AirEx Floorvent: Smart Air Brick System

Technical Manual & Specification Datasheet



Product Description

The AirEx Floorvent is the world's first smart air brick system designed to transform home energy efficiency and retrofit delivery. It replaces traditional, permanently open air bricks with sensor-controlled units that respond to temperature, humidity, and local weather conditions. Specifically engineered for properties with suspended ground floors, the system reduces heat loss and draughts while actively protecting the health of the sub-floor void by managing moisture levels.

Key Benefits

- **Energy efficiency:** Proven to cut heat loss by an average of 12% based on Ofgem approved field testing in 115 homes.
- **EPC improvement:** Typically delivers an uplift of 1-3 points to a home's EPC score.
- **Resident comfort:** Significantly reduces floor-level draughts and improves overall home health.
- **Smart technology:** Automatically opens to provide purge ventilation when high humidity is detected, preventing damp and timber decay.
- **Low disruption:** A fast, cost-effective retrofit solution needing minimal maintenance.

Technical Specifications

Ventilation area	Mean equivalent area when open (1Pa)	4,042 mm²
	Mean equivalent area when closed (1Pa)	502 mm²
Airbrick size	Replace existing (standard) airbricks	65 x 215 x 110 mm
Vent actuation	Speed of completed change of state (from open <> close)	< 5 secs
	Open state duration	1 - 4 hours
	Trigger limit sensors to monitor vent positions	Fully Open & Closed positions
	Resist wind speeds	BWC 8 +
Sensing parameters	Transmit time stamped void conditions	°C, % RH
	Full humidity range of void sensor	0 -100 % RH
	Void sensor humidity readings accuracy	± 5 % RH
	Full temperature range of void sensor	-20 to +50°C
	Void sensor temperature readings accuracy	± 0.5°C
	Measurement increments for void temperature & humidity	Every 30 mins
Battery power	Battery cells	3x Alkaline (Zn/MnO2) D cells
	Nominal voltage of battery pack	4.5 V
	Nominal battery pack capacity	19 Ah
Communication	Frequency of communication protocol	868 MHz
System Pairing	Brick to Hub Connection	Connected through app
	Hub Internet Connection	WiFi Hub: Connected through app 4G Hub: Connects automatically
Brick Commissioning	Power on	Battery pull tab
	Run self-diagnostics automatically on start-up	< 30 seconds per unit
	Clear indication of brick status	Device Status LEDs & Dashboard
Standards & Specifications	Conformity to free area requirement within relevant specification for air bricks	BS 493:1995+A1:2010
	Standards Tested to for UKCA Marking	EN 62368-1:2020, A11 EN 300 220-2 V3.1.1 EN 301 489-3 V2.1.1
	BBA Certificate of Agrément (24/7174)	Building Regulations England and Wales 2010 Scotland 2004

Compliance & Software Integration

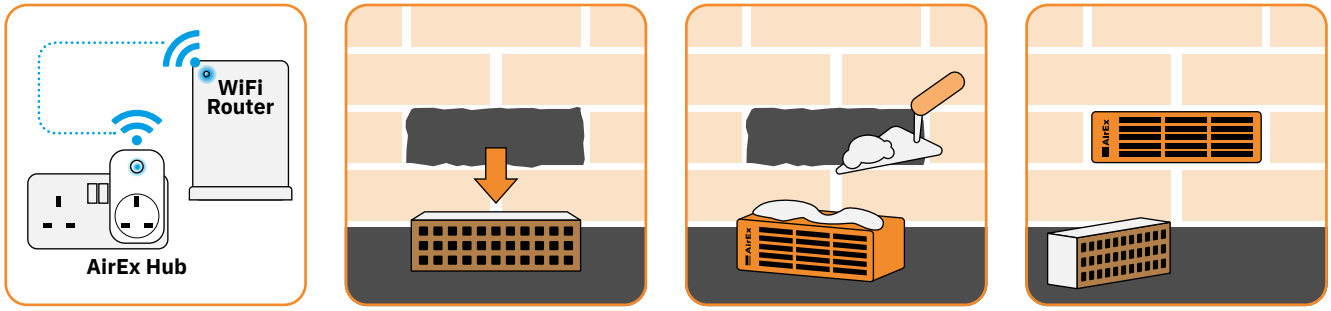
The AirEx Floorvent is integrated into UK energy assessment frameworks, allowing for specification in retrofit projects:

- **SAP/RdSAP:** Included via Appendix Q. It can be added through the “Special Features” section in SAP software.
- **PAS 2035:** Suitable for use in “Whole House Retrofit” projects as an approved energy efficiency measure.
- **PAS 2030:** Classed as a draught proofing measure (Annexe B.2 Measure BFM.2).
- **Certification:** Certified by the British Board of Agrément (BBA) (Certificate 24/7174).

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 24/7174

UK CA

Applications



Installation is easy and quick and can be carried out by in-house teams or subcontractors. Each vent fits a standard 3”x 9” (90mm x 190mm) air brick slot, with conversion kits available for larger openings. Installers have access to full training resources, including guides, videos, and expert support. After the installer completes training, they will have access to the AirEx Installer App which streamlines setup with step-by-step guidance, real-time troubleshooting, and a project dashboard.

AirEx Floorvent replaces traditional air bricks in homes with suspended floors. Suitable air bricks for replacement may be brick, metal or plastic, as long as they allow airflow. Check for obstacles that may block ventilation. Use a thin probe to ensure air can flow freely into the underfloor void. If air cannot pass, the brick should not be replaced. Ideally, all air bricks should be replaced, though the system will still work if most are. If fewer than 50% are replaced, performance may be reduced. Extra care is needed in high radon areas or where underfloor voids ventilate combustion appliances. In these cases, seek expert advice.

System Maintenance

- The hub will reconnect automatically if moved.
- To update WiFi details, hold the reset button for 10 seconds and repeat the setup.
- Keep smart air bricks clear of obstructions like foliage.
- Avoid spraying water directly into the vents when cleaning or watering nearby.
- Smart air bricks run on 3D cell batteries, lasting around 5 years. A replacement alert will be emailed to the registered user.

Performance & Safety

Fire Resistance

The external enclosure is manufactured from Hanwha TotalEnergies polypropylene (PP) compound FH44. This material is a flame-retardant polypropylene designed specifically for electrical and electronic applications.

- **Flammability Rating:** Achieves a UL94 V-0 rating at 0.75–0.8 mm, meaning it self-extinguishes quickly and does not produce flaming drips.
- **Environmental Safety:** Formulated as a non-dioxin flame-retardant material, avoiding environmentally harmful additives.
- **Compliance:** Tested for UKCA Marking and conforms to free area requirements within BS 493:1995+A1:2010.

Operational Durability

The system is designed to resist wind speeds of BWC 8+ and the electrical components are protected by an external grill and a sealed battery compartment, ensuring reliable operation within an underfloor environment.

Sustainability & Lifecycle

Recyclability

AirEx is committed to responsible product stewardship and environmental compliance. Our products and supply chain adhere to applicable regulatory requirements governing electrical equipment and batteries. At the end of life, the electronic components and D-cell batteries are classified as Waste Electrical and Electronic Equipment (WEEE) and must be disposed of in accordance with local WEEE and battery disposal regulations. The product enclosure is manufactured from polypropylene (PP), a widely recyclable thermoplastic.

ISO & Quality Standards

The manufacturer responsible for production operates under an ISO 9001 certified quality management system. This ensures that the manufacturing process follows established quality control procedures and continuous improvement practices.

Handling and Storage Guidance

To maintain product integrity prior to installation, adhere to the following guidelines:

- The product should be stored in a clean, dry, and covered environment such as a warehouse or sheltered storage area.
- Storage areas should be protected from excessive humidity, direct exposure to rain or standing water, and from vermin or pests that could damage packaging or product components.
- A typical cold warehouse environment is acceptable, provided the products remain protected from condensation and prolonged exposure to moisture.
- Units should be stored in their original packaging until installation to prevent damage or contamination.
- Products may be stacked for storage; however, stacked units should not exceed 1.8 metres in height to avoid deformation of packaging or damage to the devices.
- Care should be taken during handling to avoid dropping, crushing, or applying excessive force to the units.
- Batteries should remain installed and unused until deployment, and products should be kept away from direct heat sources, chemicals, or corrosive environments.

Technical Support

For project specification, software integration support, or further technical data, please reach out to our team:

- **Email:** support@airex.tech
- **Website:** www.airex.tech/support