FILE NAME: Concrete (CONC)

DATE: 1939 May

DOC#: CONC005

DOCUMENT DESCRIPTION: Journal Article - Procedures in Dust Sampling

Charter Member

Associated Business Papers

CONCRETE, with which has been combined Cement Age, New York, and Concrete Engineering, Cleveland, is devoted to the Proper Use of Concrete and the Manufacture of Cement.

Published Monthly by

CONCRETE PUBLISHING CORPORATION
400 West Madison Street
Chicago, Illinois
Telephone CENtral 8822

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318 West Ninth Street
Tucker 9706

The Cement Mill Edition of *Concrete*

The Cement Mill Edition of CONCRETE is edited exclusively for those interested in the manufacture of portland cement and related products.

Its pages are devoted to discussions of plant design, management, operation, production efficiency, chemical research and control, quarry operation, progress and news of the industry.

The Cement Mill Edition also contains all the material published in the corresponding Regular Edition and so provides news of the uses and merchandising of the materials whose manufacture is discussed in the Mill Edition.

The Regular Section furnishes mill operating officials and mill executives valuable points of contact with the users of the materials they produce.

The subscription price is $4.00 a year in the United States and its possessions, and Mexico. One dollar additional for postage in all other countries. Current copies, 50 cents each.

Charter Member

Audit Bureau of Circulations

CEMENT MILL SECTION of

Concrete

Established 1904

Volume 47 **May, 1939** **Number 5**

NORMAN M. STINEMAN, *Editor*
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Procedures in Dust Sampling

Recommendations of Engineering Committee of Air Hygiene Group

DEFINITE instructions for taking and analyzing dust samples are given in a report by the committee on preventive engineering appointed by the Air Hygiene Foundation, and headed by Prof. Philip Drinker, of Harvard University. The full report has been issued by the Foundation under the heading *Routine Sampling for Control of Atmospheric Impurities.*

Dust Analysis

In the case of all dusts the estimation of the sample taken from the air can be made by counting representative fractions under the microscope, or the sample can be analyzed by appropriate chemical methods, or the material can be weighed. The large impinger and the electric precipitator are equally well adapted to either procedure. The midget impinger collects, in reasonable sampling time, a relatively small amount of dust, enough for counting. Dusts, like silica, that are troublesome to determine chemically, are generally counted, while those like lead, manganese, and cadmium, are determined chemically.

Concerning light-field vs. dark-field counting, the bulletin says that for routine control work the relative advantages of these two methods—no matter what sampling instrument is used—are unimportant.

Some gases and vapors, notably carbon monoxide, hydrogen sulfide, and mercury, in minute amounts, give strong chemical reactions which makes possible rapid estimations; and still better, continuous records of pollution. However, the great bulk of gases and vapors from organic solvents, such as benzene, carbon tetrachloride, and carbon disulfide, can not be caught efficiently unless sampled at slow rates, such as ½ to 1 liter per minute. Some of them, such as benzene, can be absorbed directly in special solvents or adsorbants, like charcoal or silica gel, or can be converted into another compound which can then be estimated by an appropriate method.

Routine Checks and Recording

If control equipment has been installed, samples should be taken periodically for check-ups. This is the best way to tell whether the equipment is functioning as it should. If concentrations obviously are high, it is usually a waste of time to take the sample and to estimate it. Today, many plants operate crushing units and other dust producers at night, to take advantage of reduced power rates and to stagger employment over 24 hours. During the night shift, dust inspections can be made rapidly, using nothing but the beam from an ordinary flash light to detect dust leaks.

Such crude tests do not take the place of regular sampling technic. How often the routine samples should be taken depends entirely upon local conditions. In some places, they are taken daily; in others, several times a year is enough. It is well to play safe and to take them too often rather than too seldom. The men quickly become used to such sampling and pay no attention to the procedure. Obviously, the sooner the sampler has the man's interest in his results, the better will be the outcome.

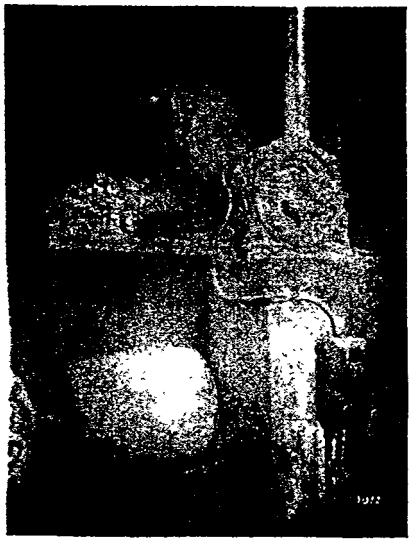
Wherever Men Work

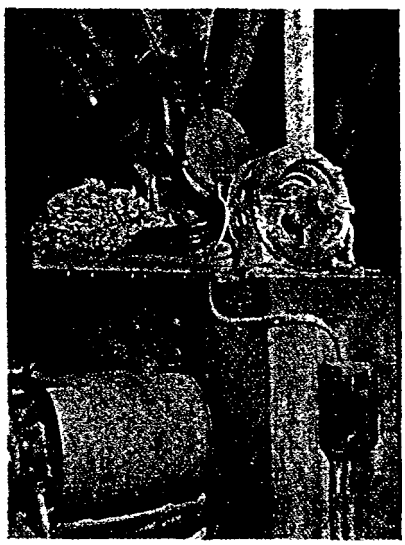
Samples should be taken wherever men work. It is a mistake to ignore places where one believes that there is no dust or gas. The samples are about the only proof that the employer can bring forth that he has taken proper precautions to prevent a disease, such as silicosis. The mere statement that he or anyone else thought the atmosphere sufficiently clean is not enough.

Occasional photographs of various plant operations are often of greater practical usefulness than are records of dust counts or of gas or vapor concentrations. As an exhibit on the company's bulletin boards, photographs are effective warnings to the men to clean up.

"Before-and-after" in a cement manufacturing plant.—On the left is a bagging machine in operation with the dust exhaust shut off, showing normal conditions as they existed before the exhaust system was installed.—On the right the same activity is shown with the exhaust system in operation

Courtesy W. W. Sly Manufacturing Co., Cleveland, Ohio





Kentucky Laboratory Moved to Brooklyn

KENTUCKY Testing Laboratory, of Lexington, Kentucky, has been absorbed by Foster D. Snell, Inc. of 305 Washington Street, Brooklyn, N. Y. The Kentucky laboratory has specialized in analysis of coal, water, building materials and similar lines. All equipment has been moved to Brooklyn, and the former personnel has become part of the staff of Foster D. Snell, Inc. This broadens the analytical division of the Snell laboratory and at the same time improves the service possible to former clients of The Kentucky Testing Laboratory. Service at the new location was started on April 1.

What Quantity of Dust Is Harmful?

WHAT quantities of various industrial dusts, fumes, gases, vapors or mists may the atmosphere contain without danger or possibility of producing harmful effects on workers?

This problem is being attacked by the committee on standard allowable concentrations of toxic dusts and gases appointed by the American Standards Association, 29 West 39th Street, New York. The committee is headed by Dr. R. S. Sayers, chief, division of industrial hygiene, U. S. Public Health Service.

The committee will make recommendations to A.S.A. committees which are working on methods of preventing occupational diseases, particularly the committees on the design and operation of exhaust ssytems, and on protection of heads, eyes, and respiratory organs of industrial workers. Its findings will be helpful in carrying out the recommendations of the international conference on silicosis, held last September under the sponsorship of the international committee on silicosis, of which Dr. Sayers is one of the vice-chairmen. That conference emphasized the necessity of preventing silicosis through suppression of silica dust.

All standards prepared by the A.S.A. committee will first state the scope and purpose of the standard; second, identify the substance chemically, physically, and descriptively; third, state the maximum permissible range of concentrations of the toxic substance in the air of work places; fourth, state how and where atmospheric samples shall be collected; fifth, describe the method or methods to be employed in analyzing air samples; sixth, include an interpretation and general summary of information to help in applying the requirements.

Dr. R. R. Jones of the U. S. Public Health Service is acting as technical secretary for this committee. Communications may be addressed to him.

Exposition of Chemical Industries Scheduled for December

THE Seventeenth Exposition of Chemical Industries will be held this year at Grand Central Palace, New York City, during the week of December 4 to 9. Since its inception in 1915, the Chemical Exposition has become the traditional means by which the industry's manufacturers and engineers convene to take inventory of material and equipment advances.

At the last Exposition, in 1937, held at Grand Central Palace, visitors came from 1,358 cities and towns in 45 states of the United States, and from 130 cities and towns in 47 foreign countries. The total registered attendance was 46,290, an all-time record.

The first three floors of Grand Central Palace have been reserved for the coming exposition in December. Nearly 200 previous exhibitors have re-engaged the entire first and second floors, and one-third of the third floor. Many of the exhibitors who were in the first Exposition in 1915 have already engaged space for 1939. Information about space may be addressed to the Seventeenth Exposition of Chemical Industries, Grand Central Palace, New York, N. Y.

Regulations for Exemption from Additional Duty

ARGENTINE Decree No. 295 of Nov. 28, 1938, provides that in order to be exempt from the additional duty of 10 per cent ad valorem, as provided by the 1938 budget law, imported cement documented as from Jan. 1, 1939, must be covered by a special certificate issued by the Argentine consul in the country of origin showing the wholesole price or prices for cement for internal consumption in the local markets, says a report to the U. S. Bureau of Foreign and Domestic Commerce.

The Argentine consuls will issue the certificate free of charge. This special certificate is in addition to the regular documentation required on shipments to Argentina. When the Argentine consul is unable to obtain the data necessary to issue the certificate by his own means, the interested exporter will be requested to furnish him the required data on wholesale prices. The absence of this information will subject the shipment in question to the additional duty of 10 per cent ad valorem.

Brazil's Cement Plants Now Meet National Needs

IMPORTS of cement into Brazil have steadily declined during the 10-year period 1929-1938, until they now represent less than 9 per cent of the 1929 trade, says a report to the U. S. Bureau of Foreign and Domestic Commerce from the American Consulate General at Rio de Janeiro.

In the same period domestic production has increased about 60 per cent. The explanation for this state of affairs lies principally in the fact that with the assistance of foreign capital (American and Canadian) large manufacturing plants have been erected in Brazil; and these, protected as they are by an import duty, are now supplying the demands of the principal Brazilian markets or trade areas. Were it not for the high cost of transportation from manufacturing centers to remote markets in the country it is probable that cement imports, with the exception of white cement, would cease entirely. White cement is not now being produced in Brazil.

Increase Producing Capacity in Germany

IN October, 1938, definite steps were taken in Germany to bring about a big expansion in the producing capacity of the nation's cement industry, says a report to the U. S. Bureau of Mines from C. M. Garrity, U. S. vice-consul at Frankfort-on-Main.

The expectation is that the output in 1939 will exceed the production in 1938 by some 6,000,000 metric tons, or about 30 per cent. Up to the middle of 1938 the demand for cement was met without difficulty; but later, when enormous orders for supplies for fortification of the west frontier were received, the demands made by private consumers could not be satisfied. It was necessary to import Italian cement for the construction of the KDF (People's Car Works) at Fallersleben. It is estimated thet the producing capacity of the German cement industry was 18,000,000 metric tons in 1938.

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