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**Method for steam oxidation test of
boiler tube metallic materials**

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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In the event of any doubts arising as to the contents,
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Method for steam oxidation test of boiler tube metallic materials

Introduction This Japanese Industrial Standard has been established for evaluating steam oxidation characteristics of boiler tube metallic materials to be manufactured according to the demands of the market.

1 Scope This Standard specifies the method for steam oxidation test of boiler tube metallic materials at high temperatures.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent edition of the standards (including amendments) indicated below shall be applied.

JIS B 7502 *Micrometer callipers*

JIS B 7507 *Vernier, dial and digital callipers*

JIS C 1602 *Thermocouples*

JIS R 6251 *Abrasive cloths*

JIS R 6252 *Abrasive papers*

JIS Z 8401 *Guide to the rounding of numbers*

3 Definitions Definitions of principal terms used in this Standard shall be as follows.

- a) **scale** An oxide film and an oxide product which are generated on the surface of a test piece after an oxidation test.
- b) **adhesive scale** A scale stuck close to the test piece after an oxidation test.
- c) **peeled scale** A scale peeled off from the test piece after an oxidation test.
- d) **inner layer scale** A scale part which is grown principally by inward diffusion of oxygen.
- e) **outer layer scale** A scale part which is grown principally by outward diffusion of iron.

4 Test apparatus

4.1 Constitution of test apparatus A test apparatus shall be composed of a temperature regulator for uniformly and constantly heating a test piece; a heating apparatus equipped with a test room for isolating the test piece from the open air; a steam generator; and an apparatus for controlling the flow rate of water or steam. An example of a basic constitution of the test apparatus is shown in Fig. 1.