TABLE 25. RATE OF HEAT GAIN FROM APPLIANCES WITHOUT HOODS[a, b]
(CONCLUDED)

APPLIANCE	CAPACITY	OVER-ALL DIMENSIONS (LESS LEGS AND HANDLES; LAST DIMENSION IS HEIGHT) INCHES	CONTROL A—AUTOMATIC M—MANUAL	MISCELLANEOUS DATA	MANUFACTURER'S RATING WATTS	BTU/HR	MAINTAINING RATE BTU PER HOUR	RECOMMENDED RATE OF HEAT GAIN BTU PER HOUR		
								SENSIBLE	LATENT	TOTAL
Miscellaneous Electrical Appliances										
Hair Dryer, Blower Type			M	Fan, 165 w; Low, 915 w; High, 1580 w	1680	5400		2300	400	2700
Hair Dryer, Helmet Type			M	Fan, 80 w; Low, 300 w; High, 710 w	705	2400		1870	330	2200
Permanent Wave Machine			M	60 heaters at 25 w each, 36 in normal use	1500	5000		850	150	1000
Neon Sign, per linear ft of tube				½ in. outside diam. ⅝ in. outside diam.				30 60		30 60
Sterilizer, Instrument			A	For physicians; thermostat cuts off 550 w before boiling	1100	3750		650	1200	1850
Miscellaneous Gas-Burning Appliances										
Burners, Laboratory Small Bunsen Small Bunsen Fishtail Large Bunsen		 ⅛ in. Barrel ⅛ in. Barrel ⅛ in. Barrel 1½ in. Mouth	 M M M M	 Manufactured Gas Natural Gas Manufactured Gas Natural Gas Adjustable orifice		 1800 3000 3500 5500 6000		 960 1080 1960 3080 3350	 240 420 490 770 850	 1200 2100 2450 3850 4200
Cigar Lighter			M	Continuous Flame		2500		900	100	1000
Hair Dryer, 5 helmets			A	Heater and fan blowing air to helmets		33000		15000	4000	19000
Stoves, Oven				Insulated, modern Not insulated		25000 25000	6000 8500	7200 9200	1800 2300	9000 11500

[a] For restaurant appliances, miscellaneous electrical and miscellaneous gas burning appliances.
[b] When these appliances are hooded and provided with adequate exhaust, use 50 per cent of recommended rate of heat gain from unhooded appliances.

with a positive fan exhaust system through the hood, 50 per cent of the heat will be carried away and 50 per cent dissipated in the space to be conditioned. The same effectiveness of the hood should be figured for both latent and sensible heat.

LOAD FROM MOISTURE TRANSFERRING THROUGH PERMEABLE BUILDING MATERIALS

The diffusion of moisture through all common building materials is a natural phenomenon which is always present to a greater or lesser degree.

The permeability values for various building materials are given in Table 19 of Chapter 9, together with an explanation of moisture transmission through these materials.

In the usual comfort air-conditioning application, it is common practice to neglect moisture transfer through walls, for the actual rate is quite small and the corresponding latent-heat load is hardly significant. So-called *vapor barriers* are frequently employed in modern construction for the purpose of keeping moisture transfer to a minimum, particularly because of the deteriorating and insulation-destroying effects of moisture.

Industrial jobs, on the other hand, frequently call for a low moisture content to be maintained in a conditioned space. Here the matter of moisture transfer cannot be neglected; indeed, it is quite possible to have the latent-heat load accompanying this transfer be of greater magnitude than any other latent-heat load. The equation for computing this load is:

$$\left(\frac{q_m}{A}\right) = \frac{\mu}{7000} \times \begin{pmatrix}\text{Vapor Pressure}\\ \text{Difference, In. Hg}\end{pmatrix} \times 1076, \text{ Btu per (hr) (sq ft).} \qquad (18)$$

where μ = permeability grains per (sq ft) (hr) (in. Hg).

7000 = grains per pound.

The factor 1076 is defined in list of symbols at Equation 15. (Sensible cooling of the water vapor is included in the factor 1076.)

The only means of preventing moisture transfer is to use a vapor proof wall, or to apply a special lining, which is vapor proof. All openings in moisture proof construction must be equipped with special gaskets to prevent entrance of moisture.

When moisture transfer contributes an appreciable part of the latent-heat load, it is recommended that estimates should be made intentionally liberal in order to avoid later difficulties with insufficient dehumidifying capacity. Storage spaces, for example, would require sufficient dehumidifying capacity to handle the moisture brought in with goods to be stored, in addition to moisture leaking in subsequently.

MISCELLANEOUS HEAT LOADS

This designation is intended to cover the various small heat gains from exposed piping, ducts, work done by circulating fan, and unforeseen contingencies. Where sufficient data are available these various heat gains may be estimated individually. In the majority of cases, however, common practice is to lump these factors together and combine them with a *safety factor* according to the experience and judgment of the estimator. On this basis, a small safety factor is added to the calculated cooling load to compensate for miscellaneous effects. No rules can be given for this procedure, as experience in air conditioning is indispensable for application of suitable safety factors.