R408.2.2 More efficient HVAC equipment performance option.

Heating and cooling equipment shall meet one of the following efficiencies:
Centrally Ducted Systems

1. Greater than or equal to 95 AFUE natural gas furnace and ~~16~~15.2 SEER2 in Climate Zones 5, 6, and 7 and 16.~~0~~9 SEER2 in the other Climate Zones for air conditioner.
2. Greater than or equal to 95 AFUE natural gas furnace and 8.5 HSPF2/16.~~0~~9 SEER2 air source heat pump.
3. Greater than or equal to ~~10 HSPF/16 SEER~~ 8.5 HSPF2/16.0~~9~~ SEER2 air source heat pump.
4. Greater than or equal to 3.5 COP ground source heat pump.

Ductless Systems

1. Single Zone: 8.5 HSPF2/16.9 SEER2 variable speed air source heat pump
2. Multi Zone: 8.5 HSPF2/16.9 SEER2 variable speed air source heat pump (Non-Ducted Indoor Units)
3. Multi Zone: 8.5 HSPF2/15.2 SEER2 variable speed air source heat pump (Ducted or Mixed Indoor Units)

For multiple cooling systems, all systems shall meet or exceed the minimum efficiency requirements in this section and shall be sized to serve 100 percent of the cooling design load. For multiple heating systems, all systems shall meet or exceed the minimum efficiency requirements in this section and shall be sized to serve 100 percent of the heating design load.

Reason: The 2021 IECC has implemented a new section, R408 Additional Efficiency Package Options, which defines requirements to achieve additional energy efficiency to be selected from one of the following five options: 1. Enhanced envelope performance option., 2. More efficient HVAC equipment performance option., 3. Reduced energy use in servicing water-heating option., 4. More efficient duct thermal distribution system option., and 5. Improved air sealing and efficient ventilation system option. Daikin requests that the 2024 version of IECC retains the section to continue effectively driving builders and users to optimize the energy performance of their homes. ~~As mentioned in our Introduction (see attached letter), variable speed heat pumps provide superior energy performance over single and two-stage equipment due to their higher efficiency attained during partial load operation~~Daikin proposes to increase the SEER requirement for air conditioner by one from the 2021 IECC of the same section referring to the increase to be implemented by the 2023 DOE minimum efficiency standard. Also referring to the DOE standards, Daikin proposes to set the SEER requirement for air conditioner by regions. In the standards, the North region has the SEER requirement one lower than South and Southwest as well as the ones for heat pumps. Though the DOE regional splits do not precisely align with the IECC climate zones, Daikin selected the zones 5, 6, and 7 to be equivalent of the North region. Also, ductless systems ~~with variable speed compressors~~ provides homeowners opportunities to further save energy consumption by turning off individual indoor units in unoccupied zones. ~~For the 2024 IECC, Daikin proposes changes to R408.2 and R408.2.2 to accurately capture the energy performance superiority of variable~~

~~speed air source heat pumps in both centrally ducted and ductless systems.~~ The metrics of HSPF and SEER are being updated to the new metrics of HSPF2 and SEER2 that will be in effect when the 2024 IECC is adopted by jurisdictions (see 10 CFR 430.32).