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ANSI/ASHRAE Standard 169-2020
Climatic Data for Building Design Standards

Online Supporting Files: www.ashrae.org/169-2020

NOTE

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

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Standard 169 provides a comprehensive source of climate data for those involved in building design. It has been established to provide a variety of climatic information used primarily for the design, planning, and sizing of buildings' energy systems and equipment. This standard is referenced in other ASHRAE standards, such as Standards 90.1, 90.2, and 189.1.

The data presented in this standard are compiled from the 2017 ASHRAE Handbook—Fundamentals*, Chapter 14, "Climatic Design Information," and other data developed specifically for this standard through ASHRAE RP-1699, "Updating the ASHRAE Climatic Data for Design and Standards."*

The data and tables have been completely revised and updated from the 2013 edition. The standard now also includes the weather and shielding factor (WSF) required in Standard 62.2-2016, as well as data for 8118 locations throughout the world, an increase of 2554.

1. PURPOSE

This standard provides recognized climatic data for use in building design and related equipment standards.

2. SCOPE

2.1 This standard covers climatic data used in ASHRAE standards, including dry-bulb, dew-point, and wet-bulb temperatures, enthalpy, humidity ratio, wind conditions, solar irradiation, latitude, longitude, and elevation for locations worldwide.

2.2 This standard also includes statistical data, such as mean temperatures, average temperatures, mean/median annual extremes, daily ranges, heating and cooling degree-days and degree hours, hours and seasonal percentages within ranges of temperatures, as well as bins.

3. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

3.1 Definitions

degree-day: the difference in temperature between the outdoor mean temperature over a 24-hour period and a given base temperature. The classifications are defined as follows:

cooling degree-day base 50°F, CDD50 (10°C, CDD10): for any one day, when the mean temperature is more than 50°F (10°C), there are as many degree days as degrees Fahrenheit or Celsius temperature difference between the mean temperature for the day and 50°F (10°C) (mean temperature minus 50°F [10°C]). Annual cooling degree-days (CDDs) are the sum of the degree-days over a calendar year.

heating degree-day base 65°F, HDD65 (18.3°C, HDD18): for any one day, when the mean temperature is less than 65°F (18.3°C), there are as many degree days as degrees Fahrenheit or Celsius temperature difference between and 65°F (18.3°C) and the mean temperature for the day (65°F [18.3°C] minus the mean temperature). Annual heating degree-days (HDDs) are the sum of the degree-days over a calendar year.

3.2 Abbreviations and Acronyms

CDD_n	=	cooling degree-days base *n*°F, °F·day (*n*°C, °C·day)
CDH_n	=	cooling degree-hours base *n*°F, °F·h (*n*°C, °C·h)
CZ	=	climate zone
DB	=	dry-bulb temperature, °F (°C)
DBAvg	=	average daily dry-bulb temperature, °F (°C)
DBSD	=	standard deviation of average daily dry-bulb temperature, °F (°C)
DP	=	dew-point temperature, °F (°C)
$E_{bn,noon}$	=	clear-sky beam normal irradiance at solar noon, Btu/h/ft^2 (W/m^2)