GG329-14
A106.2.2.3, Table A106.2.2.3, A106.2.2.4

THIS CODE CHANGE PROPOSAL IS ON THE AGENDA OF THE IgCC ENERGY/WATER CODE DEVELOPMENT COMMITTEE. SEE THE HEARING ORDER FOR THE IgCC ENERGY/WATER CODE DEVELOMPENT COMMITTEE.

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Revise as follows:

A106.2.2.3 Ground source or geothermal heat pumps. Ground source or geothermal heat pumps with a rated cooling capacity of 65,000 Btu/h or less shall meet the provisions of Table A106.2.2.3 based on the applicable referenced test procedure.

TABLE A106.2.2.3
ENERGY-EFFICIENCY CRITERIA FOR GROUND SOURCE OR GEOTHERMAL HEAT PUMPS

PRODUCT TYPE[a]	*MINIMUM* EER	*MINIMUM* COP
Water-to-Air Closed loop **TEST PROCEDURE - ISO 13256-1**	~~14.1~~ 17.1	~~3.3~~ 3.6
Water-to-Air Open loop **TEST PROCEDURE - ISO 13256-1**	~~16.2~~ 21.1	~~3.6~~ 4.1
Water-to-Water Closed loop **TEST PROCEDURE - ISO 13256-2**	~~15.1~~ 16.1	~~3.0~~ 3.1
Water-to-Water Open loop **TEST PROCEDURE - ISO 13256-2**	~~19.1~~ 20.1	~~3.4~~ 3.5
Direct Expansion (DX) or Direct GeoExchange (DGX) **TEST PROCEDURE - AHRI 870**	~~15.0~~ 16.0	~~3.5~~ 3.6

EER = energy-efficiency ratio; COP = coefficient of performance
a. Efficiency values apply to units with a maximum rated cooling capacity of 65,000 Btu/h or less.

A106.2.2.4 Multi-stage ground source or geothermal heat pumps. The efficiency of multi-stage ground source or geothermal heat pumps shall meet the provisions of Table A106.2.2.3 based on the applicable referenced test procedure.

Reason: This proposal updates the values in Table A106.2.2.3 to match the Tier 3 values for Energy Star geothermal heat pumps that went into effect in 2012. Information about these values can be found at the following web site: http://www.energystar.gov/index.cfm?c=geo_heat.pr_crit_geo_heat_pumps

In addition, there is the following language on the Energy Star web site: "Commercial (i.e., 3-phase) units are not eligible for qualification under the ENERGY STAR specification at this time." To make this table more technically accurate, there is new wording to show that these values are only for units that have capacities that are usually associated with single family homes.

Also, the web site only contains a definition for a geothermal heat pump, not a "ground source" heat pump, as shown below. To avoid market place confusion, the word geothermal has been added back in to this section.

Geothermal Heat Pump

A geothermal heat pump uses the thermal energy of the ground or groundwater to provide residential space conditioning and/or domestic water heating. A geothermal heat pump model normally consists of one or more factory-made assemblies that include indoor conditioning and/or domestic water heat exchanger(s), compressors, and a ground-side heat exchanger. A geothermal heat pump model may provide space heating, space cooling, domestic water heating, or a combination of these functions and may also include the functions of liquid circulation, thermal storage, air circulation, air cleaning, dehumidifying or humidifying. A geothermal heat pump system generally consists of one or more geothermal heat pump models, the ground heat exchanger(s), the air and/or hydronic space conditioning distribution system(s), temperature controls, and thermal storage tanks.

Cost Impact: Will increase the cost of construction. Products with higher efficiency values tend to have higher initial costs.

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