

has prepared data. Since THE GUIDE is revised annually by men of outstanding ability, this reference book has become the accepted authority in the heating and ventilating field, and has been found indispensable to designers, engineers, architects, contractors and manufacturers who require up-to-the-minute information on all phases of their profession and industry.

The Catalog Data Section has been carefully coordinated with the text, and contains supplementary information on specific materials, equipment and accessories available for heating and ventilating service. In the Catalog Data Section will be found sizes, shapes, capacities, dimensions, space requirements and applications so important to the engineer and contractor in planning, specifying and installing materials and equipment. The two sections are so interlocked that they are practically indispensable to each other, and for the best results it is recommended that the corresponding references in each section be consulted in all cases. The Catalog Data Section is dedicated to the presentation of reliable facts and figures concerning the products shown, eliminating as far as possible unnecessary "sales talk" and comparisons.

Those manufacturers whose catalog data appear in THE GUIDE, pay for the service rendered to them as effective advertising, and the support and cooperation of these manufacturers constitute an important part of the means whereby the AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS is enabled to achieve the publication and wide distribution of THE GUIDE, and to extend its wholly philanthropic services to the general advancement of the profession and its allied industries. Engineering and manufacturing are dependent upon each other and both, jointly, are essential to the general interests of the public.

Of this ninth edition of THE GUIDE, 11,500 copies have been published, and it is the hope of the Guide Publication Committee that this book will surpass in effective service the 1930 edition, of which over 10,000 copies were in use among the profession and the industry at large, as well as in schools where students have found it to be a reliable and practical text book.

Chapter 1

ABBREVIATIONS, SYMBOLS AND DRAFTING STANDARDS

A.S.A. Abbreviations and Symbols; A.S.H.V.E. Drawing Symbols; Drafting Room Practice.

AN *abbreviation* is a shortened expression for a name or a unit. A *symbol* is a letter or a sign used in a formula as a substitute for any numerical value and on a drawing to represent a type of equipment or device or kind of material.

This chapter contains A.S.A.¹ tentative standard abbreviations and symbols, scientific and engineering terms as well as symbols for drawings adopted by the A.S.H.V.E. in its Code of Minimum Requirements for the Heating and Ventilation of Buildings; also some recommended standards for drafting room practice.

ABBREVIATIONS

Abbreviations should be used sparingly in text and with regard to the context and to the training of the reader. Terms denoting units of measure are abbreviated in the text only when preceded by the amounts indicated in numerals; thus *several inches*, *one inch*, *12 in.* In tabular matter, specifications, maps, drawings, and texts for special purposes, the use of abbreviations is governed by the desirability of conserving space.

Do not begin a sentence with a numeral followed by an abbreviation.

Avoid capitals in abbreviations except in words normally capitalized.

Hyphenated compound words usually call for hyphenated abbreviations; thus *ft-lb.* (For the sake of closer agreement with the recommendations of the *International Electrotechnical Commission*, exception to this rule is made in the cases of abbreviations for the names of certain electrical units, as *va* for volt-ampere).

With but few exceptions of abbreviations in common usage, the singular only is used; thus *in.* for *inches*, not *ins.*

Short words such as *ton*, *day*, and *mile* are generally spelled out.

Do not use abbreviations where the meaning will not be clear. In case of doubt, spell out.

The use of conventional signs for abbreviations in text is not recommended; thus *per*, not */*; *lb* not *#*; *in.*, not *"*. Such signs are used sparingly in tables and similar places for conserving space.

The sub-committee endorses the movement which was begun by the International committee on Weights and Measures in omitting the period in abbreviations of metric units and further endorses the growing tendency toward the omission in abbreviations

¹The compilation of these standards is under the supervision of the *American Standards Association*, and the sponsor organizations include: *American Association for the Advancement of Science*; *American Institute of Electrical Engineers*; *American Society of Engineers*; *Society for the Promotion of Engineering Education*, and *American Society of Mechanical Engineers*.

²Proposed American Tentative Standard Abbreviations prepared by Sectional Committee on Scientific and Engineering Symbols and Abbreviations, April, 1930.