

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by the cooperation not only of the authors but also of the many persons who, by providing the authors with hitherto unpublished facts or a record of their points of view, have made possible the collection of the data herein presented.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

	PAGE
Introduction—H. W. Gillett.....	7
I. ENGINEERING TRENDS AND REQUIREMENTS FOR METALS AT HIGH AND LOW TEMPERATURES	
Trends in Engineering Requirements for Metals for the Power-Plant Industry—H. J. Kerr.....	15
Discussion.....	20
Steam Turbine Materials for High Temperatures—R. C. Allen.....	30
Discussion.....	47
Metallurgical Requirements for High-Temperature Steam Piping—F. W. Martin.....	49
Discussion.....	58
Needs of the Oil Industry for Metals at High Temperatures—E. S. Dixon..	66
Discussion.....	85
Corrosion and Other Problems in the Use of Metals at High Temperatures in the Chemical Industries—F. H. Rhodes.....	100
Discussion.....	109
Engineering Requirements and Trends for Metals in the Ferrous Metal Industries—J. C. Woodson.....	112
Discussion.....	140
Engineering Requirements and Trends for Metals in the Non-Ferrous Roasting, Smelting and Refining Industry—R. E. Brown.....	151
Engineering Requirements in the Automotive Industry for Metals Operating at High Temperatures—A. L. Boegehold and J. B. Johnson.....	169
Discussion.....	194
Use of Metals at Elevated Temperatures in the Ceramic Industry—Clyde E. Williams.....	201
Discussion.....	217
The Trend of Progress in Great Britain on the Engineering Use of Metals at Elevated Temperatures—R. W. Bailey, J. H. S. Dickenson, N. P. Inglis and J. L. Pearson.....	218
Discussion.....	237
The Mechanical Properties of Metals at Elevated Temperatures—Pierre Chevenard.....	245
Discussion.....	269
II. PROPERTIES OF AVAILABLE METALS FOR HIGH- AND LOW-TEMPERATURE SERVICE	
Zinc Alloys for High- and Low-Temperature Service—H. A. Anderson.....	271
The Mechanical Properties of Aluminum and Magnesium Alloys at Elevated Temperatures—R. L. Templin and D. A. Paul.....	290
Discussion.....	314
Properties of Bearing Metals at Normal and Elevated Temperatures—E. R. Darby.....	316
Discussion.....	332

	PAGE
Properties of Copper and Some of Its Important Industrial Alloys at Elevated Temperatures—W. B. Price.....	340
Discussion.....	351
High-Temperature Creep Properties of Wrought Carbon and Low-Alloy Steels—A. P. Spooner and F. B. Foley.....	368
Discussion.....	373
The Performances of Cast Carbon and Low-Alloy Steels in High- and Low-Temperature Service—R. A. Bull.....	394
Discussion.....	432
Effect of Elevated Temperatures on Certain Mechanical Properties of Gray Cast Iron and Malleable Iron—J. W. Bolton and Hyman Bornstein....	436
Discussion.....	459
The Wrought Austenitic Alloys—R. H. Aborn and Edgar C. Bain.....	466
Discussion.....	491
The Effect of Temperature on Some Properties of Iron-Chromium-Nickel Alloys—N. B. Pilling and Robert Worthington.....	495
Discussion.....	551
Nickel and Nickel Alloys Other than the Nickel-Chromium-Iron Group—C. A. Crawford and Robert Worthington.....	557
Discussion.....	586
High-Chromium Steels for Extreme Service Conditions—C. E. MacQuigg..	589
Discussion.....	607
Properties of the Rare Metals for High-Temperature Service—W. H. Swanger	610
Discussion.....	623
Effect of Temperature on the Properties of Nitrided Alloys—Oscar E. Harder	631
Discussion.....	654
Effect of Low Temperatures on Metals and Alloys—H. W. Russell.....	658
Discussion.....	681
Thermal Expansion of Metals—Norman L. Mochel.....	683
Discussion.....	719
Note on Applications of Data on the Thermal Conductivity of Metals—M. S. Van Dusen.....	725
Discussion.....	730
—————	
Supplementary Bibliography on Effect of Temperature on Properties of Metals—Lois F. McCombs.....	735
—————	
Subject Index.....	792
Author Index.....	823
—————	
INSERT PLATE	
Plate I. Short-Time Tension Tests on Cast and Wrought Aluminum and Aluminum Alloys.....	298

