



**TO:** All Internal and External Stakeholders

**FROM:** Beth Culver, AIA, PMP, Chief Plans Examiner  
Development Services Department

**DATE:** January 1, 2018

**SUBJECT:** Information Bulletin No. 2018-0002, Mechanical Code 1126.0 Standards for Cooling Towers

**File:** Code Interpretation Manual

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As a customer service initiative, the Development Services Department (DSD) in cooperation with Austin Water has developed this Information Bulletin (IB) in order to describe and clarify the requirements under **1126.0 Standards for Cooling Towers** of the city's Mechanical Code and to achieve the intended purpose of this requirement in the most practical, economical and cost effective manner and to be used as guidance for department plan review and inspections.

On June 8, 2017, the Austin City Council approved the adoption of the 2015 Uniform Mechanical Code including the following local amendment effective September 6, 2017 (RESOLUTION 20170608-056):

**1126.0 Standards for cooling towers.** A cooling tower must:

1. achieve a minimum of five cycles of concentration if the cooling tower utilizes potable water as its primary source of make-up water;
2. be fitted with overflow sensors and alarms, make-up water and blowdown meters to manage water consumption, and conductivity controllers;
3. if the cooling tower is 100 tons or more, the make-up and blowdown meters and over flow alarm must be connected to the building's central energy management system or utility monitoring dashboard; and
4. be equipped with drift eliminators with a drift rate that does not exceed 0.005 percent of the circulated water flow rate when operated consistent with the equipment manufacturer's instructions and be used with the cooling tower, evaporative condensers, and fluid coolers; and
5. be registered with Austin Water Utility's Water Conservation Division; and
6. beginning January 1, 2017, include the installation of a water storage tank, plumbing, and treatment to utilize blowdown water for landscape or other authorized beneficial purposes or offset a minimum of 10 percent of the make-up water with reclaimed or onsite water reuse if the capacity of the cooling tower is 100 tons or more and installed for new commercial or multi-family development.

The code provision was the result of city council direction to implement water conservation measures recommended by citizen task forces in 2007 (RESOLUTION 20070503-029) and in 2014 (RESOLUTION



NO. 20140807-090). The purpose of the recommendations were to conserve and prevent the waste of potable water, reduce potable water treatment and distribution costs, reduce water and wastewater costs to customers, increase cooling tower water efficiency, protect public health by reducing the potential for airborne bacteria, and offset potable water demand with on-site alternative water sources

In response to comments by Austin Water, Water Conservation Division, customer questions and issues regarding enforcement of the ordinance above, the DSD issues this guidance:

- (1) On June 8, 2017, the Austin City Council approved the adoption of the 2015 Uniform Mechanical Code (UMC) including local amendments effective September 6, 2017. Section 1126.0(6) has an express effective date of January 1, 2017 that is in conflict with the effective date of the council ordinance (Resolution Number 20170608-056). Therefore, the requirements of §1126.0(6) shall be enforced for a new tower that was installed on or after September 6, 2017. Other new requirements under §1126.0 with an effective date of September 6, 2017 include §§1126.0(3) and 1126.0(5). This does not affect the requirements of §§1126.0(1), 1126.0(2), 1126.0(4), E 403.2 and E 403.3, and §614.0 of the 2015 Uniform Plumbing Code, which have been re-codified and have been in effect under the city's previous plumbing and mechanical codes since January 1, 2008 (Ordinance No. 20071018-086) and shall continue to be applied to all new and replacement cooling towers installed after December 31, 2007.
- (2) A major water conservation strategy of the city is to offset potable water demands with reclaimed and on-site alternative water sources including, but not limited to, cooling tower blowdown water. Meeting eligible demands with municipal reclaimed water or other alternative on-site sources of water that meets the goal of offsetting potable water demands shall be considered in the review of requests for alternative compliance. Where §6-4-11(E) of the City Code also applies, Austin Water prefers that reclaimed water be used in lieu of cooling tower blowdown, AC condensate or other alternative water sources to meet eligible demands. Where §6-4-11(E) does not apply, Austin Water prefers that eligible demands be met with AC condensate as provided under §§1126.0(6) and 310.10, UMC.
- (3) The cooling tower water efficiency requirements are intended to apply to cooling towers that are primarily using AW potable water, not to towers that are primarily using reclaimed or other alternative water sources that may be using potable water only as a backup supply.
- (4) In order to maximize the protection of public health and safety, the use of cooling tower blowdown for toilet flushing, spray irrigation or other uses with the potential for human contact shall not be *required* under this ordinance. This shall not prohibit customers from seeking authorization for these or any other authorized use pursuant to state and local treatment, design and permitting standards.
- (5) The reuse of cooling water blowdown will not be *required* under §1126.0(6) to offset potable water demands for subsurface irrigation. DSD recognizes that if the cooling system is efficiently using water, the blow-down water will have a Total Dissolved Solids (TDS) level too high to be suitable for irrigating plants without additional treatment or blending with softer water. The continual use of high TDS water will also cause a build-up of these minerals and salts in the soil. If these minerals are not periodically flushed from the soil, they will greatly impair root



growth of plants, and can kill the plants over time. Based on average rainfall amounts, Austin landscapers may find it necessary to occasionally flush the soil by irrigating with softer potable water, diminishing the intended purpose of offsetting the use of potable water. In addition, Austin Water prefers that cooling water be used efficiently at higher cycles of concentration with the resulting higher TDS levels than to use the blowdown water after fewer cycles of concentration and lower TDS levels which will then require additional treatment, storage and pumping costs and the potential use of potable water to soften the water or to flush irrigation fields. Customers may, however, choose to seek authorization for this or any other authorized use pursuant to state and local treatment, design and permitting standards.

- (6) Where there is no eligible or required demand to be met with cooling tower blowdown, the blowdown shall be discharged to the sanitary system for reuse in the Austin Water reclaimed water system.
- (7) The permit applicant is responsible for the design of the makeup water offset or blowdown reuse system in accordance with applicable state and city requirements. Austin Water recommends applicants refer to the *Multi-Family Residential & Commercial Onsite Water Reuse Guide for Customers* (Austin Water 2017) and the *San Antonio Condensate Collection and Use Manual for Commercial Buildings* (San Antonio Water System 2013, Diana D. Glawe, PhD, PE, LEED AP) for additional guidance.

If you have any questions regarding this Information Bulletin, please call a Mechanical Plans Examiner in Commercial Plan Review at (512) 978-4000.

  
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