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Water-cooling towers — Testing and rating of thermal performance

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Contents

Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 6, *Testing and rating of air-conditioners and heat pumps*.

INTERNATIONAL STANDARD ISO 16345:2014(E)

Water-cooling towers — Testing and rating of thermal performance

1 Scope

This International Standard covers the measurement of the thermal performance and pumping head of open- and closed-circuit, mechanical draft, wet and wet/dry cooling towers and natural draft and fan-assisted natural draft, wet and wet/dry cooling towers. The standard rating boundaries for series mechanical draft, open- and closed-circuit cooling towers are specified.

This International Standard does not apply to the testing and rating of closed-circuit towers where the process fluid undergoes a change in phase as it passes through the heat exchanger or where the thermophysical properties of the process fluid are not available.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply. The symbols used to identify the terms contained in this International Standard are listed and defined in Clause 3.

2.1
airflow rate
total amount of dry air and associated vapour water moving through the cooling tower

2.2
ambient air conditions
atmosphere adjacent to, but not affected by, the cooling tower

2.3
approach
difference between cold (re-cooled) water temperature and the inlet-air wet-bulb temperature

2.4
approach deviation
deviation between the guaranteed and adjusted test approach

2.5
atmospheric gradient (lapse rate)
average rate of change of dry-bulb temperature with change in altitude from cold water basin curb, or sill, level to around twice the height of the cooling tower

Note 1 to entry: The convention for use with this International Standard will be to use a negative value for decrease in temperature as height increases.

2.6
average wind direction
predominant direction of the wind over the duration of the test period

2.7
average wind speed
arithmetical average of wind speed measurements taken over the duration of the test period

2.8
barometric pressure
atmospheric pressure taken over the duration of each test period