systems and mucous membranes are more sensitive to infections at very low RH of 10-20 %[xxxviii,xxxix], and for this reason some humidification in winter is sometimes suggested (to levels of 20-30%), although the use of humidifiers has been associated with higher amounts of total and short-term sick leave[xl].

In buildings equipped with centralised humidification, there is no need to change humidification systems' setpoints (usually 25 or 30%[xli]). Usually, any adjustment of setpoints for heating or cooling systems is not needed, and systems can be operated normally, as there is no direct implication for the risk of transmission of SARS-CoV-2.

4.4 Safe use of heat recovery sections

Virus particle transmission via heat recovery devices is not an issue when an HVAC system is equipped with a twin coil unit or another heat recovery device that guarantees 100% air separation between the return and supply side[xlii].

Some heat recovery devices may carry over particle and gas phase pollutants from the exhaust air side to the supply air side via leaks. Rotary air to air heat exchangers (i.e., rotors, called also wheels) may be liable to significant leakage in the case of poor design and maintenance. For properly operating rotary heat exchangers, fitted with purging sectors and correctly set up, leakage rates are very low, being in the range of 0-2% that is in practice insignificant. For existing systems, the leakage should be below 5% and should be compensated with increased outdoor air ventilation, according to EN 16798-3:2017. However, many rotary heat exchangers may not be properly installed. The most common fault is that the fans have been mounted in such a way as to create a higher pressure on the exhaust air side. This will cause leakage from the extract air into the supply air. The degree of uncontrolled transfer of polluted extract air can in these cases be of the order of 20%[xliii], which is not acceptable.

It has been shown that rotary heat exchangers which are properly constructed, installed, and maintained have almost zero transfer of particle-bound pollutants (including air-borne bacteria, viruses, and fungi), and the transfer is limited to gaseous pollutants such as tobacco smoke and other smells[xliv]. There is no evidence that virus-laden particles larger than about 0.2 μm would be transferred across the wheel. Because the major part of the leakage is caused by the pressure differences between supply and exhaust air, stopping the rotor will have only a minor impact of the leakage. Therefore, its not necessary to switch the rotor off. The normal operation of rotors makes it also easier to keep ventilation rates higher. It is known that the carry-over leakage is highest at low airflow, so higher ventilation rates should be used as recommended in Section 4.1.

If critical leaks are detected in the heat recovery sections, pressure adjustment or bypassing (some systems may be equipped with bypass) can be an option to avoid a situation where higher pressure on the extract side will cause air leakage to the supply side. Pressure differences can be corrected by dampers or by other reasonable arrangements. In conclusion, we recommend inspecting the heat recovery equipment, including measuring the pressure difference and estimating leakage based on temperature measurement, see Appendix 2.

4.5 No use of central recirculation

Viral material in extract (return) air ducts may re-enter a building when centralised air handling units are equipped with recirculation sectors. The general recommendation is to avoid central recirculation during SARS-CoV-2 episodes: close the recirculation dampers either using the Building Management System or manually. This is especially important in buildings that are used by susceptible end-users[4] (e.g. nursing homes).

[4] In hospitals the use of recirculation is strictly forbidden in many countries.

2020年12月2日　衆議院厚生労働委員会　提出資料⑤　日本共産党　宮本徹

出典：REHVA COVID-19 guidance document., 17 November 2020., Belgium: Federation of European Heating, Ventilation and Air Conditioning Associations. 黄色マーカーは宮本徹事務所加筆。