate