

# MANUAL VENTILATION OPENING SYSTEM

**Technical Data Sheet**

## PRODUCT DESCRIPTION

The Shams manual ventilation opening system consists of a white lacquered aluminium frame hinged to the upstand. The dome is opened manually by means of a screw jack operated with an awning-type crank handle.

A top bracket is fixed to the aluminium frame and a bottom bracket is fixed to the upstand, ensuring a stable and durable connection between the screw jack and the rooflight assembly.

The system can be installed on any Shams upstand made of PVC, FRP (fiberglass reinforced polyester) or galvanized steel, with square, rectangular or circular bases and in different heights of 150, 180 or 300 mm.

For large sizes, from 170 × 170 cm in the square format and from 150 × 200 cm in the rectangular format, a double screw jack is supplied with a 1 m long coupling bar to guarantee uniform and safe opening.

The system is compatible with all Shams domes: PMMA, HeatStop and compact polycarbonate.

## TECHNICAL CHARACTERISTICS – ALUMINIUM FRAME

The aluminium profiles used for the frame are manufactured from an alloy designed to provide a minimum tensile strength of 215 MPa. Their main fields of application are the building and transport industries, where they offer good mechanical strength and load distribution.

Typical applications include windows, roof domes, partitions and containers, among others.

## SPECIAL PROPERTIES OF THE ALUMINIUM ALLOY

- Formability: good.
- Machinability: moderate; improved in T6 temper.
- Weldability: suitable for all common welding methods.
- Corrosion resistance: good.
- Surface treatment: suitable for all types of surface treatments.
- Anodising: good.

## TYPICAL PHYSICAL PROPERTIES OF THE ALUMINIUM ALLOY

| Property | Value |
|---|---|
| Density | 2.70–2.71 kg/dm³ |
| Modulus of elasticity | 69 kN/mm² |
| Shear modulus | 26 kN/mm² |
| Coefficient of linear expansion (20–100 °C) | 23 µm/(m·°C) |
| Thermal conductivity (20 °C) | 200 W/(m·K) |
| Specific heat capacity (0–100 °C) | 880–900 J/(kg·K) |
| Electrical resistivity (20 °C) | 33 nΩ·m |
| Electrical conductivity (20 °C) | 52 % IACS |
| Solidus temperature | 625–635 °C |
| Solvus temperature | 475–490 °C |

## TECHNICAL CHARACTERISTICS – SCREW JACK

The screw jack is manufactured from high-quality chromed steel and is composed of an inner endless brass screw running inside an outer screw. When the lower end of the jack is turned using the crank, both screws extend uniformly, ensuring a smooth and stable opening movement.

The jack is operated manually from the interior by means of a detachable crank handle. This allows the opening angle of the dome to be precisely adjusted, with a maximum opening stroke of 310 mm.

Its use is recommended for installation heights not exceeding approximately 3.5–4.0 m.

## TECHNICAL CHARACTERISTICS – DOUBLE SCREW JACK

The double screw jack system consists of two chromed steel screw jacks connected by a 1 m long coupling bar, which synchronises their movement and ensures uniform opening along the width of the dome.

The system is operated manually from the interior using a single crank handle and is designed for installation on large roof domes that require this type of reinforced opening mechanism.

The values shown are based on the technical data provided by the raw material suppliers and correspond to tests carried out under standard conditions. Shams reserves the right to introduce modifications derived from product development and improvement.