

Re: Florida Building Code Interpretation Request
Date: September 6, 2017

To whom it may concern:

I am being told a cooling tower serving a hospital within a wind-borne debris region (not HVHZ) must be protected from horizontal impact as required by TAS 201.

The main purpose of this communication is to gain clarification as to whether a cooling tower serving a hospital is required to have impact resistance surrounding it and up the full height of the tower. There are two sections in the Florida Building Code 2014 edition I am hoping to gain understanding. I have highlighted the text of the related questions in **purple** for your convenience in providing a response.

The first deals with Section 449. For the purposes of this discussion, assume a facility in a windborne debris zone (not HVHZ). Specifically paragraph 449.4.2.6.1 and associated paragraph 449.4.2.6.1.2, which are quoted below with relevant verbiage in red:

449.4.2.6.1 All new air-moving equipment, dx condensing units, through-wall units and other HVAC equipment located outside of, partially outside of, or on the roof of the facility and providing service to the new facility shall be permitted only when either of the following are met:

449.4.2.6.1.1 They are located inside a penthouse designed to meet the wind load requirements of the Florida Building Code, Building; or

449.4.2.6.1.2 Their fastening systems are designed to meet the wind load requirements of the *Florida Building Code, Building* and they and all associated equipment are protected as required by TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through 1626.4 of this code from damage by horizontal impact by a separate and independent structure that allows access to all parts of the equipment at all times; or

449.4.2.6.1.3 They are completely protected by the equipment shrouding that meets the requirements of TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through 1626.4 of this code.

Per definitions in FBC – Mechanical 2014, equipment is defined as:

EQUIPMENT. All piping, ducts, vents, control devices and other components of systems other than appliances which are permanently installed and integrated to provide control of environmental conditions for buildings. This definition shall also include other systems specifically regulated in this code.

Per definitions in FBC – Mechanical 2014, appliance is defined as:

APPLIANCE. A device or apparatus that is manufactured and designed to utilize energy and for which this code provides specific requirements.

Is a cooling tower an appliance, equipment or neither? If it is an appliance, is it required to be protected from impact resistance under Section 449?

Please note these following related paragraphs:

Per FBC – Building paragraph 449.4.6.2, support areas shall be supplied with sufficient HVAC as determined by the facility. This would imply it is up to the facility to determine whether the cooling towers need to be protected from horizontal impact. The following is the referenced paragraph:

449.4.2.6.2

All occupied patient areas and patient support areas shall be supplied with sufficient HVAC as determined by the facility to ensure the health, safety and well-being of all patients and staff during and immediately following a disaster.

Paragraph 449.4.2.6.3 does not, in itself, require the HVAC systems to be on emergency power. This would imply that some level of inoperation is acceptable with regards to the HVAC system (in this discussion, the cooling), depending on what the Facility deems as necessary and barring any requirements elsewhere in the Code (see reference to paragraph 449.4.2.6.4 below). The following is the referenced paragraph:

449.4.2.6.3

As determined by the facility these selected HVAC systems and their associated support equipment, such as a control air compressor essential to the maintenance of the occupied patient and patient support area(s), shall receive their power from the emergency power supply system(s).

Paragraph 449.4.2.6.4 dictates that ventilation air change rates in patient areas shall be maintained. It does not dictate conditioning air. This again would imply that the cooling towers are not necessarily required to be operational, however, acknowledging the Facility may choose to require such. The following is the referenced paragraph:

449.4.2.6.4

Ventilation air change rates in occupied patient areas shall be maintained as specified in this section during and immediately following a disaster by connection to the essential electrical system.

Considering the above, is it the intent of the Code to require entire cooling towers (full height, which could be up to 20'+) to be protected from horizontal impact per TAS 201?

The second instance in the Florida Building Code 2014 edition I am hoping to gain understanding of the intent is in reference to Section 303, more specifically paragraph 303.4 which states:

303.4 Protection from damage. Appliances shall not be installed in a location where subject to mechanical damage unless protected by approved barriers.

Is paragraph 303.4 of the Florida Mechanical Code 2014 applicable to cooling towers?

Is it intended this paragraph requires cooling towers to be protected from horizontal impact as required by TAS 201 or is its purpose to keep items, such as cooling towers, from being placed in locations that might be at risk (such as at the end of a parking space without bollards or some other protective barrier)?

Thank you in advance for your consideration of the above. Please feel free to contact me to discuss this issue or additional information is needed at (813)787-6308.

Respectfully,

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