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- ⁴⁸ Transient Heat Flow Apparatus for the Determination of Thermal Conductivity, by F. C. Hooper and F. R. Lepper (A.S.H.V.E. TRANSACTIONS, Vol. 56, 1950, p. 309).
- ⁴⁹ Development of Thermal Conductivity Probe, by F. C. Hooper and S. C. Chang (A.S.H.V.E. TRANSACTIONS, Vol. 59, 1953, p. 463).
- ⁵⁰ A Transient Heat Flow Method of Determining Thermal Conductivity: Application to Insulating Materials, by C. P. Lentz (*Canadian Journal of Technology*, June 1952, Vol. 30, p. 153).
- ⁵¹ Tentative Method of Test for Thermal Conductance of and Transmittance of Built-up Sections by Means of Guarded Hot Box (American Society for Testing Materials, ASTM-C-236-49T).
- ⁵² A.S.H.V.E. RESEARCH REPORT No. 685—Measuring Heat Transmission in Building Structures and a Heat Transmission Meter, by P. Nicholls (A.S.H.V.E. TRANSACTIONS, Vol. 30, 1924, p. 65).
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- ⁵⁴ Using the Heat Flow Meter to Study Heat Transfer, by J. T. Gier and R. V. Dunkle (*Refrigerating Engineering*, Vol. 62, No. 10, Oct. 1954, p. 63).
- ⁵⁵ Instruments and Methods for Recording Thermal Factors Affecting Human Comfort, by C. P. Yaglou, A. P. Kratz and C.-E. A. Winslow (Year Book, *American Journal Public Health*, 36-37).
- ⁵⁶ The Thermo-Integrator—A New Instrument for the Observation of Thermal Interchanges, by C.-E. A. Winslow and Leonard Greenburg (A.S.H.V.E. TRANSACTIONS, Vol. 41, 1935, p. 149).
- ⁵⁷ I = B = R Testing and Rating Codes for Low Pressure Heating Boilers, 1947 (*Institute of Boiler and Radiator Manufacturers*).
- ⁵⁸ Commercial Standard for Warm Air Furnaces Equipped with Vaporizing Pot-Type Oil Burners, C.S. 104-26 (*National Bureau of Standards*).
- ⁵⁹ Rapid Determination of Small Amounts of Carbon Monoxide, by Martin Shepherd (*Ind. Eng. Chem. Anal. Ed.* 19, 77: 1947).
- ⁶⁰ Determination of Small Amounts of Carbon Monoxide in Air by Various Reference Methods, by Martin Shepherd (*National Bureau of Standards Journal of Research* 38, 351-8; 1947 R. P. 1777).
- ⁶¹ A Carbon Monoxide Recorder, by S. H. Kratz, D. A. Reynolds, H. W. Frevert and J. J. Bloomfield (*U. S. Bureau of Mines, Technical Paper No. 355*, 1926).
- ⁶² Commercial Standard for Mechanical Draft Oil Burners Designed for Domestic Installations, C.S. 75-42 (*National Bureau of Standards*).
- ⁶³ *Industrial Dust*, by Philip Drinker and Theodore Hatch (McGraw-Hill Book Company, New York).
- ⁶⁴ Testing and Rating of Air Cleaning Devices Used for General Ventilation Work, by S. R. Lewis (A.S.H.V.E. TRANSACTIONS, Vol. 39, 1933, p. 277).
- ⁶⁵ A.S.H.V.E. Code for Testing and Rating Air Cleaning Devices Used in General Ventilation Work, adopted January, 1934 (A.S.H.V.E. TRANSACTIONS, Vol. 39, 1933, p. 225).
- ⁶⁶ A Test Method for Air Filters, by Richard S. Dill (A.S.H.V.E. TRANSACTIONS, Vol. 44, 1938, p. 379).
- ⁶⁷ Analytical Chemistry of Industrial Poisons, Hazards and Solvents, by Morris B. Jacobs (Interscience Publishers, Inc., New York, 1941).
- ⁶⁸ The Determination and Control of Industrial Dust, by J. J. Bloomfield and J. M. Dalla Valle (*U. S. Public Health Bulletin No. 217*, 1935).
- ⁶⁹ Sampling and Analysis of Atmospheric Contaminants, by F. A. Patty (*Industrial Hygiene and Toxicology*, Vol. I, Interscience Publishers, Inc., New York, 1948).
- ⁷⁰ *Electrical Engineer's Handbook*, by Harold Pender and Knox Mellvaine (John Wiley and Sons, New York).
- ⁷¹ *Elements of Acoustical Engineering*, by Harry F. Olson, (D. Van Nostrand Co., New York).
- ⁷² American Tentative Standards for Sound Level Meters for Measurement of Noise and Other Sounds, Z 24.3-1944 (*American Standards Association*).

CHAPTER 53 CODES AND STANDARDS

THE Codes and Standards listed in Table 1 represent accepted practice, methods, or standards prepared and accepted by the organizations indicated. They are valuable guides for the practicing engineer in determining test methods, ratings, performance requirements, and limits applying to equipment used in heating, ventilating, and air conditioning. Copies can usually be obtained from the organization listed in the reference column.

TABLE 1. CODES AND STANDARDS PREPARED AND ACCEPTED BY VARIOUS SOCIETIES AND ASSOCIATIONS

SUBJECT	TITLE	SPONSOR	REFERENCE
Acoustics (Terminology)	American Standard Acoustical Terminology. (1951)	AS of A	ASA Z24.1
Air Conditioning	Code of Minimum Requirements for Comfort Air Conditioning (1938).	ASHVE ASRE	ASHAE
Air Conditioning (120,000 Btu/hr or less)	Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems (1953).	NWAA & ACA	NWAA & ACA Manual No. 7 4th Edition
Air Conditioning (Above 120,000 Btu/hr)	Code and Manual for the Design and Installation of Mechanical Warm Air Heating Systems (1950).	NWAA & ACA	NWAA & ACA Manual No. 9 4th Edition.
Air Conditioning	Standards for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type (1955)	NFPA	NBFU or NFPA No. 90A
Air Conditioning	Standards for the Installation of Residence Type Warm Air Heating and Air Conditioning Systems (1956)	NFPA	NBFU or NFPA No. 90B
Air Conditioning (Equipment)	ASRE Standard Methods of Rating and Testing Air Conditioning Equipment (1942).	ASRE ASHVE NEMA RMA ACMA	ASRE regular No. 13-42
Air Conditioners	ASRE Standard Methods of Rating and Testing Air Conditioners (1949). (Supersedes ASRE Circular 13-42)	ASRE	ASRE Standard 16-56
Airplane	Air Conditioning Equipment, Airplane—General Requirements for (1948).	SAE	SAE ARP 83B
Airplane	Heaters, Airplane, Internal Combustion Heat Exchanger Type (1949).	SAE	SAE ARP 143B.
Airplane	Heaters, Airplane, Steam Type	SAE	SAE ARP 87.
Attic Ventilation	Residence Ventilation Guide (1950).	PFMA	PFMA
Boilers	I=B=R Testing and Rating Code for Low Pressure Cast Iron Heating Boilers, 5th Edition, 1952, amended 1956.	IBR	IBR
Boilers	Net Load Recommendations for Heating Boilers. Publ. semi-annually.	HP & ACCNA	MCAA
Boilers	Net Square Feet Radiation Loads in 70 Deg. Fahr. Recommended for Low Pressure Heating Boilers (1948).	HP & ACCNA	MCAA
Boilers	ASME Boiler Construction Code for Low Pressure Heating Boilers (1952 with 1954 Addenda).	ASME	ASME
Boilers	ASME Boiler and Pressure Vessel Code (1952, 8 Vol.).	ASME	ASME