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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 7190.2-2018

## Mechanical draft cooling towers - Part 2: Large open cooling towers

机械通风冷却塔 第2部分：大型开式冷却塔

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## Foreword

GB/T 7190 "Mechanical Ventilation Cooling Tower" is divided into three parts.

--- Part 1. Small and medium-sized open cooling towers;

--- Part 2. Large open cooling towers;

--- Part 3. Closed cooling tower. This part is the second part of GB/T 7190. This part is drafted in accordance with the rules given in GB/T 1.1-2009. This part replaces GB/T 7190.2-2008 "glass fiber reinforced plastic cooling tower Part 2. large glass fiber reinforced plastic cold But the tower. The main changes in this section compared with GB/T 7190.2-2008 are as follows:

---The standard name was changed from "glass fiber reinforced plastic cooling tower part 2. large glass fiber reinforced plastic cooling tower" to "machine Mechanical Ventilation Cooling Tower Part 2. Large Open Cooling Towers;

--- Revised the scope of application, and modified the "mechanical ventilation industrial cooling tower" to "reverse flow, cross-flow mechanical ventilation with water-filled packing" Cooling tower" (see Chapter 1, Chapter 1 of the.2008 edition);

---Modified and deleted some of the reference standards, increased the structure of fiber reinforced composite pultruded profiles, noise measurement correction technology The required reference standard (see Chapter 2, Chapter 2 of the.2008 edition);

---Modified and deleted some terms and definitions, stipulated to refer to the terms and definitions in GB/T 7190.1 (see Chapter 3,.2008 edition) Chapter 3);

---Modified the product labeling regulations (see 4.2,.2008 edition 4.2);

--- Modify "thermal performance" to "cooling performance" "standard design conditions" to "standard operating conditions" (see 5.1,.2008 edition) 5.1);

--- Increase the energy efficiency rating and divide it into 1st, 2nd, 3rd, 4th and 5th grades according to the power consumption ratio (see 5.3,.2008 edition) 5.3);

--- Increased the appearance of the tower material, the thickness of the zinc-impregnated layer of the metal parts, and the performance requirements of the composite parts such as the molded parts and the pultruded profile products. Requirements for Bakr hardness, resin content, envelope structure and duct appearance (see 5.5,

--- Modify the requirements of the water-filling filler (see 5.6,

5.6 of the.2008 edition);

## 1 Scope

Part 2 of China's national standard for mechanical draft cooling towers, covering large open towers. Above a thousand cubic metres an hour a cooling tower stops being a packaged product and becomes a structure: it is built on site in concrete or assembled from field-erected modules, its fans are metres across and driven through gearboxes, and it serves a power station, a petrochemical complex or a district cooling plant rather than a building. The engineering problems change with the size. Air must be distributed evenly across a very large plan area or one corner of the fill does no work; the fan's efficiency matters because it runs continuously at hundreds of kilowatts; the structure must carry the weight of the water it holds plus wind and seismic loads; and drift - water carried out as droplets - becomes an environmental issue because it deposits salts downwind. This part specifies the product classification and marking, requirements, test methods, inspection rules, marking, packaging, transport and storage for counterflow and crossflow open towers of 1000 cubic metres an hour and above.

This part of GB/T 7190 specifies the product classification and marking, requirements, test methods, inspection rules, markings of large open cooling towers. Packaging, transportation, storage and others. This part is applicable to the counter-flow, cross-flow mechanical ventilation open cooling tower with single tower cooling water volume of not less than 1000m3/h and water-filled packing.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 1449 fiber reinforced plastic bending performance test method

GB/T 2518 continuous hot-dip galvanized steel sheet and strip

GB/T 7190.1 Mechanical Ventilation Cooling Tower Part 1. Small and Medium Open Cooling Towers

GB/T 8924 Fibre reinforced plastics - Determination of burning performance - Oxygen index method Technical requirements and test methods for hot-dip galvanized coating of

GB/T 13912 metal-clad steel parts

GB/T 31539-2015 Structural fiber reinforced composite pultruded profiles Technical conditions for DL/T 742 cooling tower plastic parts

HJ706 Environmental Noise Monitoring Technical Specification Noise Measurement Correction

## 3 Terms and definitions

The following terms and definitions as defined in GB/T 7190.1 apply to this document.

3.1 Watering filler fil A device for contacting circulating cooling water with air in the form of a water film or water droplets to increase the contact area and prolong the contact time. filler.

3.2 Water distribution system coolingwaterdistributionsystem A device that uniformly sprays circulating cooling water onto the top of the packing, consisting of a sink or pipe and a spray head.

3.3 Water collector drifteliminator A device used to collect water droplets entrained in the tower air.

## 4 Product classification and marking

4.1 Product Classification Cooling towers are classified into two types, countercurrent and crossflow, depending on the relative flow direction of water and air in the packing.