

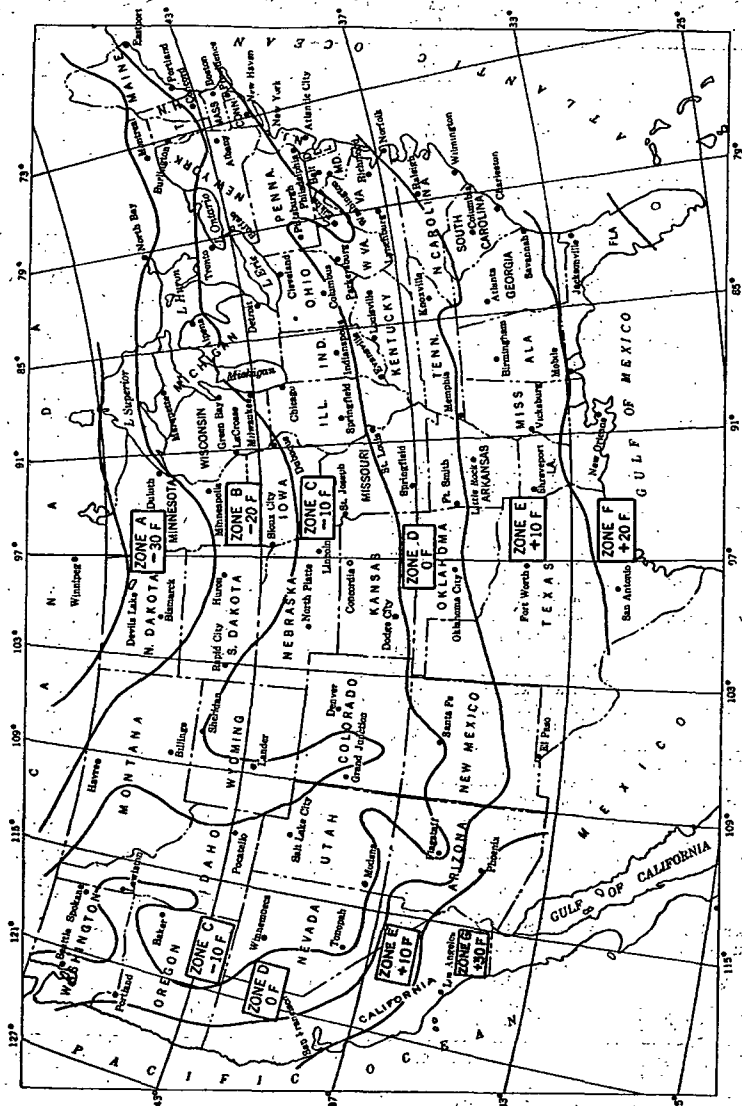


FIG. 1. DESIGN TEMPERATURE ZONE MAP

in some instances, due to local conditions of altitude or exposure, the design temperatures may vary somewhat from those indicated.

The A.S.H.V.E. Technical Advisory Committee on Weather Design Conditions has recommended the adoption for heating of an outside design temperature which is equalled or exceeded during 97½ per cent

of the hours in December, January, February, and March, but the work of compiling the various local temperatures is not yet completed.

INSIDE TEMPERATURES

The inside air temperature which must be maintained within a building is understood to be the dry-bulb temperature at the breathing line, 5 ft above the floor, or the 30-in. line, and not less than 3 ft from the outside walls. Inside air temperatures, usually specified, vary in accordance with the use to which the building is to be put and Table 2 presents values which conform to good practice.

TABLE 2. WINTER INSIDE DRY-BULB TEMPERATURES USUALLY SPECIFIED*

TYPE OF BUILDING	DEG F	TYPE OF BUILDING	DEG F
SCHOOLS—		THEATERS—	
Class rooms.....	70-72	Seating space.....	68-72
Assembly rooms.....	68-72	Lounge rooms.....	68-72
Gymnasiums.....	55-65	Toilets.....	68
Toilets and baths.....	70		
Wardrobe and locker rooms.....	65-68	HOTELS—	
Kitchens.....	66	Bedrooms and baths.....	70
Dining and lunch rooms.....	65-70	Dining rooms.....	70
Playrooms.....	60-65	Kitchens and laundries.....	66
Natatoriums.....	75	Ballrooms.....	65-68
		Toilets and service rooms.....	68
HOSPITALS—		HOMES.....	70-72
Private rooms.....	70-72	STORES.....	65-68
Private rooms (surgical).....	70-80	PUBLIC BUILDINGS.....	68-72
Operating rooms.....	70-95	WARM AIR BATHS.....	120
Wards.....	68	STEAM BATHS.....	110
Kitchens and laundries.....	66	FACTORIES AND MACHINE SHOPS.....	60-65
Toilets.....	68	FOUNDRIES AND BOILER SHOPS.....	50-60
Bathrooms.....	70-80	PAINT SHOPS.....	80

*The most comfortable dry-bulb temperature to be maintained depends on the relative humidity and air motion. These three factors considered together constitute what is termed the *effective temperature*. (See Chapter 12.) When relative humidity is not controlled separately, optimum dry-bulb temperature for comfort will be slightly higher than shown in Table 2.

The proper dry-bulb temperature to be maintained depends upon the relative humidity and air motion, as explained in Chapter 12. In other words, a person may feel warm or cool at the same dry-bulb temperature, depending on the relative humidity and air motion. The optimum winter *effective temperature* for sedentary persons, as determined at the A.S.H.V.E. Research Laboratory, is 66 deg.

As explained in Chapter 12 for so-called still air conditions, a relative humidity of approximately 50 per cent is required to produce an effective temperature of 66 deg when the dry-bulb temperature is 70 F. However, even where provision is made for artificial humidification, the relative humidity is seldom maintained higher than 40 per cent during the extremely cold weather, and where no provision is made for humidification, the relative humidity may be 20 per cent or less. Consequently, in using the figures listed in Table 2, consideration should be given to whether provision is to be made for humidification and, if so, the actual relative humidity to be maintained.

Temperature at Proper Level: In making the actual heat loss computations, however, for the various rooms in a building it is often necessary