

TECHNICAL BRIEFS

ENGINEERING DEVELOPMENTS HERE AND
ABROAD DIGESTED FOR RULY POWER MEN

HEATING AND AIR CONDITIONING

Industrial Process Ventilation, by William N. Witheridge, General Motors Corp. This paper discusses "the special branch of air conditioning dealing with mechanical and chemical control of air contaminants traceable to industrial processes."

The author classifies methods of process ventilation and illustrates some, Fig. 2. In addition there are comments on general and local ventilation, methods of reinforcing ventilation rates, successive ventilation systems and short circuits in air movements. Fig. 1 shows the way flanges and baffles increase zone of influence of exhaust openings. *ASHVE Journal*, Dec. 1947.

A New Method for Selecting Winter Design Temperatures, by Clark M. Humphreys, American Society of Heating and Ventilating Engineers Research Labs. Heating systems are designed to maintain a given temperature inside a building when the temperature is at some low point previously experienced a number of times, but not so low as the lowest temperature of record. Gener-

ally, design temperature for a locality is based on experience with no consistent pattern for selection.

The author feels outside design temperature is too important to be determined by rule of thumb. This temperature should indicate, with fair accuracy, the lowest temperature likely to prevail long enough or often enough to justify consideration.

A table of frequency of occurrence of low temperatures for 120 cities was given as the basis for selecting design temperature. A further suggestion called for designing heating systems on the under side rather than oversizing them. This gives better control, lower first cost, more efficient operation. *ASHVE Paper*. (See p. 130 for instructions on ordering paper.)

Use of Climatological Data in Heating and Cooling Design, by H. E. Landsberg, director, Committee of Geophysical Sciences, Joint Research and Development Board, Washington, D. C. Normal weather data should not be interpreted as applying to usual conditions, which are much less important than frequency distribution of data.

For instance, usual winter design temperature in Washington, D. C. is zero degrees F. This temperature has

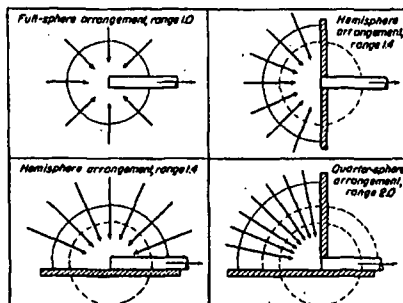
occurred only three times in 48 years. A design temperature of 10 F. would take care of 99.9% of all times.

Heating engineers should bear in mind that in hilly country microclimatic differences within a few miles are quite important. Suburban area temperature can differ as much as 8 degrees F. from that at metropolitan weather stations. *ASHVE Paper*.

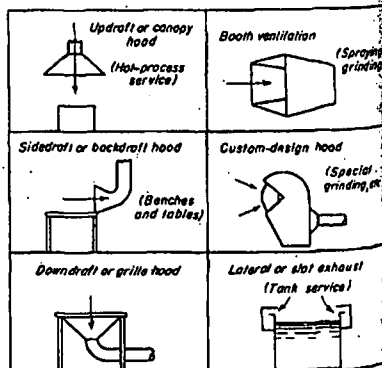
An Improved Test Method for Rating Air Filters, by R. S. Farr, W. N. Palmer, K. A. Crismon, Los Angeles, Calif. Manufacturers should furnish performance curves containing complete families of curves for buyers of air filters. In the opinion of the authors, in addition, they advance requirements of an air-filter testing method and then propose a test code.

A good testing method embodies eliminating the variables other than dust. The authors developed a duct, dust feeder and dust sampler which allows test dust to be evenly distributed within $\pm 5\%$ and the air velocity within 15 to 20%. Simultaneous dust sampling is used.

All test data should be plotted in full. Only complete curves or families of curves at various velocities, or test data using various specified dust



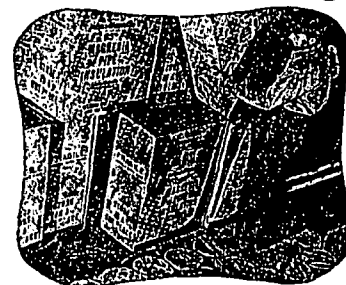
1, above. Here are four flange and baffle arrangements to increase the zone of influence. 2, right. Six methods for ventilating industrial processes to remove the waste fumes



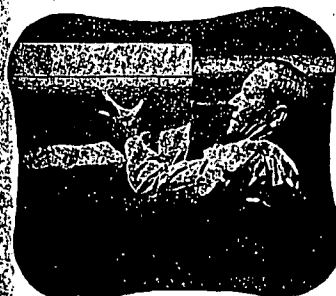
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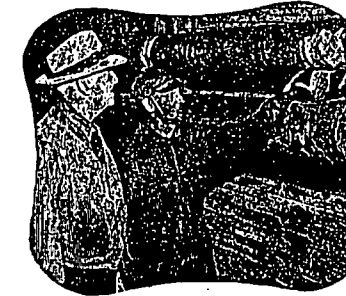
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