

*Comment Received From: Frank T. Morrison*  
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## **Dry Cooler Minimum Efficiency**

A minimum efficiency for axial fan, air cooled fluid coolers, better known as dry coolers, should be added to Table 110.2 G along with CTI ATC-105DS, Acceptance Test Code for Dry Fluid Coolers, as the test standard. ATC-105DS should also be added to the reference standard section.

*Additional submitted attachment is included below.*

## Proposal for Title 24 2022

A minimum efficiency for axial fan, air cooled fluid coolers, better known as dry coolers, should be added to Table 110.2 G along with CTI ATC-105DS, Acceptance Test Code for Dry Fluid Coolers, as the test standard. ATC-105DS should also be added to the reference standard section. The minimum efficiency value below will not place a significant burden on either manufacturers or purchasers of this equipment and will allow the market to adjust to these new requirements. However, this value is expected to be increased over time and the introduction of the Test Code will assist purchasers of dry coolers to confirm the actual rated capacity that was specified in their system design.

Note that dry coolers were included in Standard 90.1-2019 through Addendum “bq”.

Modify Table 110.2 G Performance Requirements for Heat Rejection Equipment as follows:

Equipment Type	Total System Heat Rejection or Rated Conditions	Subcategory or Rating Condition	Performance Required	Test Procedure
<u>Propeller or axial fan dry coolers (air-cooled fluid coolers)</u>	All	<u>115°F entering water</u> <u>105°F leaving water</u> <u>95°F entering air db</u>	<u>≥4.5 gpm/hp</u>	<u>CTI ATC-105DS</u>

Also modify footnote “c” as follows:

<sup>c</sup> For purposes of this table, dry cooler performance is defined as the process water flow rating of the unit at the given thermal rating condition divided by the total fan motor nameplate power of the unit and air-cooled condenser performance is defined as the heat rejected from the refrigerant divided by the total fan motor nameplate power of the unit.

Add to Appendix 1-A *STANDARDS AND DOCUMENTS REFERENCED IN THE ENERGY CODE*

CTI ATC-105DS-18

Acceptance Test Code for Dry Fluid Coolers (2018)