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ANSI/ASHRAE Standard 146-2020
Methods of Test for Rating Pool Heaters

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NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

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FOREWORD

This 2020 revision to Standard 146 was prepared under the auspices of ASHRAE. It may be used in whole or in part by an association or government agency with due credit to ASHRAE. Adherence is strictly on a voluntary basis and merely in the interest of obtaining uniform standards throughout the industry.

Changes made for the 2020 revision are as follows:

- *The standard has been reformatted as a method of test. The specific test conditions to determine a rating are set by the users of the standard.*
- *The scope has been expanded to include heat-pump pool heaters that use earth, water, or brine as the heat source and hybrid pool heaters equipped with both a fossil-fueled burner and a heat pump.*
- *The test method has been revised to address the products included by the expanded scope.*
- *Definitions and references have been updated.*
- *The specification for use of the optional recirculating loop has been modified to make clear that it applies only when required by the manufacturer.*
- *Test methods have been added to measure the standby and OFF-mode energy consumption.*
- *Two obsolete informative appendices have been deleted, and a new Informative Appendix B was added describing the test conditions used by the U.S. Department of Energy to rate pool heaters.*

1. PURPOSE

The purpose of this standard is to provide methods of testing for rating pool heaters.

2. SCOPE

2.1 This standard provides methods of testing for heating capacity and energy efficiency.

2.2 This standard applies to forced circulation heaters operated by gas, oil, and/or electricity—including heat pumps using ambient air, earth, water, or a brine solution as a heat source—and hybrid heaters.

3. DEFINITIONS

active mode: the condition during the pool heating season in which the pool heater is connected to the power source, and the main burner, electric resistance element, or heat pump is activated to heat pool water.

apparatus: as used in this standard, test room facilities and instrumentation.

coefficient of performance (COP): as applied to a heat-pump pool heater, the ratio of heat output in kilowatts (Btu/h) to the total power input in kilowatts (Btu/h).

coil, outdoor: the heat exchanger that absorbs heat from the outdoor air.

electric resistance pool heater: an appliance designed for heating nonpotable water and employing electric resistance heating elements.

equipment: as used in this standard, the equipment to be tested.

fossil-fuel fired pool heater: an appliance designed for heating nonpotable water and employing natural gas, propane, or oil burners.

heat output: the rate at which heat is passed to the water in kilowatts (Btu/h) under specified conditions of operation.