



REMAK

AIR-HANDLING UNITS FOR CLEAN SPACES AND MEDICAL FACILITIES

UNIQUE, CUSTOMER CONFIGURABLE AIR-HANDLING UNITS DESIGNED FOR CLEAN SPACES AND MEDICAL FACILITIES



A+



OUR HYGIENIC UNITS:

- Demonstrably reduce the amount of microorganisms and pollutants in a ventilated area
- Comfortably regulate temperature and humidity
- Allow safe and repeatable remediation in the shortest possible time
- Minimize technological outage due to maintenance or repair

Due to this functioning device, the ultimate consequence occurs higher patient satisfaction, reduce the number of postoperative complications, increase Staff performance and generally increase the capacity of the medical facility.



DURING THE DESIGN AND DEVELOPMENT OF UNITS IN HYGIENIC DESIGN WE ARE BASED ON THE FOLLOWING STANDARDS:

- EN 13053 (Ventilation for buildings – Air Handling Units – Rating and performance for units, components and sections)
- DIN 1946-4 (Ventilation and air conditioning)
- EN 1886 (Ventilation for buildings – Air Handling Units – Mechanical performance)
- VDI 3803 (Raumluftechnik, Geräteanforderungen)
- VDI 6022 (Raumluftechnik, Raumlufqualität)
- AHU Guideline 01 (General requirements for Air Handling Units)
- DIN EN 1751 (Ventilation for buildings – Air terminal devices – Aerodynamic testing of damper and valves)
- EN 13779 (Ventilation for non-residential buildings – Performance requirements for ventilation and room-conditioning systems)

FOR THE INNER SURFACE OF THE UNITS WE CAN APPLY A TOP SPECIAL VARNISH WITH ANTIBACTERIAL AND ANTIVIRAL PROPERTIES:

- Tested and proven by accredited laboratory in accordance with ISO 22196: 2011 and ISO 21702: 2019 requirements
- Reduces bacterial and viral burden to reduce the risk of infection
- Lowering bacterial load by 99 % already after 2 hours of operation
- Reducing viral load by 95 % (for SARS-COV-2 by 99 %) already after 24 hours
- Its special features are activated immediately after painting and manifest quickly in a very short time
- Resistant to regular cleaning operations that can be performed by common hygiene
- Durable throughout the life cycle of the air-handling unit
- Application is carried out in the own paint shop with automated operation using nanotechnology

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BASIC INFORMATION AND RECOMMENDATIONS

- The location of the units in the so-called outdoor environment significantly complicates the preparation of the remediation and worsens the resulting cleanliness of the device.
Noise and condensation in extreme frosts are other reasons why it is necessary to avoid outdoor installations as much as possible. In case of units implementation. In the outdoor version, it is necessary to equip the device with free ventricles for placing heaters, steam developers, control nodes and fit the heating cables of odor closures.
- Install only plate (not regenerative) heat recovery exchangers due to the supply of supply and waste air.
- For hygienic reasons and reducing maintenance requirements, it is advisable to place fans to minimize air intake by leaks in the vacuum part of the unit.
- It is advisable to fit the fans in front of the wet parts of the air conditioning unit so that the siphon for the condensate drain is located on the „side of the overpressure“ of the unit.
- In front of and behind exchangers to install service chambers.
- The units closing flaps must allow the unit to close in the event of a power failure (eg a springcap with a spring).
- At temperatures above 0 °C and relative humidity above 80 %, problems with contamination of interior spaces may cause the unit by microbial growth. Moisture greater than 90 % in air filters and shock absorbers causes problems, even if the moisture increases only for a short time. If high humidity has been high at this temperature level, appropriate measures must be taken against the growth of microbes, especially on air filter and shock absorbers. For example, the preheating of the input air in front of the filter by approximately 3 for the preheat.
- Mixing only propose where the air supply air is not contaminated (odds, gases, etc.). Intensive circulation is used for premises with biological agents (BSL - Biological Safety level 1 to 4) and premises of eg burns centers and burns ICU.
- The mixing ratio must always be considered that the resulting air mixture is at the flush temperatures and at the same time the relative humidity does not exceed 80 %. In the case of other states of the resulting air mixture, mixing cannot be used. There is a risk of condensation of air humidity, or the formation of icing.
- Air flow control according to pressure sensors in a system.
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- All components must be protected from dirt and damage during assembly.
- The additional and sealing materials used during assembly must correspond to the instructions and requirements of the air -conditioning equipment manufacturer.
- After assembly, the entire device must be checked and cleaned.
- The upper limit of non-pathological bacteria at the wool must not exceed 10,000 CFU/ml. This value must not be exceeded in the entire internal space of the device.
- For humidification chambers, coolers and bathtubs for condensate when measuring a concentration of more than 1,000 CFU/m³ (for Legionel 100 CFU/100 ml), the devices of the humidification chambers, coolers and bathtubs for condensate must be checked and comprehensively cleaned.
- The maximum level of dust accumulation in the chambers of the equipment and in pipes is 0.3 g/m² for supply and circulatory air and 0.9 g/m² for waste air.

THE LIST IS NOT COMPLETE, PLEASE CONTACT OUR SALES REPRESENTATIVE FOR FURTHER INFORMATION AND COOPERATION WITH THE DESIGN OF UNITS.



SELECTED REFERENCES FOR CLEAN SPACES AND MEDICAL FACILITIES



Hospital Třebíč
Dozens of REMAK units provide quality internal environment for various hospital spaces such as ICU, ARO, aseptic and super septic operating rooms.



Hospital Teplice
In the pavilion of operating theaters and the new pavilion with several years, our units in the hygienic design have been working reliably, and we also supplied the CHÚC ventilation equipment.



Regional hospital Náchod
40 pcs of Remak units in hygienic design are part of two new pavilions K and J are 4, ventilating, among others, the department of the maternity hospital, the children's department, the operating rooms, the ARO, the ICU, the imaging methods and the inpatient departments.



IKEM Praha
14 564 m² in the new G1 and G2 pavilions are designed for transplant and cardiovascular medicine to patients from all over the Czech Republic. Ensuring a healthy environment in these spaces is a task for dozens of our facilities.



Rehabilitation Hospital Beroun
Our units provide a comfortable environment in the extension of the surgical department. Among other things, the investor placed an emphasis on energy consumption, so EC fans are used. Some units achieve the highest class A+ energy efficiency.



Municipal Hospital Ostrava-Fifejdy
As part of the modernization of the key pavilion E2 Ostrava Municipal Hospital, the Remak for air conditioning is used by the premises of surgery, internal, ARO, ICU, cardio workplaces and Emergency.



Veropharm
Our units ensure the right microclimate of the clean premises of this pharmaceutical society. For the most demanding spaces (eg cytotostatic production) are used units with adsorption silicagel rotors.



Hospital Šternberk
The heart of the unique internal pavilion, which corresponds to the standard of the passive building, is the Remak device in the hygienic design, with the efficiency of up to 90 %.

