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985 Discharge Electrodes and Electrostatic Precipitators. J. S. Lagarias. J. Air Pollution Control Assn. 10, 271-274 (Aug. 1960).

Discharge electrodes are made in many shapes and of different materials depending upon the application involved. Factors which must be considered include the type of dust, operating temperature, corrosion, and ozone generation. The efficiency of a precipitator is shown to depend on the total power input and is especially sensitive to the discharge current. Laboratory and field data verify the use of barbed discharge electrodes to improve precipitator efficiency. -- Author's summary

PHYSICAL ASPECTS OF THE ENVIRONMENT

986 Effects of High and Low Humidity on Heat Exchange of Lightly Clothed Men. P.F. Iampietro and E. R. Buskirk. J. Appl. Physiol. 15, 212 (1960).

Although it is common experience that the sensation of chill seems greater on cold humid days than on days when the air is dry, previous studies on nude subjects conducted by these and other investigators failed to show a significant difference in body heat loss to cold humid air compared with dry air at the same temperature. To test the hypothesis that humidity may exert its affect by altering heat exchange through clothing, the present study repeated the earlier tests using 6 male subjects dressed in cotton garments consisting of socks, underwear, shirt, and trousers, together with low shoes. The resting subjects were exposed for 2 hours at different combinations of air temperatures (50° and 40°F), humidities (100 and 30%), and air movements (10 and less than 1 mph). Rectal temperature, skin temperature, and metabolic rate measured during exposure revealed significant differences in heat loss and heat production related to air temperature and air movement but no influence of humidity on heat exchange could be detected. The authors suggest that the increased sensation of chill on cold, wet days may be related to other climatic factors such as overcast with reduced solar radiation or to alterations in heat balance associated with changes in activity. -- J. Occ. Med. Absts.

987 Is Humidity Important in the Temperature Comfort Range? W. Koch, B. H. Jennings and C. M. Humphreys. J. Am. Soc. Heating, Refrigeration and Air-Conditioning Engrs. 2, 63 (Apr. 1960).

Since 1923 engineers have used the Effective Temperature (E.T.) Scale of Houghten and Yaglou as a guide in designing air-conditioning systems for human comfort. All combinations of air temperature, humidity, and air movement which produce an immediate thermal sensation equivalent to that of a reference environment in which the air is 100% saturated and without movement are said to have the same E.T., which is defined as the air temperature of the reference environment. In general, the lower the humidity the higher is the air temperature required to give the same E.T. For some years, however, there have been indications that the normal scale of E.T. overemphasizes the role of humidity in the comfort zone. This paper provides experimental support for this view. Groups of young adult male and female subjects sitting quietly in light clothing were exposed for periods of 3 3/4 hours to different combinations of dry and wet bulb temperature at air movements less than 20 fpm. Each half-hour, subjective reactions to the thermal environment were recorded on a 7-point scale, 4 representing comfort. Attainment of thermal equilibrium required up to 3 hours. Plotted on linear coordinates of dry and wet bulb temperature, the regression line for group mean scores for optimum comfort was a straight line extending from 77.6°F dry bulb at 30% relative humidity to 76.5°F at 85% relative humidity. By contrast, the E.T. line for 71° requires a change of 7.7° dry bulb for the same humidity range. The larger influence of humidity on the immediate sensory response on which the E.T. scale is based is believed to result from humidity effects on heat absorption or loss from clothing fabrics. These effects are transient and disappear during prolonged exposure.
-- Cond. from J. Occ. Med. Absts.

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