

# GEW91-14

## 606.5.1, Table 606.5.1(1), Table 606.5.1(2)

**Proponent:** Brenda Thompson, Chair, representing Sustainability, Energy, and High Performance Code Action Committee (SEHPCAC@iccsafe.org)

**Revise as follows:**

**606.5.1 Economizer systems.** Each cooling system that has a fan shall include either an air economizer complying with Section 606.5.1.1 or a water economizer complying with Section 606.5.1.2.

**Exception:** Economizers are not required for the following:

1. Individual fan-cooling units with a supply capacity less than the minimum listed in Table 606.5.1(1).
2. In Group I-2 occupancies, hospitals, and Group B occupancies, ambulatory care facilities, where more than 75 percent of the air designed to be supplied by the system is to spaces that are required to be humidified above a 35°F (1.7°C) dew-point temperature to comply with applicable codes or accreditation standards. In other occupancies, where more than 25 percent of the air designed to be supplied by the system is to spaces that are designed to be humidified above a 35°F (1.7°C) dew-point temperature to satisfy process needs.
3. Systems that include a condenser heat recovery system that is designed to utilize 60 percent of the peak heat rejection load at design conditions and there is a documented need for that rejected heat for either service hot water or space heating during peak heat rejection design conditions.
4. Systems that serve spaces estimated as having a sensible cooling load at design conditions, excluding transmission and infiltration loads, of less than or equal to transmission and infiltration losses at the temperature and relative humidity design conditions in accordance with Section 6.1 of ASHRAE 55.
5. Where the use of outdoor air for cooling will affect supermarket open refrigerated casework systems.
6. Where the cooling efficiency is equal to, or greater than, the efficiency improvement requirements in Table 606.5.1(2).

**TABLE 606.5.1(1)  
ECONOMIZER REQUIREMENTS**

<b>CLIMATE ZONES</b>	<b>ECONOMIZER REQUIREMENT</b>
1A, 1B	No requirement
2A, 2B, 3A, 3B, 3C, 4A, 4B, 4C, 5A, 5B, 5C, 6A, 6B, 7, 8	Economizers on all cooling systems having a capacity $\geq$ 33,000 Btu/ha

For SI: 1 British thermal unit per hour = 0.293 W.

a. The total capacity of all systems without economizers shall not exceed 480,000 Btu/h per building or 20 percent of the building's air economizer capacity, whichever is greater.

**TABLE 606.5.1(2)  
EQUIPMENT EFFICIENCY PERFORMANCE EXCEPTION FOR ECONOMIZERS**

<b>CCLIMATE ZONES</b>	<b>COOLING EQUIPMENT EFFICIENCY IMPROVEMENT (%)<sup>a</sup></b>
2A	17
2B	21
3A	27
3B	32
4A	42
4B	49

IPLV = Integrated part load value, IEER = Integrated energy efficiency ratio, SEER = Seasonal energy efficiency rating, EER = Energy efficiency ratio, COP = Coefficient of performance

a. Where a unit is rated with an IPLV, IEER or SEER, the minimum values for these metrics shall be increased by the percentage listed in the table in order to eliminate the required air or water economizer. Where a unit is rated only with a full load metric such as EER or COP cooling, these metrics shall be increased by the percentage shown.

**Reason:** This proposal was submitted by the ICC Sustainability Energy and High Performance Code Action Committee (SEHPCAC). The SEHPCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance International Codes with regard to sustainability, energy and high performance as it relates to the built environment included, but not limited to, how these criteria relate to the International Green Construction Code (IgCC) and the International Energy Conservation Code (IECC). This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. In 2012 and 2013, the SEHPCAC has held six two-day open meetings and 50 workgroup calls, which included members of the SEHPCAC as well as any interested parties, to discuss and debate proposed changes and public comments. Related documentation and reports are posted on the SEHPCAC website at: <http://www.iccsafe.org/cs/SEHPCAC/Pages/default.aspx>.

The footnote (a) does not clearly provide differences in application of the code. The first sentence of the note says if the equipment is rated by IPLV, IEER or SEER then you use the percentages of the table. The second sentence says if the equipment is rated with EER or COP then you use the percentages in the table. If there is a category where you don't use these efficiency improvements, then that would be the type of information to have in a footnote. The text of Exception 6 of Section 606.5.1 specifically says economizers aren't required when the cooling efficiency is improved per the table. The units applied to the equipment are irrelevant because the footnote says they are to be treated the same. Once footnote a is eliminated, then there is no need to the explanative definitions immediately below the table.

**Cost Impact:** Will not increase the cost of construction. The proposal is editorial as it eliminates a footnote that has no impact on the regulation.

GEW91-14: TABLE 606.5.1 (2)-THOMPSON570