

**REVIEW OF THE AMERICAN
STANDARD SPECIFICATIONS,
TEST PIECES, AND METHODS
OF TESTING IRON AND STEEL**

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Review of the American Standard Specifications, Test Pieces, and Methods of Testing Iron and Steel by Various

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VARIOUS

**REVIEW OF THE AMERICAN
STANDARD SPECIFICATIONS,
TEST PIECES, AND METHODS
OF TESTING IRON AND STEEL**

REVIEW

OF THE

**American Standard Specifications,
Test Pieces, and Methods of Testing
Iron and Steel,**

ADOPTED BY

**Committee No. 1 of American Section of the Interna-
tional Association for Testing Materials,**

WITH A

**Discussion of the Commercial Methods for the Physical and Chemical
Testing of Iron and Steel in Use in the United States,**

AND

A Critical Review of Foreign Specifications for Steel Rails,

BY

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I. REVIEW OF THE AMERICAN STANDARD SPECIFICATIONS, TEST PIECES AND METHODS OF TESTING IRON AND STEEL.

A. INTRODUCTION.

Specifications governing the chemical and physical properties of iron and steel for specific purposes may very properly be made the subject of international agreement. There are certain general requirements which such international specifications should include, and there is a class of requirements which should be omitted.

International specifications should name the process or processes of manufacture by which the steel for a given purpose shall be made; they should not, however, prescribe the details of the process, as the methods of manufacture, producing a satisfactory product, vary in different countries. They should include limits in certain of the chemical constituents of the steel, particularly phosphorus and sulphur for both acid and basic steel, and they should prescribe limits in all physical properties which materially aid in showing whether the steel is suitable for the purpose intended.

International specifications should also describe the shape, number, and location of the test specimens, and give general methods for determining the physical properties specified; they should also mention how the sample for chemical analysis shall be taken. They should contain clauses governing the required finish and branding of the material, and finally a clause granting the inspector the necessary facilities to carry out the provisions of the specification.

The text of ten specifications, drawn on the above lines, will be found as an appendix to this paper. These ten specifications were framed by Committee No. 1 of the American Section of International Association for Testing Materials, and were adopted by a large majority of the thirty-four members of this Committee. They will be discussed by the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Railway Master Mechanics' Association, the American Institute of Mining Engineers, and other technical societies, and will