CUBATURE BUILDINGS





Product catalog 2018

NATURAL LIGHTING AND SMOKE EXHAUSTING SYSTEMS FOR CUBATURE BUILDINGS

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INTRODUCTION



Skylights, smoke vents and roof hatches are used at many different kinds of buildings (warehouses, industries, market buildings), entertainment and sports buildings or shopping malls. They also work out perfectly in places such as car repair shops and outbuildings.



ARCHED SKYLIGHTS

Width of skylights may be from 1 to 6 m. Due to panel construction, length is unlimited. The supporting structure are system profiles made of natural aluminium which is corrosion resistant. We can also paint profiles in any colour from RAL palette. Filling of skylights is made of multi-chamber polycarbonate of different thickness and colour.

Main features of DWD Skylight Plus:

- a unique construction of profiles, which allows to create fillings of sets of polycarbonate panels
- upper profiles are not drilled during installation
- front elements of skylights are prefabricated at the production process

Structure

The supporting structure of arched skylights is base, made of galvanized steel sheet. Depending of the needs there is a possibility to produce bases in any of RAL colours and adjust them to the roof construction covering. Generally, we recommend bases to be installed on construction on it's entire circumference. In unique situations it is possible to produce self-supporting bases from thicker steel sheet, which allows to install them point on load-bearing roof construction elements / girders.

Solutions used in DWD Skylight Plus guarantees:



Keeping the right configuration of skylights dimensions and for materials which it is produced of, it is possible to gain the total heat transfer coefficient value U=1,3 W/m²K or lower. It allows to provide better comfort for it's users and to reduce building exploitation costs. It also contributes to lower the pollution emitted to atmosphere from heat energy sources.



cross-section



skylight with daily ventilation windows



Skylights offered by DWD BauTech were tested for compatibility with European Norm EN 14963 and for fire resistance B_{roof}(t₁).

SMOKE VENTS

Smoke vents are one of the most important elements of fire protection system. As an element of gravitational smoke and heat exhaust ventilation system it allows to remove from the building harmful smoke and gases, which are produced during the fire. It also enables efficient evacuation and fire-fighting as well as it minimizes material damages.

In normal operating conditions smoke vents are also performing such functions like lighting interiors, daily ventilation or roof hatches.

Smoke vents can be installed in roofs of buildings as:

- free standing
- integrated with arched skylight



free standing

integrated with arched skylight



Types of drivers in smoke vents

The type of driver in smoke vent depends of building type and it's way of usage as well as of type of designed smoke and heat exhaust ventilation system.

There are reliable opening devices in DWD Sky Vents, like:

- electric actuators which may open flaps both, to smoke exhaust and daily ventilation
- pneumatic cylinders which open flaps to smoke exhaust
- oleo-pneumatic (gas springs) which support opening mechanisms

Structure

The supporting structure of DWD Sky Vents covering are aluminium and galvanized steel profiles which can be also painted in any RAL colour. Covering is installed on straight or sloped base, which is made of galvanized steel sheet (it can be also painted in RAL colours). Fulfillment of covering is made of multi-chamber polycarbonate which is available in different thickness and colours.

The unique structure of smoke vents covering provides easy and fast installation as well as durability, resistance and reliability of working in fire conditions.

Construction of free standing smoke vent

Construction of smoke vent integrated with arched skylight



Cross sections of free standing smoke vents

straight base





sloped base



Cross sections of skylights with integrated smoke vents

full width of skylight

partial width of skylight



Smoke vents offered by DWD BauTech are tested to be compatible with EN 12101-2 and have fire resistance $B_{roof}(t_1)$.

SMOKE AND HEAT EXHAUST VENTILATION SYSTEMS



To provide correct working of smoke vents in fire or in normal conditions there should be installed a smoke and heat exhaust ventilation system and/or daily ventilation control system which allows to open or close the flaps.

Depending on type of installed system we can have:

- electric smoke and heat exhaust ventilation system 24V (it can also be used for daily ventilation)
- pneumatic smoke and heat exhaust ventilation system
- pneumatic smoke and heat exhaust ventilation system with additional independent electric daily ventilation control system 230V

ELECTRIC SMOKE AND HEAT EXHAUST VENTILATION SYSTEMS

Electric smoke exhausting systems are enabled as follows:

- automatic by electric signal sent from smoke detectors or temperature sensors
- automatic by electric signal sent from fire alarm control panel to electric smoke exhaust control unit
- manual by pressing fire alarm button



PNEUMATIC SMOKE AND HEAT EXHAUST VENTILATION SYSTEMS

Pneumatic smoke exhausting systems are enabled as follows:

- automatic by thermovalve calibrated on 68°C, 93°C, 110°C, 141°C, 182°C
- **manual from pneumatic alarm box** by breaking glass and pressing button
- automatic from pneumatic alarm box with solenoid valve when it receives at least three electrical impulses 0,29 A (24V), sent by fire alarm control panel

Pneumatic smoke and heat exhaust ventilation system schema with daily ventilation



DAILY VENTILATION SYSTEMS



For windows built into skylights or for pneumatic smoke vents (both, free standing and built into skylights) there is a possibility to install an electric actuator 230V for ventilation function. For electric smoke vents this function is performed by actuator which opens flap for smoke exhausting.

Electric ventilation system schema **Electric actuator** TVD Skylight with integrated ventilation windows Wind and rain sensor **Ventilation button** Wind and rain control unit

ROOF HATCHES

Roof hatches allow us to get to the building roof safe. Same as skylights it also lets the sunlight into thebuilding. **DWD BauTech** offers roof hatches both with standard dimensions and produced to order, according to customer expectations.

Standard covering of roof hatches is made of aluminium and steel profiles, and is filled with multi-chamber polycarbonate which is available in different thickness. Covering is installed on straight or sloped base, which is made of galvanized steel sheet (covering profiles and base can be painted in RAL colours).

Opening of roof hatches is aided by gas springs. Electric smoke vents can also be used as roof hatches, but it must be properly prepared during production.

Roof hatch



FLAT SKYLIGHTS

Flat Skylight is unique solution which uses combination of high level of mechanic, esthetic and thermal properties. External cladding is made of resin and glass composite and is fitted to shape of roof sandwich panel. This cladding is connected with polycarbonate and it all is perfect product for warm lighting roofs made of sandwich panels.

Flat skylight



External cladding and polycarbonate are connected by acrylic tape and polyethylene gaskets used on contact place of both materials. Chambers of polycarbonate are closed by a special sealing tape which saves it from dirt and water penetration.





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FAÇADE AND ROOF NATURAL LIGHTING SYSTEMS



DWD BauTech offers a **modular panels system made of multi-chamber polycarbonate.** Modules are connected to each other by a special tongue and groove. The complete system is made of polycarbonate (different thickness and colours) and of special aluminium profiles (standard or with warm filling). There is also a possibility to install windows in elevation façade lighting panels.



Using of modular panel system guarantees:

- easy and fast installation
- tongue and groove tightness between panels (10 years guarantee)
- resistance for ultraviolet rays and hailstorms
- high thermal isolation
- Iow load of wall construction







DWD BauTech offers:

- Skylights
- Smoke Vents
- Flat Skylights

The main objective of DWD BauTech Sp. z o. o. is to provide our customers comprehensive service of delivery and installation works in the field of cubature architecture. Reaction speed, punctuality and high flexibility are features which mark us out on the market. Product and service range size offered by DWD BauTech results from customer's expectations who wants to minimize the quantity of deliverers on one construction site and who strives to optimize the supply chain.

- Syphonic rainwater drainage system Gold Rain
- Façade lighting panels
- Assembly services









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