

Symposium on Effect of Temperature on the Properties of Metals

Held at a Joint Meeting of
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
and the
AMERICAN SOCIETY FOR TESTING MATERIALS
Chicago, Ill., June 23, 1931



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PREFACE

The coordination and the interchange of information and ideas relating to the effect of temperature on the properties of metals is one of the important functions of the Joint Research Committee on the Effect of Temperature on the Properties of Metals. This is the basis upon which the Joint Committee sponsored, and arranged for, this Symposium at a joint meeting of The American Society of Mechanical Engineers and the American Society for Testing Materials held on June 23, 1931.

Broadly speaking, the two important phases considered in this Symposium were (1) the present and probable future demands of important industries for materials for service at high or low temperatures and (2) the present state of knowledge of the properties of available metals and alloys and their industrial applications.

For the purpose of securing, editing and assembling the papers entering into the Symposium, a program committee consisting of the following acted for the Joint Committee:

H. W. GILLETT, *Chairman*
C. B. LEPAGE
C. L. WARWICK

The work of this committee was facilitated by the cooperation not only of the authors but also of the many persons who, by providing the authors with hitherto unpublished facts or a record of their points of view, have made possible the collection of the data herein presented.

The thanks of the Joint Committee are due to a number of technical committees which were instrumental in securing some of the papers presented:

A.S.M.E. Power Division.—Sponsor for the papers by H. J. Kerr, R. C. Allen and F. W. Martin covering the needs of the power plant industry.

A.S.T.M. Committee A-10 on Iron-Chromium, Iron-Chromium-Nickel and Related Alloys.—Sponsor for the paper by J. C. Woodson covering the needs of the ferrous metal industry.

A.S.T.M. Committee A-3 on Cast Iron.—Sponsor for the paper by J. W. Bolton and H. Bornstein on the properties of cast and malleable iron.

A novel method was adopted in presenting the papers at the Symposium. Since more data had been accumulated than could be presented even in abstract at the two technical sessions devoted to their presentation, instead of arranging for the presentation of individual papers by the respective authors, the papers were divided into two groups corresponding, respectively, to the two major phases of the subject mentioned above, and a general review of each group was given by a member of the Joint Committee not himself an author. Mr. L. W. Spring summarized the papers in the group on Engineering Trends and Requirements for Metals at High and Low Temperatures, and Mr. H. J. French summarized those in the group on Properties of Available Metals for High- and Low-Temperature Service. The thanks of the committee are due Messrs. Spring and French for their very able summarization of these papers.

The Joint Research Committee on the Effect of
Temperature on the Properties of Metals:

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