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PREFACE TO THE 34th EDITION

The 34th Edition of the HEATING VENTILATING AIR CONDITIONING GUIDE, 1956, contains 1176 pages of technical text—16 pages more than the largest previous edition. In addition, new material equivalent to 14 pages has been added where condensation of previous text was possible.

Substantial improvements have been made in 16 chapters, some of which have been almost completely rewritten. In the outline of changes which follows, it will be noted that special attention has been given to subjects dealing with heat transmission of building materials, cooling load, chimneys, estimating fuel consumption, baseboard and finned-tube radiation, snow melting, central systems for air conditioning, air duct design, air heating and cooling coils, automatic control, pipe and tube characteristics and insulation, automobile air conditioning, heat transfer measurements, and codes and standards.

The following paragraphs describe the significant changes in the chapters having the most important revisions:

Chapter 1—Terminology. Revisions have been made in several definitions to obtain agreement with values adopted by the 9th and 10th General Conference on Weights and Measures.

Chapter 4—Fluid Flow. Most of the illustrations have been improved. A number of clarifications have been made in the text.

Chapter 9—Heat Transmission Coefficients of Building Materials. The chapter has been enlarged to permit addition of many materials to the list showing design values for conductivity and conductance. New information has been included for estimating the conductances of air spaces bounded by reflective surfaces. New tables facilitate the determination of the effect of adding insulation to wall, floor, and roof sections. A new chart makes it possible to correct quickly for the effect of framing members. The revision was prepared by the ASHAE Technical Advisory Committee on Insulation assisted by staff members of the ASHAE Research Laboratory.

Chapter 15—Cooling Load. Weather design data have been added for 21 Canadian cities, and a number of improvements have been made in the text.

Chapter 17—Chimneys and Draft Calculations. The discussion of the theory of draft calculations has been rewritten. The sections on residential chimneys and gas appliance chimney requirements have been revised and enlarged.

Chapter 18—Estimating Fuel Consumption for Space Heating. The table of degree days has been extended to include 287 U. S. and 40 Canadian cities using up-to-date information furnished by the U. S. Weather Bureau and the Canadian Meteorological Service.

Chapter 22—Hot Water Heating Systems. A number of improvements have been made in the section on high temperature systems.

Chapter 23—Radiators, Convectors, Baseboard and Finned-Tube Units. Sections were added to supply information on baseboard and finned-tube units of present design. The chapter was largely rewritten.

Chapter 24—Panel Heating. The section on snow melting was rewritten and enlarged to include recent developments in this field and to provide new viscosity and other data for the designer.

Chapter 26—Unit Air Conditioners and Unit Air Coolers. Much of the text was rewritten to describe present types of units as well as up-to-date practice in their application.

Chapter 27—Pipe, Fittings, Welding. New tables were added to indicate the suitability of various pipe, tube, and fitting materials for different applications. Characteristics of drainage, waste and vent pipe and tube were discussed in the text and added to the table on dimensions and properties of copper tube.

Chapter 28—Pipe and Industrial Insulation. Typical conductivities of insulating materials were affirmed or revised by the ASHAE Technical Advisory Committee on Insulation.

Chapter 30—Central Systems for Air Conditioning. The chapter was enlarged and largely rewritten with new text and diagrams describing year-round systems, unitary systems, high- and low-pressure induction convectors, and both dual duct and fan coil units.