

## Specification for Silavent HRX-aQ horizontal ceiling units

### Operation

Polypipe's Silavent HRX-aQ supply and extract with heat recovery ventilation unit (\*MVHR or ERV) shall be positioned and ducted as indicated on the system drawings and as detailed in the Installation and Operation Instructions. It shall be suitable for horizontal ceiling installation and offer the ability to fit directly to a slab.

The unit shall supply filtered, fresh air to each of the habitable rooms and waste air shall be extracted from each of the wet rooms i.e. bathroom, en-suite, kitchen and utility room. The supply air shall be pre-warmed, using the energy from the extract air using an integrated counter-flow heat exchanger. The extracted air shall also be filtered before it reaches the heat exchanger. Energy Recovery Ventilation (ERV) units will include a 'Total Heat' recovery exchanger to recover both sensible and latent heat; to provide optimal indoor air conditions.

The HRX-aQ unit shall offer independent fan speed control; that is adjustable to three levels; Low, Boost and Maximum (purge). These speeds will be controllable through a user interface HRX-aQ Bluebrain control. The boost facility can also be triggered from a lighting circuit, if required.

The unit shall have the facility to commission the supply and extract fans independently on low (continuous background ventilation) and boost speed, through the adjustment buttons.

### Specification of unit

The unit shall be the Silavent HRX-aQ as manufactured by Polypipe Ventilation and shall be listed on the Product Characteristics Database (SAP Appendix Q).

The HRX-aQ unit shall be manufactured from sound absorbing Expanded Polypropylene (EPP), therefore providing thermal and acoustic characteristics. It shall include a counter flow heat exchanger for a heat exchange efficiency, at typical installation, of up to 88%.

For Energy Recovery Ventilation, the unit shall include a 'Total Heat' recovery exchanger, recovering both sensible and latent heat, thereby helping to provide all-year-round ambient indoor air temperatures.

To avoid ceiling void restrictions, the unit shall be from 199mm deep, (520mm high and 819mm wide excluding connections) and up to a maximum of 239mm in depth. It shall weigh from between 7.9kg, up to and 8.4kg to enable easy installation.

The unit shall have a high efficiency, backward curved EC fans for low energy consumption and provide a Specific Fan Power of down to 0.66W(l/s), at typical installation.

The heat exchanger shall be protected by G3 grade filters on the fresh air inlet intake and system extract. The heat exchanger and filters shall be accessible via the underside of the unit, enabling quick and easy maintenance. To avoid on-site damage, the filters shall be supplied in protection bags.

The unit shall connect directly to Polypipe's Domus 204x60mm rectangular ducting and include offset 204x60mm duct connections, to allow ducts to easily cross over in tight spaces, whilst also enabling simple to design, in-and-out duct runs.

Background ventilation noise shall be minimised down to 24dB(A). The unit's fans should be quiet enough so as not to discourage occupant use, with very low breakout, open inlet and open outlet sound levels as detailed by Polypipe Ventilation and in accordance with Building Regulations.

The unit can be fitted with a 100% automatic summer bypass. Outside air supplied through the bypass shall be filtered, so the air quality is maintained. The bypass shall open automatically when either the indoor air reaches a pre-set temperature of between +15°C and 25°C or through time clock control which is pre-set using the Bluebrain control. A manual override option is also available.

The MVHR or ERV system shall be safeguarded against damage from very cold weather through an optional frost protection function that is controlled via the Bluebrain control. The frost protection shall automatically trigger when a pre-set level is reached. This can be between -15°C and +5°C.

The unit shall be supplied with a connection to a Domus 297 condensate drain. A condensate drain for ERV units however, will not be required.

### **Specification of control** (user interface)

The unit shall include an HRX-aQ Bluebrain control as its user interface, which if supplied with an ERV model, may also be wireless for flexible mounting. For ease of use, the control shall include an LCD display and have the following functions:

- Independent control of low (background), boost and maximum supply and extract flow rates
- Independent control of fan speed for accurate and straightforward commissioning
- Lockable commissioning mode
- Power-on, fault and status indicators
- Volt free BMS functionality
- Programmable time and date functions
- Programmable filter check
- Programmable 100% summer bypass
- Optional frost protection at pre-set levels
- Programmable humidity level boost switching
- Optional 3-minute delay on boost switching
- Optional 5 to 30-minute delay off boost switching
- Run-time monitor
- Temperature controlled switching for optional duct heater¥

\*MVHR - Mechanical Ventilation with Heat Recovery. ERV – Energy Recovery Ventilation.

¥ Not supplied by Polypipe.