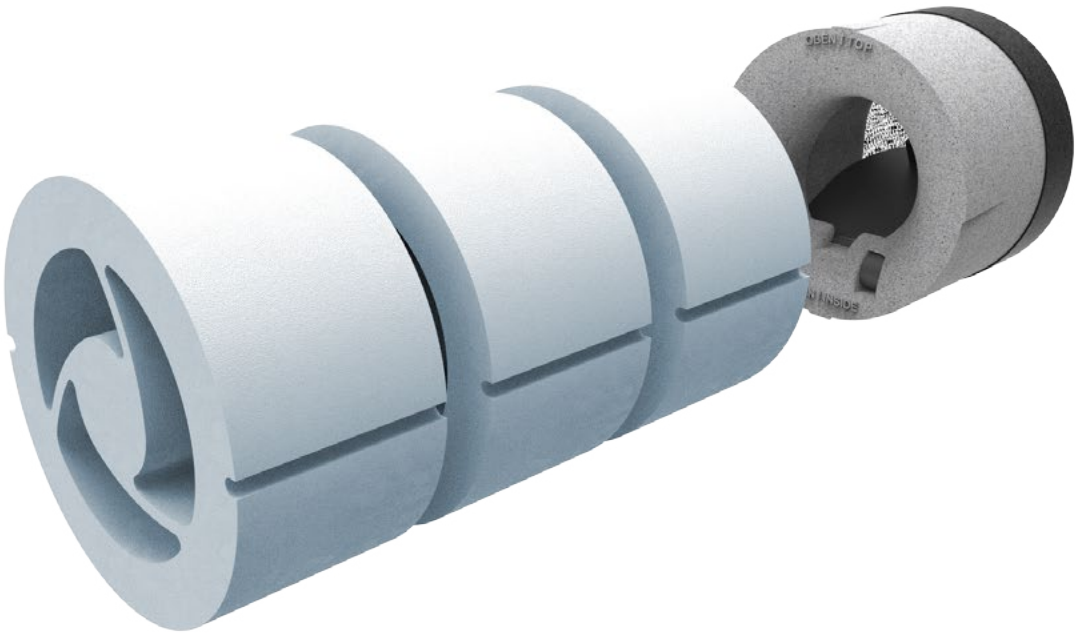


Outer wall air vent ALD

Installation and operating instructions

EN 170726-01 ALL

1 General remarks

The ALD air vent is used to inject fresh air into airtight buildings (houses, apartments, hotels, public buildings and office blocks) in a controlled manner in accordance with DIN 1946-6 / DIN 18017-3. It can be installed either in new buildings or in existing buildings undergoing refurbishment and/or modernisation. The system is unsuitable for extracting smoke or drying buildings, for rooms containing aggressive and/or caustic gases or extreme levels of dust.

To guarantee the fault-free and safe use of the system, it is vital to ensure appropriate transport and storage, professional planning and installation, as well as proper operation and maintenance. Modifications and reconfigurations of the unit / system are not permitted.

Before starting installation work, a plan should be made, detailing both the number and positioning of the air vents and the ventilation principle.

During planning, installation and operation, all relevant requirements, building and fire protection regulations and accident prevention regulations are to be complied with. In the planning phase, details need to be checked with the respective chimney sweep or ventilation expert.

1.1 Safety information

Attention is to be paid to the safety information contained in these instructions for installing and operating the units. Before any work is carried out on the unit / system, the instructions and safety information are to be read carefully in full. Non-compliance with the safety information can lead to harm/damage to persons and/or equipment.

Assembly, electrical installation and system start-up should only be performed by skilled persons. These are people with relevant safety training and qualified to install, commission and label equipment, systems and cabling in accordance with current safety standards.

The following list contains descriptions of the symbols and terms used in these instructions:

CAUTION
THIS HAZARD SYMBOL WARNS ABOUT THE DANGER OF HARM TO PERSONS OR DAMAGE TO PROPERTY.

ELECTRICITY
THIS HAZARD SYMBOL WARNS ABOUT THE DANGER OF ELECTROCUTION.

PLEASE NOTE
THIS WARNING SYMBOL INDICATES IMPORTANT INFORMATION.

2 System overview

The air vent unit consists of an inside vent cover with integrated filter unit, sound insulation elements for regulating the airflow volume, a wind pressure safety device with a pre-filter and an external cover (depending on the chosen version). The components are housed in an installation cylinder which is sealed inside the wall.

2.1 Functioning

Free-running ventilation

When planning the installation of free-running air vents, they must be positioned in accordance with the cross-ventilation principle. Airflow volumes must be calculated to take account of humidity levels. Account also needs to be taken of different wind pressures (for instance a pressure difference of 2 Pa in low-wind areas or 4 Pa in high-wind areas). Heat recovery is not possible.

Mechanical ventilation without heat recovery

When planning the installation of mechanically-operated air vents, they must be positioned on such a way that the whole target area is adequately ventilated. This means that the airflow volume has to be calculated in accordance with nominal ventilation (the minimum air exchange rate required for maintaining hygienic and health standards) without user support (window ventilation). Fan-supported ventilation means that the airflow volume can be exactly defined with a differential pressure of up to 8 Pa. Heat recovery is not possible.

2.2 Configuration

The ALD technical data can be selected in a variable manner, allowing the set specifications to be met. Generally speaking, the parameters are influenced by the inside vent cover, the number of sound insulation elements (SIEs) and their openings and the wall thickness.

The following example illustrates the configuration of an ALD. Please refer to the attached information sheet for all details needed to configure the ALD.

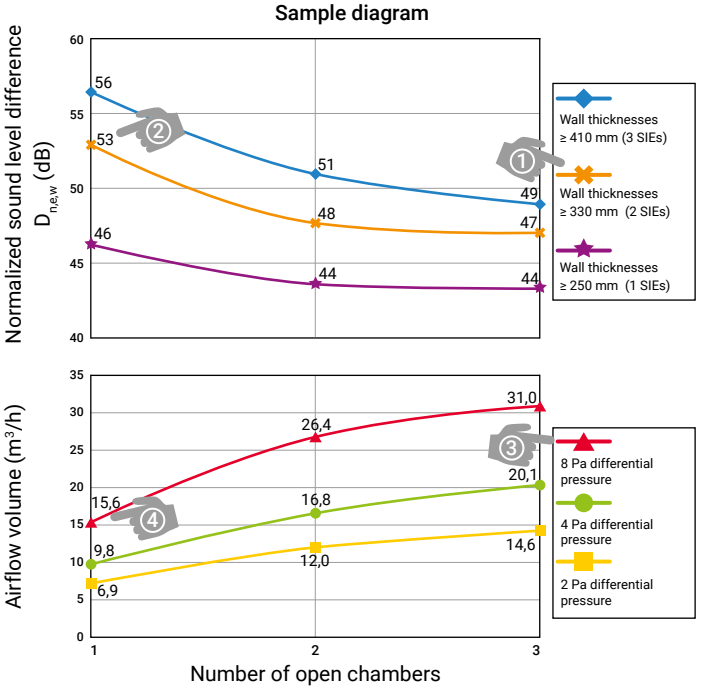
Sample configuration

Specifications:

» Building project with high sound insulation requirements (required normalized sound level difference: 51 - 55 dB)

» Wall thickness: 36.5 cm

Sample diagram



» 8 Pa differential pressure through the use of a centrifugal fan in the bathroom

We start by determining which system constellations are possible for the given wall thickness. This is done using the top diagram showing the normalized sound level difference and wall thicknesses. Given the sample wall thickness of 365 mm, the chart for wall thicknesses ≥ 330 mm is be used [1]. The chart for wall thicknesses ≥ 410 mm is not relevant in our case, as the given wall thickness is much lower. The required normalized sound level difference of 51 - 55 dB further limits the choice. In the case at hand, the required normalized sound level difference can be achieved using two sound insulation elements (SIEs) and 1 chamber [2]. Given the required differential pressure of 8 Pa, the resulting airflow volume is now calculated [3]. Using 1 chamber, the ALD supplies 15.6 m³/h of fresh air [4].

CALCULATIONS AND THE ORDER IN WHICH THEY ARE DONE ARE DEPENDENT ON THE GIVEN VALUES AND MAY DIVERGE FROM THE SAMPLE.

WHERE NECESSARY, INTERIM VALUES MAY BE INTERPOLATED USING THE DIAGRAMS.

2.3 Recommended positioning

The best positions for the ALDs are determined in the project planning phase. Not complying with the recommendations can negatively impact the correct functioning of the units.

» The distance between the inside vent cover and the ceiling must not be less than 150 mm. To best distribute the air, it is preferable to position the

units close to the ceiling. The recommended distance between vent and ceiling is 300 - 500 mm.

» The distance between the inside vent cover and the floor must not be less than 1000 mm.

» When installed on the same wall or adjacent walls, the minimum horizontal/vertical distance between two ALDs is 1000 mm. In addition, the diagonal distance between the two units must not be less than 1400 mm.

» A space of at least 150 mm surrounding the vent must be free of all objects.

» The ALD must not be covered by cupboards, technical installations, etc.

» The ALD must not be located near a room thermostat or above sensitive furniture, surfaces or other furnishings.

THE BEST PLACE FOR THE ALDS IS CLOSE TO THE CEILING ABOVE EXISTING RADIATORS, AS THIS ALLOWS THE OPTIMAL MIX OF HEATED ROOM AIR AND FRESH AIR.

3 Installation preparations

Before starting installation, please check that all components are present, as otherwise it will not be possible to complete the installation.

3.1 Contents

Content	Number
Inside cover with dust filter	1
Sound insulation element	3
Wind pressure safety device + pre-filter	1

3.2 Dimensions

Component	Width (mm)	Height (mm)	Depth (mm)	Ø (mm)
Sound insulation element	-	-	80	154
Wind pressure protection	-	-	112	152

3.3 Required tools

The following equipment is needed to install the ALD:

» Core drill with a Ø 162 mm bit

» Sabre saw for sawing plastic

» Mounting adhesive / sealant to fix the installation cylinder in place

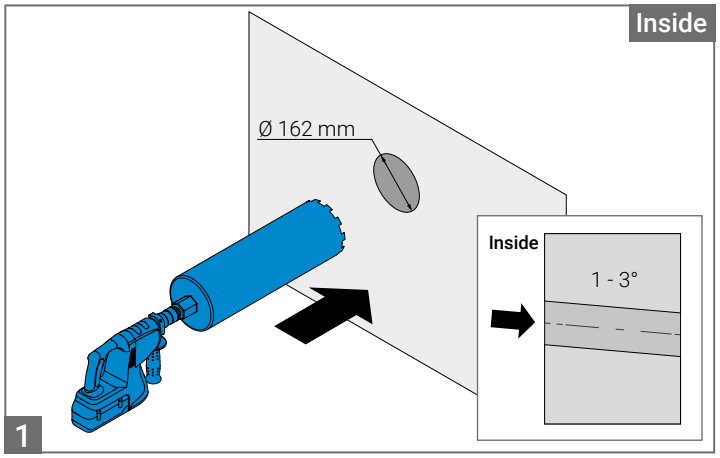
» Hammer and chisel for cable ducts / slits (optional)

» Pattress box (optional, dependent on the selected components and manner of installation)

4 Installation

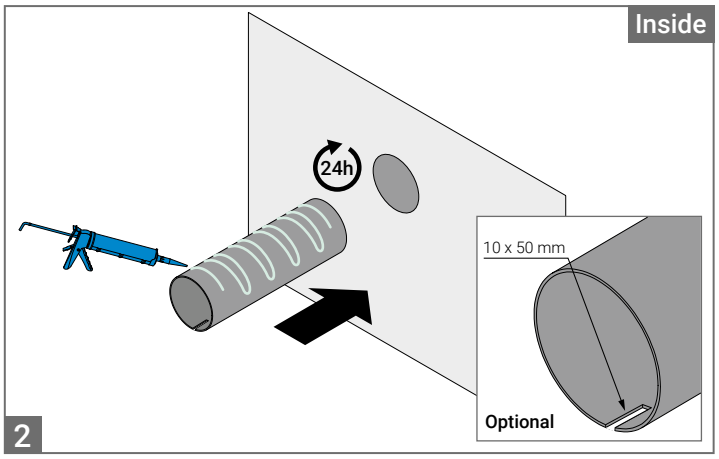
Please read the instructions carefully before beginning the installation.

4.1 Core-drilled hole



Core-drill a hole (Ø 162 mm) in the outside wall or use a pre-fabricated installation block. The hole must have a gradient of 1-3° towards the outside

4.2 Installation cylinder



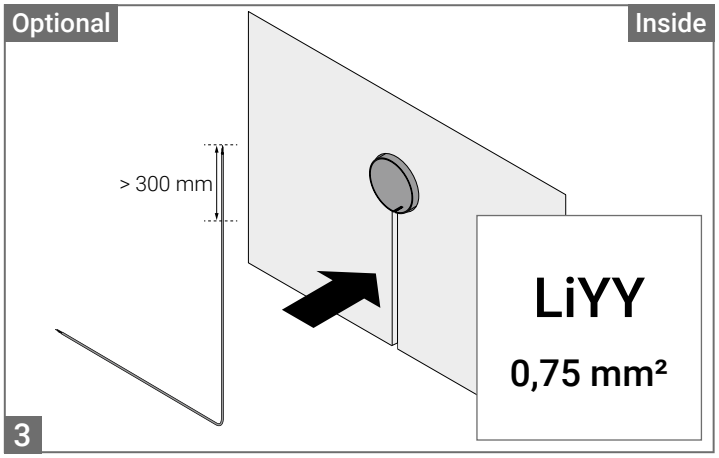
Measure the wall thickness, taking account of any future plastering. Please also pay attention to the installation instructions for the selected outside vent cover / special solution. Cut the installation cylinder to the required length.

OPTIONAL: CUT A 10 X 50 MM (WIDTH X DEPTH) SLIT INTO THE INSIDE-FACING INSTALLATION CYLINDER IF YOU INTEND TO RETROFIT A DECENTRALISED VENTILATION UNIT.

Apply a suitable mounting adhesive / sealant to the cylinder and insert it in the hole in the wall. Make sure that the adhesive/sealant has sufficient time to dry.

TO PREVENT DIRT ENTERING THE CYLINDER DURING FURTHER CONSTRUCTION WORK, COVER THE ENDS WITH PLASTERING COVERS. ONLY REMOVE THEM ONCE ALL WORK HAS BEEN FINISHED.

4.3 Preparations for decentralised home ventilation (optional)

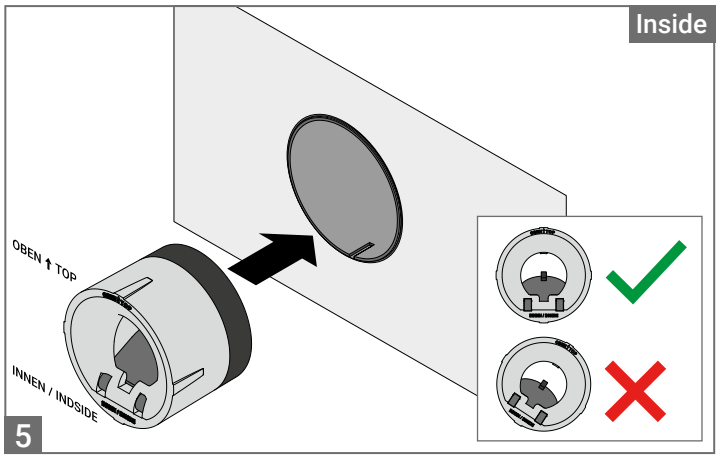


Lay the cables for a decentralised home ventilation system (to be installed at a later date) via slits in the wall / cable ducts up to the installation cylinder. Make sure that at least 300 mm of cable protrudes, enabling the units to be connected up. Further details are to be found in the installation instructions for the corresponding ventilation unit.

4.4 Outside vent cover/special solution

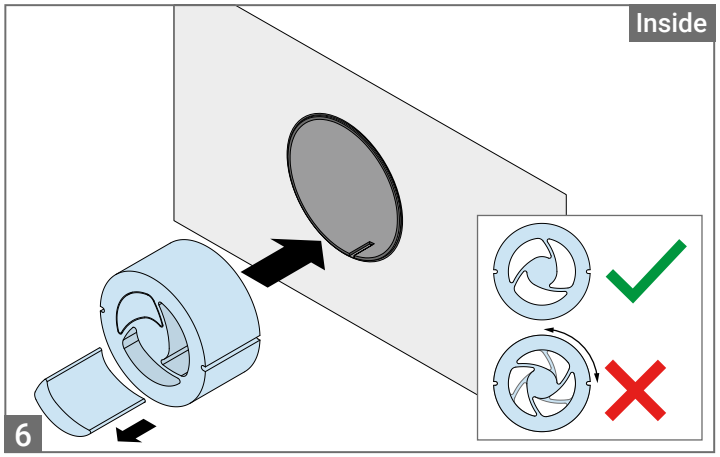
Install the outside vent cover / selected special solution in accordance with the attached installation instructions.

4.5 Wind pressure protection



Insert the wind pressure protection into the installation cylinder. Make sure that the unit with the pre-filter is inserted first. The wording „OBEN ↑ TOP" must point upwards, while the wording "INNEN / INSIDE" must point inwards.

4.6 Sound insulation elements



Open the calculated number of chambers for the sound insulation elements. Carefully take out the pre-cut parts and insert the right number of them into the installation cylinder, making sure that the opened chambers all point in the same direction.

USING A KNIFE, YOU CAN SHORTEN THE SOUND INSULATION ELEMENTS TO MAKE OPTIMAL USE OF THE WALL THICKNESS, THEREBY OPTIMALLY REDUCING OUTSIDE NOISE.

4.7 Inside cover + filter

Place the filter unit in the slots for the filter inside the cover. Insert the cover into the installation cylinder, making sure that the air outlet points upwards.

5 Cleaning and maintenance

To ensure the efficient functioning of your ALD, all components must be regularly checked and maintained.

Component		Interval	What is to be done
Inside cover		Once every three months	» Wipe the surface with a damp cloth.
Filter unit	Dust filter	Once every three months	» Use a vacuum cleaner or warm water to remove minor dirt. » Replace units that are clogged up.
	Pollen filter	Once a month	» Use a vacuum cleaner to remove minor dirt. » Replace units that are clogged up.
Sound insulation element		Once a year	» Use a vacuum cleaner to remove minor dirt. » Replace units that are clogged up.
Wind pressure protection		Once a year	» Use a vacuum cleaner to remove minor dirt. » Check the cap.
Pre-filter		Once a year	» Remove the clamping ring and check the pre-filter » Use a vacuum cleaner or warm water to remove minor dirt. » Replace units that are clogged up or not functioning properly.

6 Disposal

Packaging should be sorted before disposal. Electronic devices or batteries do not belong in normal household refuse. Contact your local authority about how to dispose of electronic devices in compliance with national regulations.

Component	Material	Disposal
Sound insulation element	MF	Collection of recyclable materials
Wind pressure protection	EPS / EPDM / PP	Collection of recyclable materials
Pre-filter	PE	Household refuse
Inside cover	ASA	Collection of recyclable materials
Filter unit	PE; PP	Household refuse