

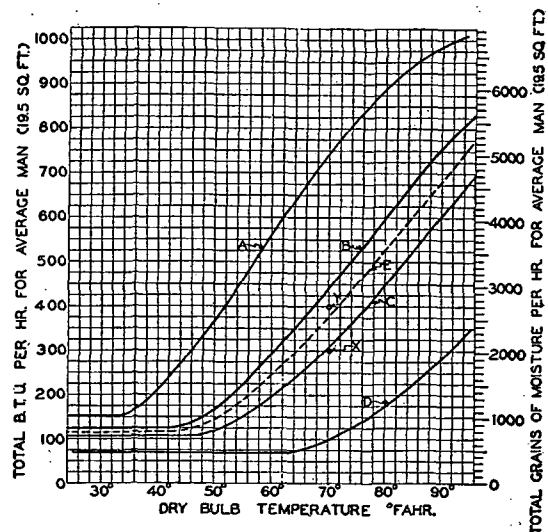


FIG. 10. LATENT HEAT AND MOISTURE LOSS FROM THE HUMAN BODY BY EVAPORATION, IN RELATION TO DRY-BULB TEMPERATURE FOR STILL AIR CONDITIONS^a

^aCurve A—Men working 66,150 ft-lb per hour. Curve B—Men working 33,075 ft-lb per hour. Curve C—Men working 16,538 ft-lb per hour. Curve D—Men seated at rest. Curves A and C drawn from data at a dry-bulb temperature of 81.3 F only and extrapolating the relation between Curves B and D which were drawn from data at many temperatures.

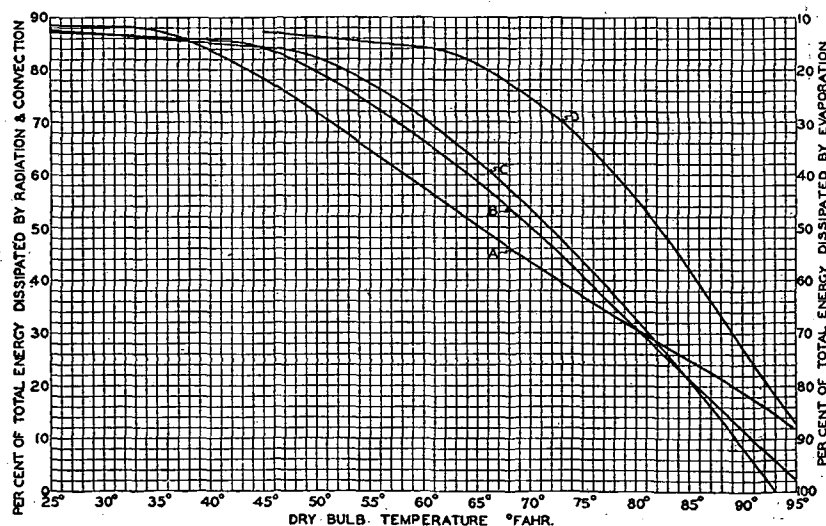


FIG. 11. HEAT LOSS FROM THE HUMAN BODY BY EVAPORATION, RADIATION AND CONVECTION IN RELATION TO DRY-BULB TEMPERATURE FOR STILL AIR CONDITIONS^a

^aCurve A—Men working 66,150 ft-lb per hour. Curve B—Men working 33,075 ft-lb per hour. Curve C—Men working 16,538 ft-lb per hour. Curve D—Men seated at rest. Curves A and C drawn from data at a dry-bulb temperature of 81.3 F only and extrapolating the relation between Curves B and D which were drawn from data at many temperatures.

Although heat and moisture from the human body constitute the major portion of the cooling load, in most cases where air conditioning is provided for comfort and health other factors must also be considered. These include heat from lights, machinery, and processes, as well as the transmission and infiltration of heat through the building structure. The computations for these factors may be made in accordance with data given in Chapters 5 and 7.

TABLE 4. CONDITION OF SENSIBLE PERSPIRATION FOR PERSONS SEATED AT REST UNDER VARIOUS ATMOSPHERIC CONDITIONS^a

DEGREE OF PERSPIRATION ^a	ATMOSPHERIC CONDITION					
	95 Per Cent Relative Humidity			20 Per Cent Relative Humidity		
	E. T.	D. B.	W. B.	E. T.	D. B.	W. B.
Forehead clammy.....	73.0	73.6	72.4	75.0	87.0	60.7
Body clammy.....	73.0	73.6	72.4	75.0	87.0	60.7
Body damp.....	79.0	79.7	78.4	81.0	97.5	67.5
Beads on forehead.....	80.0	80.8	79.4	87.0	109.4	75.2
Body wet.....	84.5	85.4	84.0	86.5	108.5	74.6
Perspiration on forehead runs and drips.....	88.0	89.0	87.6	94.0	125.2	85.4
Perspiration runs down body.....	88.5	89.5	88.1	90.0	116.0	79.5

^aForty per cent of subjects registered degree of perspiration equal to or greater than indicated.

TABLE 5. CONDITION OF SENSIBLE PERSPIRATION FOR PERSONS AT WORK UNDER VARIOUS ATMOSPHERIC CONDITIONS

DEGREE OF PERSPIRATION ^a	ATMOSPHERIC CONDITION					
	95 Per Cent Relative Humidity			20 Per Cent Relative Humidity		
	E. T.	D. B.	W. B.	E. T.	D. B.	W. B.
Forehead clammy.....	59.0	59.4	58.3	69.5	80.5	56.5
Body clammy.....	50.0	50.2	49.3	57.0	61.6	44.2
Body damp.....	60.0	60.3	59.3	62.5	69.6	49.5
Beads on forehead.....	68.0	68.5	67.5	76.0	91.0	63.4
Body wet.....	69.0	69.6	68.5	71.0	82.8	53.0
Perspiration on forehead runs and drips.....	78.5	79.3	78.0	82.0	100.5	70.2
Perspiration runs down body.....	79.0	79.8	78.5	81.0	99.8	69.0

^aForty per cent of subjects registered degree of perspiration equal to or greater than indicated.

In many cases, allowance must also be made for sun effect and for heat capacity of the building structure in accordance with studies by the A.S.H.V.E. Research Laboratory³⁷. Another item to be considered is the radiant heat received by the body from high temperature wall and ceiling surfaces.

³⁷Heat Transmission as Influenced by Heat Capacity and Solar Radiation, by F. C. Houghten, J. L. Blackshaw, E. M. Pugh, and Paul McDermott (A.S.H.V.E. TRANSACTIONS, Vol. 38, 1932).