

**INTERPRETATION IC 62.1-2010-8 OF
ANSI/ASHRAE STANDARD 62.1-2010
VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY**

Approved: January 24, 2016

Request from: John Fischer, SEMCO LLC, 1800 East Pointe Drive, Columbia, MO 65202.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 62.1-2010, Section 5.16.3, regarding recirculation limitations with energy recovery devices.

Background: The exception to Section 5.16.3.2.5 of ASHRAE Standard 62.1 states that “*When using any energy recovery device, recirculation from leakage, carryover, or transfer from the exhaust side of the energy recovery device is permitted. Recirculated Class 2 air shall not exceed 10% of the outdoor air intake flow*”.

There appears to be frequent confusion regarding this recirculation exception in that many manufacturers and designers treat this “recirculated” air as “outdoor air”, and are not increasing the net supply outdoor air to the building despite the omission of a purge angle in the recovery wheel, leakage in the wrong direction across the seals or leakage across the membrane of a plate heat exchanger.

As background, there is a test procedure in place, ASHRAE Standard 84, Method of Testing Air-to-Air Heat/Energy Exchangers, that establishes this recirculated air percentage (exhaust air transfer ratio or EATR). There is also an AHRI Guideline V which clearly calls for the subtraction of this recirculated air (EATR impact) from the gross supply of outdoor air, to deliver the ASHRAE Standard 62.1 required outdoor air volume defined as “net supply airflow”.

Interpretation: My interpretation of Section 5.16.3 in ASHRAE Standard 62.1-2010 (and the similar section in the 2013 version) is that up to a maximum of 10% of the outdoor airflow volume delivered to a building can be recirculated or transferred air from a Class 2 exhaust airstream when energy recovery devices are used. However, since this “recirculated” air portion is not outdoor air, it cannot be used to reduce the quantity of outdoor air required by the ASHRAE 62.1 standard. As a result, the amount of ~~gross outdoor air supplied~~ **airflow leaving the Heat Exchanger** must be ~~increased~~ to reflect the recirculated air.

So, as example, if a recovery wheel that is designed to bring in 5,000 cfm of outdoor air is installed without a purge section and, as a result, 500 cfm of Class 2 exhaust air transfer occurs, this device can be used but the ~~gross outdoor airflow delivered to the space~~ **leaving the Heat Exchanger** must be ~~increased to~~ 5,500 cfm to be in compliance with the 5,000 cfm of “outdoor air requirement” plus the 500 cfm of recirculated Class 2 air.

This rational logically applies to Class 1 and Class 3 air as well.

Question: Is this interpretation correct?

Answer: Yes.

Comments: The answer is based on the changes shown above.