

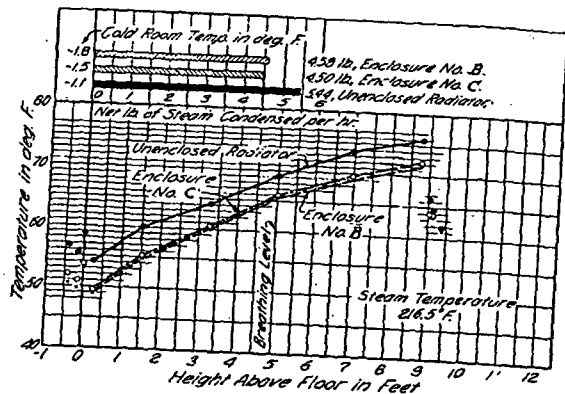


FIG. 4. ROOM TEMPERATURE GRADIENTS AND STEAM CONDENSING RATES FOR RADIATOR WITH IMPROPERLY DESIGNED ENCLOSURES

improperly designed enclosures. The effect of a well designed shield placed above the radiator is shown by Fig. 5. The performance obtained by use of the shield was satisfactory as the condensation rate was decreased by 11 per cent, the temperatures above the breathing line were reduced, the temperatures below the breathing line were unchanged, and slightly higher temperatures were obtained below the breathing line. The effect of a cloth cover (Fig. 6) extending downward 6 in. from the top of the radiator was to make the radiator performance unsatisfactory and inadequate. The design and performance of radiator enclosures should be carefully studied when radiation is to be selected for use with enclosures or when enclosures are to be applied to existing radiators.

Care must be exercised to follow certain rules in designing enclosures, the most important of which are:

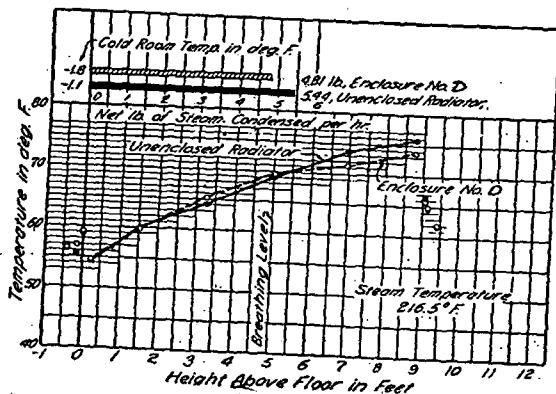


FIG. 5. ROOM TEMPERATURE GRADIENT AND STEAM CONDENSING RATE FOR RADIATOR WITH SHIELD

1. Enclosures should be insulated with 1 in. magnesia or asbestos block, lined with bright tin or non-corrosive sheet metal, placed next to the conductor.
2. The surface of the conductor should be painted flat black, maroon japan, white enamel or white zinc. If the conductor is entirely concealed it may be unpainted.
3. The free area of the grille or opening at the outlet should be not less than the free area through the sections of the conductor.
4. The free area of the grille or opening at the inlet should be not less than 80 per cent of the free area at the outlet.
5. If the outlet is in the face of the enclosure so that the air flow is horizontal, the free area of the outlet should be at least 150 per cent of the free area about the conductor, and the clear height between the top of the conductor and the underside of the top of the enclosure should be not less than the depth of the enclosure.
6. Best results are obtained with a tight fitting enclosure, provided the free area about the conductor at point of greatest restriction is not excessive. As a general rule the efficiency of the conductor is inversely proportional to the depth of the enclosure.

TYPES OF HEATERS

Types, sizes, and heat emission for tube conductors and for the various other forms of cabinet convectors and for the extended surface-blast

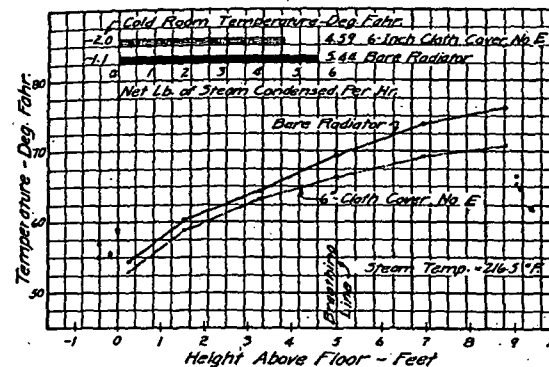


FIG. 6. ROOM TEMPERATURE GRADIENTS AND STEAM CONDENSING RATES FOR RADIATOR WITH A CLOTH COVER

convectors now on the market, are not sufficiently well standardized to give heat-emission tables applicable to all makes of a given type. For such information the reader is directed to manufacturers' guarantee in the catalog data section of THE GUIDE and elsewhere.

Pipe Coil Convectors

Table 3 has been developed by a method of deduction from the available data on such experimental work on pipe coils as has been recorded, and does not represent definite experimental results of tests.

Cast-Iron Gravity Indirect Convectors

Table 4 gives the cubic feet of air per hour (measured at 70 deg. fahr.) usually allowed per square foot of heating surface, through cast-iron gravity indirect convectors.