

# Sixty-first Annual Meeting Papers

*Symposium on*

## PARTICLE SIZE MEASUREMENT



Published by the  
AMERICAN SOCIETY FOR TESTING MATERIALS  
1916 Race St., Philadelphia 3, Pa.

*ASTM Special Technical Publication No. 234*

# SYMPOSIUM ON PARTICLE SIZE MEASUREMENT

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Presented at the  
SIXTY-FIRST ANNUAL MEETING  
AMERICAN SOCIETY FOR TESTING MATERIALS  
Boston, Mass., June 26 and 27, 1958



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*ASTM Special Technical Publication No. 234*

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## FOREWORD

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The papers and discussions in this 1958 Symposium on Particle Size Measurement were presented at the Sixty-second Annual Meeting of the American Society for Testing Materials held in Boston, Mass., on June 26 and 27, 1958.

This Symposium was sponsored by Subcommittee 11 on Subsieve Testing, of ASTM Committee E-1 on Methods of Testing. It was organized by Lincoln T. Work, Consulting Engineer, chairman of Subcommittee 11, who also served as chairman for the third and final session of the Symposium. The first session was presided over by A. E. Reed, Vice President, The W. S. Tyler Co., Cleveland, Ohio, and the chairman of the second session was A. E. Jacobsen, Research Chemist, National Lead Co., Titanium Division, South Amboy, N. J.

In order to make this publication more complete, two additional papers on particle size measurement, published by the ASTM, have been included although they were not presented as part of the Symposium. The paper on "Light Scattering Instrumentation for Particle Size Distribution Measurement" by C. T. O'Konski, M. D. Bitron and W. I. Higuchi has been reprinted from the Symposium on Instrumentation, ASTM Special Technical Publication No. 250. The paper on "Methods of Particle Size Analysis" by R. P. Loveland is reprinted from the Symposium on Light Microscopy, first published in 1952.

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NOTE.—The Society is not responsible, as a body, for the statements  
and opinions advanced in this publication.

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THIS PUBLICATION is one of many issued by the American Society for Testing Materials in connection with its work of promoting knowledge of the properties of materials and developing standard specifications and tests for materials. Much of the data result from the voluntary contributions of many of the country's leading technical authorities from industry, scientific agencies, and government.

Over the years the Society has published many technical symposiums, reports, and special books. These may consist of a series of technical papers, reports by the ASTM technical committees, or compilations of data developed in special Society groups with many organizations cooperating. A list of ASTM publications and information on the work of the Society will be furnished on request.

# American Society for Testing Materials



# Application for Membership

The undersigned hereby applies for  $\left\{ \begin{array}{l} \text{sustaining} \\ \text{company} \end{array} \right.$   $\left\{ \begin{array}{l} \text{individual} \\ \text{associate} \end{array} \right.$  membership in the American Society for Testing Materials including subscription to ASTM BULLETIN. If this application be duly approved, he agrees to be governed by the Charter and By-laws of the Society and to further its objects as laid down therein.

NAME.....  
(Firm, Organization or Individual Applicant)

ADDRESS FOR MAIL.....  
(If other than below).....

NATURE OF BUSINESS.....

NAME.....TITLE.....  
*If company membership, indicate above the name and title of individual who will exercise membership privileges.*

NAME OF ORGANIZATION.....  
If individual membership, indicate above the name of organization with which applicant is affiliated.

ADDRESS OF ORGANIZATION.....

APPLICANT'S TITLE OR OCCUPATION.....

DATE OF BIRTH.....

GRADUATE OF, OR ATTENDED.....  
*Name of College or University*

YEAR.....DEGREE, OR COURSE.....

*Recommended by* } \_\_\_\_\_  
(TWO MEMBERS)

Application for membership should be mailed to  
AMERICAN SOCIETY FOR TESTING MATERIALS—1916 RACE ST., PHILADELPHIA 3, PA.



# AMERICAN SOCIETY FOR TESTING MATERIALS

## EXTRACT FROM CHARTER

1. The name of the proposed corporation is the "American Society for Testing Materials."
2. The corporation is formed for the promotion of knowledge of the materials of engineering, and the standardization of specifications and the methods of testing.

## EXTRACT FROM BY-LAWS

### ARTICLE I. *Members and Their Election*

SECTION 1. The Society shall consist of Individual Members, Company Members, Sustaining Members, Associate Members, Student Members and Honorary Members.

SEC. 2. An Individual Member shall be a person, technical or scientific society, college or university or department thereof, library, government bureau or department, or such other organizations as the Board of Directors may deem as appropriately coming under this classification.

SEC. 3. A Company Member shall be a company, corporation, firm, industrial or trade association, or such other organizations as the Board of Directors may deem as appropriately coming under this classification.

SEC. 4. A Sustaining Member shall be an Individual Member or Company Member who wishes to support and participate in the work of the Society through the payment of larger dues.

SEC. 5. An Associate Member shall be a person less than thirty years of age. An Associate Member shall have the same rights and privileges as an Individual Member, except that he shall not be eligible for office. His status shall be changed from Associate Member to Individual Member at the beginning of the fiscal year next succeeding his thirtieth birthday.

### ARTICLE V. *Meetings*

SECTION 1. The Society shall meet annually, for the transaction of its business, including actions on standards, at a time and place fixed by the Board of Directors. Twenty-five members shall constitute a quorum.

SEC. 2. Special meetings may be called whenever the Board of Directors shall deem it necessary, or upon the written request of 25 members to the President.

### ARTICLE VIII. *Dues*

SECTION 1. The fiscal year shall commence on the first day of January. The annual dues\*, payable in advance, shall be as follows: For Individual Members, \$18; for Company Members, \$75; for Sustaining Members, \$200; for Associate Members, \$10; for Student Members, \$2. Honorary Members shall not be subject to dues.

SEC. 2. The entrance fees, payable on admission to the Society, shall be \$10 for Individual Members, Company Members and Sustaining Members, and \$5 for Associate Members. Student Members shall pay no entrance fee. The fee payable upon transfer from one class of membership to another, shall be the difference between the corresponding entrance fees.

SEC. 5. Any person elected after six months of any fiscal year shall have expired, may pay only one-half of the amount of dues for that fiscal year; but in that case he shall not be entitled to a copy of the *Proceedings* for the current year.

\* NOTE—Of the annual dues \$3.50 is for subscription to ASTM BULLETIN.

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 .....ZONE.....

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