

# CECD1-25-22

IECC: C403.7.4.1

Proponents: John Bade, representing IECC CE HVACR & water heating subcommittee

## 2024 International Energy Conservation Code [CE Project]

Revise as follows:

**C403.7.4.1 Nontransient dwelling units.** Nontransient dwelling units shall be provided with outdoor air energy recovery ventilation systems complying with not less than one of the following:

1. Having an enthalpy recovery ratio of not less than 50 percent at cooling design condition and not less than 60 percent at heating design condition.
2. Having a sensible recovery efficiency (SRE) that is not less than 65 percent at 32 °F (0 °C) and, in climate zones 0A, 1A, 2A, and 3A, having a net moisture transfer (NMT) that is not less than 40 percent at 95 °F (35 °C). SRE and NMT shall be determined from a listed value or from interpolation of listed values, at an airflow not less than the design airflow, based on testing in accordance with CAN/CSA C439.

### Exceptions:

1. Nontransient dwelling units in Climate Zone 3C.
2. Nontransient dwelling units with not more than 500 square feet (46 m<sup>2</sup>) of *conditioned floor area* in Climate Zones 0, 1, 2, 3, 4C and 5C ~~and either adjoin an open-ended corridor or do not adjoin a corridor.~~
3. ~~Nontransient dwelling units with not more than 500 square feet (46 m<sup>2</sup>) of conditioned floor area that are located in Climate Zones 1A, 2B, 3B, and 3C.~~
- ~~4.~~ 3. *Enthalpy recovery ratio* requirements at heating design condition in Climate Zones 0, 1 and 2.
- ~~5.~~ 4. *Enthalpy recovery ratio* requirements at cooling design condition in Climate Zones 4, 5, 6, 7 and 8.

**Reason:** Large, central H/ERVs serving multiple dwelling units are typically certified for performance based on testing conducted in accordance with AHRI 1060, "Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment." The "enthalpy recovery ratio" of AHRI 1060 encompasses both sensible and latent performance and this proposal retains it as the first of two optional compliance paths for this section. Smaller (and often in-suite) H/ERVs typically serving individual dwelling units are generally certified for performance (e.g., SRE for sensible energy transfer, NMT for latent energy transfer, etc.) based on testing conducted in accordance with test standard CAN/CSA C439. In practice, the test results are listed in a publicly accessible directory by a certification body (e.g., The Home Ventilating Institute). This proposal adds a second compliance option, C403.7.4.1.2, to recognize H/ERVs that are tested in accordance with CAN/CSA C439, that are expected to achieve comparable in-situ performance to units tested in accordance with AHRI 1060. The target SRE aligns with that currently required in IECC-R Section N1103.6.1 (R403.6.1) for certain dwelling units. The target net moisture transfer would only be required for hot/humid climate zones to support IAQ, where moderation of outdoor moisture levels is especially important for managing indoor humidity. The value of 40% is achievable by most models while providing a significant reduction in latent loads associated with introducing outdoor air.

**Cost Impact:** The code change proposal will decrease the cost of construction.

The code change proposal could potentially decrease the cost of construction by facilitating the permitting of smaller, in-suite H/ERVs. This will provide builders and specifiers with more options for specifying compliant systems.