

HEATING VENTILATING AIR CONDITIONING GUIDE 1944

TABLE 4. STATE CODES, STANDARDS OR LAWS RELATING TO THE HEATING, VENTILATING OR AIR CONDITIONING OF BUILDINGS—(Concluded)

STATE	CODES, STANDARDS OR LAWS	WHERE MATERIAL CAN BE OBTAINED
NORTH DAKOTA	None.	
OHIO	Ohio State Building Codes: No. 102 Theaters and Assembly Halls (1940); No. 103 School Buildings (1938); No. 105 Churches (1938); No. 106 Hospitals and Homes (1936); No. 107 Hotels and Apartments (1940); No. 108 Public Garages (1938); No. 109 (1941); Workshops, Factories, Mercantiles and Office Buildings.	Dept. of Industrial Relations, Div. of Factory and Building Inspection, Columbus.
OKLAHOMA	Bureau of Factory Inspection Bulletin No. 7-A, containing the laws governing the inspection and regulation of factories or other places where labor is employed. Bureau of Factory Inspection Book No. 11-A—Petroleum Industry Safety Standards.	Dept. of Labor, Oklahoma City.
OREGON	General Safety Manual; Logging Safety Code; Sawmill and Woodworking Safety Code; Safety Code for Construction Work; Electrical and Communication Workers Safety Code; Safety Code for Arc Welding, Sandblasting and Spray Painting Operations.	Industrial Accident Commission, Salem.
	State laws and regulations relating to school buildings, sanitation, plumbing, heating and ventilation, including factory inspections.	Bureau of Labor, State Library Building, Salem.
PENNSYLVANIA	Regulations For: Abrasive and Polishing Wheels; Bedding and Upholstery; Brewing and Bottling; Canneries; Cereal Mills, Malt Houses and Grain Elevators; Construction and Repairs; Dry Cleaning; Dry Color Industry; The Storage, Handling and Use of Explosives; Electric Safety Code; Fire and Panic Regulations; Foundries; General Safety Act; Industrial Sanitation; Lead Manufacturing; Paint Grinding; Regulations for Labor Camps; Laundries; Lead Corroding and Lead Oxidizing; Logging, Sawmill, Woodworking, Veneer and Coopersage Operations; Mines other than Coal Mines; Miscellaneous Hazards and Conditions of Employment; the Manufacture of Nitro and Amido Compounds; Plants Manufacturing or Using Explosives; Printing and Allied Industries; Spray Coating; Tunnel Construction and Work in Compressed Air; Textile Industries.	Dept. of Labor and Industry, Harrisburg.
RHODE ISLAND	Rhode Island Labor Laws (1942).	Dept. of Labor, State House, Providence.
SOUTH CAROLINA	None.	
SOUTH DAKOTA	State Code, Chapter 13.2018 Care of Steam Boilers; Chapter 27.1711 Ventilation of Hotels, Rooming Houses, Restaurants, Tourist Camps.	Office of State Engineer, Pierre.
TENNESSEE	Williams Code of Tennessee, Sections 5341-5343, which deal with the ventilation of workshops and factories, places of amusement, etc.	Secy. of State, Nashville.
TEXAS	School Building Law, Bulletin 382, February, 1938, Article No. 2920, No. 2921, No. 2922.	Dept. of Education, Austin.
UTAH	35-1-16. Sanitary Code for Public Buildings and Railway Cars; 35-1-17. Supervision of Bathing Places.	Dept. of Engineering, 439 State Capitol Bldg., Salt Lake City.
VERMONT	Public Laws Rules and Regulations Relating to Public Buildings, Sanitation, Plumbing, Heating and Ventilation (1941).	State Board of Health, Burlington.
VIRGINIA	Mining Laws of State of Virginia have provisions regarding ventilation in mines.	Dept. of Labor and Industry, Finance Bldg., Richmond.
WASHINGTON	General Safety Standards: Standard No. 49 Blower and Exhaust Systems; No. 50 Respirators, Helmets, etc.; No. 51 Carbon Monoxide Gas; No. 49 Ventilation; No. 210 Laundry Ventilation; No. 154 Dry Cleaning with Volatile, Inflammable or Explosive Liquids. Coal Mining Laws; Occupational Disease Code; Metal Mine Standards; Safety of Persons Employed in Tunnels, Quarries, Caissons or Subways; Construction Code.	Dept. of Labor and Industries, Olympia.
WEST VIRGINIA	Installation Regulations for Power Boilers.	Dept. of Labor, Charleston.
WISCONSIN	Heating, Ventilation and Air Conditioning Code (1939). Applies to public buildings and places of employment. General Orders on Spray Coating (1939). General Orders on Dusts, Fumes, Vapors and Gases (1941).	Industrial Commission of Wisconsin, Madison.
WYOMING	None.	

CHAPTER 49

Marine Heating and Ventilation

General Considerations, Ship Construction Features, Factors Affecting Design, Requirement for Various Types of Space, Ship Insulation

THE importance of adequate shipboard heating and ventilation arrangements cannot be overemphasized. Installations must not only keep the passengers comfortable and the operating personnel physically fit and mentally capable of maintaining the ship as a profitable business investment, but must also satisfy the human element. The provision of satisfactory living and working conditions is one of the most economical means of keeping a high morale.

GENERAL CONSIDERATIONS

Unlike a shore establishment in connection with which personnel obtain their food, rest and recreation from outside sources, a ship must be self-sufficient and provide for all human needs. Accordingly, every vessel is a complete, independent community comprising, at least to some degree, the facilities available in the average urban development. These facilities must be contained in the minimum practicable space and weight to conserve dead weight and increase the pay load. The pay load may be expressed in terms of cargo carrying ability, passenger carrying capacity, fighting strength, or towing ability.

An atmosphere compatible with efficient operation must be maintained in working and machinery spaces, and temperatures must be such that materials or equipment will not be damaged. Conditions in living spaces, whether ashore or afloat, must permit adequate rest and comfort of occupants. Passenger accommodations must be treated to provide service and living conditions similar to those afforded by the various classes of hotels. Many of the expedients used ashore for this purpose are not applicable afloat. For instance, all living quarters aboard ship cannot be located at a distance from the power plant; but must often have boundaries in common with heat producing spaces. The thermal conductivity of shipbuilding materials such as steel, copper, brass, etc., is many times the value for building materials used ashore, and this, together with concentrated arrangement of equipment, produces a difficult heat transfer and insulation problem. Furthermore, the use of portholes, windows, skylights, and similar openings is greatly restricted in marine applications because of the necessity for strength, water-tightness and protection from the sea in foul weather. During wartime, the utility of