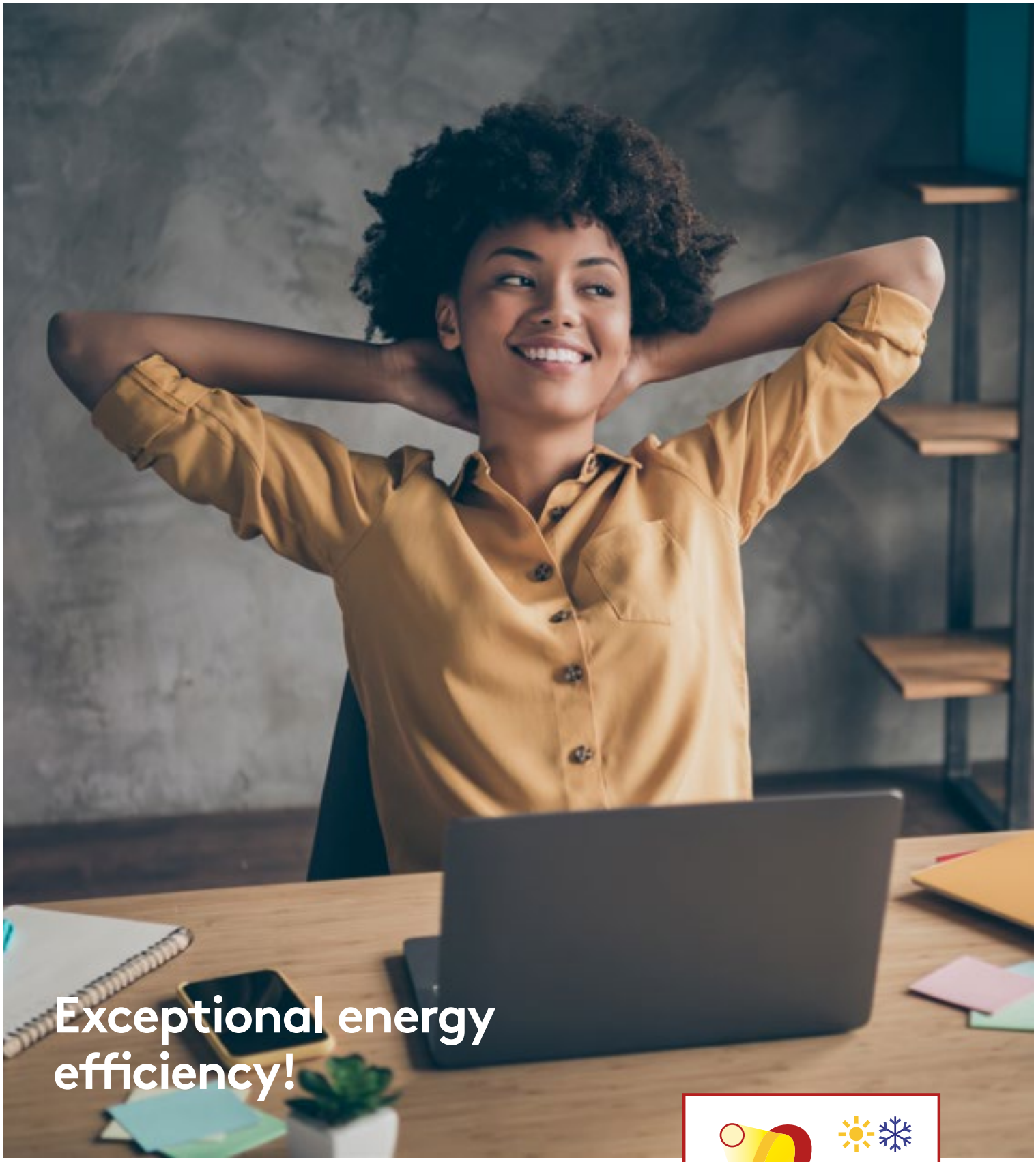


GOLD RX

Meets the strict demands for Passive houses!

CERTIFIED COMPONENT
Passive House Institute

Swegon

Energy efficient GOLD RX certified for Passive Houses

GOLD RX has unique energy efficient fans, unique energy efficient heat recovery and unique integrated energy efficient control functions. This is also reflected in GOLD RX being the first air handling unit for commercial premises certified as a component for Passive houses.

A passive house is characterised as a building with extremely low energy consumption and a good indoor climate. A passive house is a definition for a building where you reduce energy consumption as much as possible, for example with extra thick insulation, an airtight and compact building structure, well insulated windows and heat recovery from the ventilation air.

In order to be a certified component special demands are made on the performance of the air handling unit including: power consumption, heat recovery, airtightness, sound level and flow control.

GOLD RX meets the requirement of an airflow up to 2.8 m^3/s (10.000 m^3/h). Up to this flow, GOLD RX produces an SFP_v value (Specific Fan Power, ventilation) which is lower than 1.6. The normal requirement for buildings that are not Passive houses is usually 2.0.

The energy efficiency of GOLD RX is further improved through its rotary heat exchanger with an efficiency level of 80-85%, which is significantly more than the Passive House requirement of 75%. This means the heating load of the building will be lower. Numerous economic control functions also contribute to low operating costs, including the total control over operation of the unit via a variety of communication options.


CERTIFICATE

Certified Passive House Component

Valid until 31st December 2022

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

Category: Air handling unit with heat recovery
Manufacturer: Swegon Operations AB, Sweden
Product name: Ventilation unit series GOLD F RX Sorption STE
Specification: Airflow rate > 600 m³/h
Heat exchanger: Regenerative

This certificate was awarded based on the product meeting the following main criteria

Heat recovery rate	η_{HR}	≥	75 %
Specific electric power	$P_{el,spec}$	≤	0.45 Wh/m³
Leakage		<	3 %
Performance number		≥	10
Comfort	Supply air temperature ≥ 16.5 °C at outdoor air temperature of -10 °C [2]		

Airflow range: 500-10000 m³/h at an external pressure of 238-365 Pa [1] Requirements non-residential buildings
Heat recovery rate: η_{HR} ≥ 80 %
Specific electric power: $P_{el,spec}$ ≤ 0.45 Wh/m³
Humidity recovery: η_x ≥ 90 %
Performance number: > 9 [3]

[1] The pressure drop of filters is covered in the listed external pressure. Additional components (e.g. heating coil) decrease the available external pressure accordingly.
[2] Installation of an additional post heater is necessary.
[3] The recommended value of 10.0 was not reached for all device sizes.

www.passivehouse.com

CERTIFIED COMPONENT

Fans of international calibre!

Swegon's fans are specially developed for Swegon's air handling units. EC type fan motors, optimised rotor controller and advanced fan design provide GOLD RX with extremely high energy efficiency.

Every improvement in fan efficiency can be directly translated into lower power consumption – and lower operating costs!

Find certified GOLD RX units here

Nursery school Trädgårdsstaden, Skövde, Sweden

Trädgårdsstaden in Skövde is Sweden's second nursery school certified as a Passive House. Certification is performed by the Passive House Institute (PHI) and follows the directives set out in the Passive House Planning Package (PHPP).

The building is on two levels and is very compact. The design is made up of a steel structure and a light, timber batten system with cellulose insulation. The nursery can accommodate 110 children and was completed in May 2012.

Heating is by means of hydronic radiators from a district heating station. Other more energy efficient methods could have been chosen, but a political decision on district heating was made as it was also to be used in the nearby residential area.

Ventilation is provided for by two GOLD RX units, Swegon's air handling unit with rotary heat exchanger. One unit solely serves the kitchen, where extract air is recycled to the water circuit used in the preheating coils in both GOLD units.

The second GOLD unit serves the remainder of the premises.

Outdoor air to both units first passes four drill holes in the ground, where it is pre-heated in winter and cooled in summer.

Initially the building was ventilated around the clock and at full air flow to remove emissions from the new materials and new furniture. Now the ventilation is demand controlled using timers and sensors for occupancy, temperature and air quality. Monitoring shows that the estimated energy values also reflect reality.

Swegon's GOLD units have also been installed in the world's first Passive House tennis hall in Växjö and in Sweden's first Passive House school in Knivsta.

GOLD RX

Nursery school Trädgårdsstaden in Skövde is a certified Passive House with two GOLD RX units. Photo: IG Passive House

Technician Björn Adler inspecting a GOLD air handling unit. Photo: Swegon

Nursery School Trädgårdsstaden

Year of Construction 2012

Developer: Skövde municipality

Architect: Glantz Arkitektstudio/VBK, Gothenburg

Real Estate Planning: Bengt Dahlgren, Skövde.

Energy Coordinator: IG Passivhus, Växjö.

Air Handling Units: GOLD RX from Swegon

See www.swegon.com for more reference projects

Find certified GOLD RX units here

Entopia Building, Cambridge, England

The former telephone exchange building in Cambridge, dating from the 1930s, has set a new international standard for office development with ultra-low carbon dioxide emissions.

Entopia Building is the head office of the Cambridge Institute for Sustainable Leadership (CISL). The building is designed to meet the Passive house building standard for retrofits (EnerPHit) as well as the WELL Gold and BREEAM Outstanding standards. In this way, Entopia Building aims to be a global role model for sustainable office renovations.

The renovation of Entopia Building has achieved startlingly expected results: 80% lower carbon dioxide emissions throughout its service life compared to a standard renovation project, 75% lower heating requirements than average office buildings and five times greater airtightness than is actually required.

Entopia Building has been fitted with Swegon GOLD RX/HC air handling units with built-in reversible heat pump and SuperWISE II control. This combination creates a comprehensive ventilation systems for demand-controlled indoor climate (DCV).

GOLD RX/HC

See www.swegon.com for more reference projects

Find certified GOLD RX units here

Samuel Paty College, Valenton, France

The Val-de-Marne region has committed to reducing the energy consumption for its building stock by 38%, and emissions of greenhouse gases by 50%, by 2050.

In the case of new construction, the region has decided to build with a lower impact on the environment.

The first passive house installation in the region is Samuel Paty College in Valenton, which was inaugurated at the start of December 2021.

The building's thermal casing has been designed to be extremely energy efficient. By only heating up the building for a few hours on Monday morning, the building will be able to save and recover energy throughout the week.

The building is ventilated by the centralised ventilation system, made up of three GOLD RX air handling units that improve the quality of the indoor air.

GOLD RX

See www.swegon.com for more reference projects

AHU Design – optimised unit selection software

High-quality hardware and an intelligent control system are the backbone of a superlative ventilation system, but equally important is to identify the ideal product variant for the project at hand.

The AHU Design product selection software simplifies the process of sizing and configuring your air handling unit by allowing you to perform advanced energy calculations to ensure that your solution is optimised for the long term too.

Swegon's air handling unit selection software AHU Design has a sizing function for Passive houses. This function must always be used to ensure that the requirements are satisfied. The selected air handling unit satisfies the requirements when a Passive house logo appears on the printout.

Facts about GOLD RX

GOLD RX is the name of a series of complete air handling units for comfort ventilation in several sizes for airflows up to approximately 14 m^3/s (50 400 m^3/h).

The unit has energy efficient fans that can cope with the increased demands on energy savings. The GOLD has built-in IQlogic control equipment with a large number of functions, including communication.

A complete range of accessories is available, such as dampers, sound attenuators, air heaters, air coolers, recirculation sections, chillers and heat pumps.

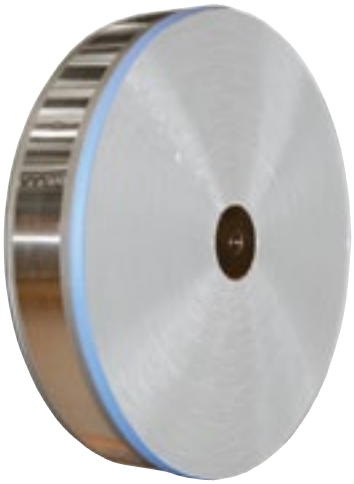
GOLD is also available with crossflow plate heat exchanger and coil heat exchanger. The GOLD series are certified by Eurovent, No.: AHU-06-06-319.

RECOsorptic sorption rotor

GOLD RX is available with a number of different types of rotors, including our new sorption rotor that offers high-performance moisture recovery.

One of the advantages of the sorption rotor is the extremely high cooling energy recovery, which entails a significantly reduced need for supplied cooling capacity and consequently lower costs for the cooling system's installation and operation.

In addition, the sorption rotor recovers moisture in the winter, which entails an improved indoor climate and the fact that the need for defrosting has been more or less eliminated in most climates.



Feel good **inside**

Swegon