

Elimination of Static Electricity

The presence of static electricity is very detrimental to the satisfactory and economical processing of many light materials, such as textile fibers, paper, etc. It is also extremely dangerous where explosive atmospheres or materials are present. Fortunately, this hazard is easily eliminated by increasing the relative humidity.

In attempting to eliminate static electricity, it must be borne in mind that for successful elimination the air that actually comes in contact with the material in the machine must be at a relative humidity of 50 per cent or more. As some machines consume a great deal of power which is converted directly into heat, the temperature in the machine may be considerably higher than the temperature adjacent to the machine where the relative humidity is normally measured. In such cases, the relative humidity in the machine will be appreciably lower than that elsewhere in the room, and it may be necessary to maintain a room relative humidity of 65 per cent, or even more, before the desired results can be obtained.

CALCULATIONS

The methods for determining the proper heating and cooling loads for the various industrial processes are similar to those outlined in Chapters 14 and 15. Because of the large number of motors and heat producing units usually prevalent in an industrial application, it is particularly important that operating allowances for the latent and sensible heat loads be definitely ascertained and used in the calculations to determine the total design load.

REFERENCE

¹—The Present Status of Textile Regain Data, by A. E. Stacey, Jr. (*National Association of Cotton Manufacturers*, 1927).

BIBLIOGRAPHY

FOOD

Air Conditioning for Sausage Manufacturing Plants, by M. G. Harbula (A.S.H.V.E. TRANSACTIONS, Vol. 28, 1922, p. 343).

Air Conditioning in the Bakery, by W. L. Fleisher (A.S.H.V.E. TRANSACTIONS, Vol. 37, 1931, p. 141).

Proper Air Conditions for the Manufacturing of Confections, by A. E. Stacey, Jr. (A.S.H.V.E. JOURNAL SECTION, *Heating, Piping and Air Conditioning*, October, 1937, p. 640).

Air Conditioning and Refrigerating Large Bakeries, by W. L. Fleisher (*Heating, Piping and Air Conditioning*, December, 1929, p. 621; January, 1930, p. 24).

Pre-Cooling Fruits and Vegetables with Circulating Air, by C. E. Baker (*Heating, Piping and Air Conditioning*, January, 1932, p. 42).

Air Conditioning Maintains Quality of Fruits and Vegetables, by C. E. Baker (*Heating, Piping and Air Conditioning*, August, 1935, p. 369).

Air Condition the Bakery Throughout, by W. W. Reece (*Heating, Piping and Air Conditioning*, August, 1936, p. 149).

Banana Ripening Manual, Circular No. 14, Equipment Department, Fruit Dispatch Co., New York, N. Y.

The Commercial Storage of Fruits, Vegetables and Florists' Stocks, by D. H. Rose, R. C. Wright and T. M. Whiteman (*U. S. Department of Agriculture, Circular No. 278*).

Temperature Studies of Some Tomato Pathogens, by Alice A. Nightingale and G. W. Ramsey (*U. S. Department of Agriculture Technical Bulletin No. 520*, August, 1936).

Refrigeration of Oranges, by H. M. Hendrickson (Application Data Section No. 17, *Refrigerating Engineering*, September, 1940).

Refrigeration of Lemons and Grapefruit, by H. M. Hendrickson (Application Data Section No. 18, *Refrigerating Engineering*, October, 1940).

PRINTING

Hygro-Xylometric Control of Air Conditioning, by H. H. Tunis (A.S.H.V.E. JOURNAL SECTION, *Heating, Piping and Air Conditioning*, November, 1937, p. 637).

Air Conditioning of Press Rooms, by I. C. Baker (*Heating, Piping and Air Conditioning*, July, 1931, p. 553).

Newspaper Plant Air Conditioned for Efficient Production, by J. A. Osborn (*Heating, Piping and Air Conditioning*, January, 1932, p. 40).

Air Conditioning Frees Rotogravure Plant from Weather Hazards, by H. E. Jacobsen (*Heating, Piping and Air Conditioning*, September, 1935, p. 423).

Bureau of Standards Studies Determine Press Room Conditioning Requirements, by C. G. Weber (*Heating, Piping and Air Conditioning*, March, 1936, p. 137).

Silica Gel Air Conditioning System Serves Rotogravure Printing Plant, by H. E. Ryerson (*Heating, Piping and Air Conditioning*, August, 1937, p. 497).

Moisture Control by Liquid Absorption Offers a Useful Air Conditioning Tool, by F. M. Johnson (*Heating, Piping and Air Conditioning*, December, 1938, p. 782).

Meeting the Air Requirements in a Bindery and Printing Plant, by N. W. Downes (*Heating and Ventilating*, February, 1921, p. 25).

Heating and Ventilating the Bureau of Engraving and Printing (*Heating and Ventilating*, February, 1923, p. 55).

Humidity in the Pressroom (*Heating and Ventilating*, May, 1932, p. 35).

Dehumidifying with Gas in a Printing Plant (*Heating and Ventilating*, May, 1935, p. 31).

Air Conditioning in the Paper Industry (*Heating and Ventilating*, October, 1935, p. 23).

Air Conditioning the Newspaper Plant, by R. T. Williams (*Heating and Ventilating*, September, 1937, p. 63).

Air Conditioning Requirements of Multicolor Offset Printing, by C. G. Weber (*Refrigerating Engineering*, December, 1936, p. 6).

A Study of the Removal of Sulphur Dioxide from Library Air, by A. E. Kimberly and A. L. Emley (*U. S. Bureau of Standards Miscellaneous Publication*, No. 142, October 17, 1933).

Reactions of Lithographic Papers to Variations in Humidity and Temperature, by C. G. Weber and L. W. Snyder (*U. S. Bureau of Standards Journal Research*, January, 1934).

The Treatment of Offset Papers for Optimum Register, by C. G. Weber and M. N. V. Geib (*U. S. Bureau of Standards Journal Research*, February, 1936).

Summary Report of National Bureau of Standards Research on Preservation of Records, by A. E. Kimberly and B. W. Scribner (*U. S. Bureau of Standards Miscellaneous Publication*, No. 154, March 16, 1937).

MISCELLANEOUS

Effect of Air Conditioning upon Munitions, by J. I. Lyle (A.S.H.V.E. TRANSACTIONS, Vol. 23, 1917, p. 383).

Air Conditioning of Blackout Plants, by W. A. Grant (A.S.H.V.E. TRANSACTIONS, Vol. 48, 1942, p. 459).

Air Conditioning in Industrial Processes (Match Factory), by W. L. Fleisher (*Heating, Piping and Air Conditioning*, March, 1931, p. 196).

Air Conditioning as Applied in Theatres and Film Laboratories, by D. C. Lindsay (*Transactions Society of Motion Picture Engineers*, April, 1927, Vol. XI, No. 30, p. 335-365).

Air Conditioning for Textile Plants Making and Using Synthetic Yarns, by L. L. Lewis (*Rayon Textile Monthly*, July, August, September, 1930).

Relation of Air Conditions to Tobacco Curing, by J. Johnson and W. B. Ogden (*Wisconsin Agricultural Research Bureau* 110: 1-45, 1931).

An Investigation of the Bacterial Contamination of the Air of Textile Mills with Special Reference to the Influence of Artificial Humidification, by W. F. Wells and E. C. Riley (*The Journal of Industrial Hygiene and Toxicology*, Vol. 19, No. 10, December, 1937).

Air Conditioning for Clothing Research Laboratory (*Heating and Ventilating*, July, 1943, p. 69).