# ANSI/RESNET/ICC 301-2022 Addendum A-2022, Renewable Energy Certificates and Infiltration Volume

### *Revise current and add new definitions as follows:*

***Infiltration Volume***[20]

– The sum of the ~~Conditioned Space Volume~~following spaces of the subject Dwelling Unit~~,~~:

- The Conditioned Space Volume, excluding any Attics, basements, crawlspaces, and adjacent mechanical closets.
- ~~plus t~~The Conditioned Space Volume and Unconditioned Space Volume of the following adjacent spaces if included[21]
- during the airtightness measurement of the enclosure: Attics, crawlspaces and the full depth of their floor assemblies above, basements and the full depth of their floor assemblies above, and adjacent mechanical closets and the full width of their wall assemblies between them and the subject Dwelling Unit.

***On-Site Power Production (OPP)*** – Electric power produced on the site of a Rated Home. OPP shall be the net electrical power production such that it equals the gross electrical power production minus any purchased fossil fuel energy used to produce the on-site power, converted to equivalent electric energy use at a 40-percent conversion efficiency in accordance with Equation 4.1-3 of this Standard.

***Renewable Energy Certificate (REC):*** a market-based instrument that represents and conveys the environmental, social, and other non-power attributes of one megawatt-hour of renewable electricity generation.

***Renewable Energy System*** – Means of producing thermal energy or producing electric power that rely on naturally occurring, on-site resources that are not depleted as a result of their use. Renewable Energy Systems shall include, but are not limited to, solar energy systems, wind energy systems and biomass energy systems.

### *Add CSV to list of acronyms:*

**3.3 Acronyms**

***CFA*** – Conditioned Floor Area
***CSV*** – Conditioned Space Volume

[20](Informative Note) Informative Annex A of Standard ANSI/RESNET/ICC 380 contains a table that summarizes parts of a Dwelling Unit that are included in Infiltration Volume.
[21] (Informative Note) Sections **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, and **Error! Reference source not found.** of Standard ANSI/RESNET/ICC 380 define whether these adjacent spaces are to be included in Infiltration Volume.

***CFIS*** – Central Fan Integrated Supply

***Modify the Thermal Distribution Systems row of Table 4.2.2 (1) as follows:***

**Table 4.2.2(1) Specifications for the Energy Rating Reference and Rated Homes**

| | | |
|---|---|---|
| Thermal distribution systems | Thermal Distribution System Efficiency (DSE) of 0.80 shall be applied to both the heating and cooling system efficiencies. | Forced air distribution systems duct leakage to outside tests[w,x, y, z , yy] shall be conducted and documented by an Approved Tester in accordance with requirements of Standard ANSI/RESNET/ICC 380 with the air handler installed, and the energy impacts calculated with the ducts located and insulated as in the Rated Home.<br><br>Forced air distribution systems duct area shall be the same as the Rated Home[aa].<br><br>For ductless distribution systems or distribution systems in CSV with the supply-side having a total length that does not exceed 10 ft., inclusive of both ductwork and building cavities used for distribution: DSE=1.00<br><br>For hydronic distribution systems: DSE=1.00 |

### *Modify table note h. for Table 4.2.2(1) as follows:*

h. Either hourly calculations using the following equation[3] or calculations yielding equivalent results shall be used to determine the combined air exchange rate resulting from Infiltration in combination with Dwelling Unit Mechanical Ventilation Systems.

~~$Q_i = Q_{fan,i} + \Phi Q_{inf,i}$~~

$Q_i = Q_{fan,max,i} + \Phi\ (Q_{inf,i})^2 / (Q_{inf,I} + Q_{imb,i})$

where:

~~$\Phi$ = 1 for Balanced Ventilation Systems and otherwise~~

~~$\Phi = Q_{inf,i} / ( Q_{inf,i} + Q_{fan,i} )$~~

$Q_i$ = *combined* air exchange rate for the time step 'i', cfm

$Q_{fan,max,i}$ = *MAX(Qfan_sup, Qfan_exh)* for the time step 'i', cfm

$Q_{fan,sup,i}$ = supply fan air flow rate for time step 'i', cfm

$Q_{fan,exh,i}$ = exhaust fan air flow rate for time step 'i', cfm

$Q_{inf,i}$ = Infiltration airflow rate for the time step 'i', cfm calculated using Shelter Class 4

$Q_{imb,i}$ = *ABS(Qfan_sup - Qfan_exh)* for time step 'i', cfm

~~$Q_{fan,i}$ = *mechanical* Ventilation airflow rate for the time step 'i', cfm~~

### *Modify row 26 of Table 4.5.2 as follows:*

[3] ~~(Informative Note) Equation taken from ASHRAE Standard 62.2-2016, Normative Appendix C, equations (C7) and (C8).~~

| Table 4.5.2(1) Minimum Rated Features | |
|---|---|
| **Building Element** | **Minimum Rated Feature** |
| 26. On-site Power Production | System type, total annual kWh generation, Renewable Energy Certificates (RECs) status [retired, retained ownership, sold/transferred, none associated with system, unknown], and total site fuel used in the On-Site Power Production as derived from manufacturer's performance ratings. |

***Modify the Appendix B table as follows:***

| Building Element: On-Site Power Production | | |
|---|---|---|
| **Rated Feature** | **Task** | **On-Site Inspection Protocol** |
| Annual electricity generation for On- Site Power Production (OPP) systems | Data collection for On-Site Power Production systems | *On-Site Power Production systems* – Collect documentation that shows the annual kWh/y generated. For combined heat and power systems, the documentation shall include the annual gas use in addition to kWh/y generated.<br><br>*Renewable Energy Systems* – Collect documentation or other information to determine whether Renewable Energy Certificates (RECs) are associated with the system, and document the RECs status as retired, retained ownership, sold/transferred, none associated with system, unknown.<br><br>*Photovoltaic Systems* – In situations where the Approved Software Rating Tool calculates electricity generation from photovoltaic systems, determine and record the following:<br>• the orientation of the photovoltaic array to the nearest cardinal/ordinal point, in the direction the array faces;<br>• the tilt of the array. Use an angle finder instrument or geometric calculation;<br>• the area of the array and the peak power using the information on the SRCC label or manufacturer's data sheet; and |

| | | |
|---|---|---|
| | | • the efficiency of the inverter using the manufacturer's data sheet. |