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Methods for magnetic flux leakage testing

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In the event of any doubts arising as to the contents,
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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japanese Society for Non-Destructive Inspection (JSNDI)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS Z 2319**:1991 is replaced with this Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Methods for magnetic flux leakage testing

1 Scope

This Japanese Industrial Standard specifies the general matters concerning the magnetic flux leakage testing method which aims at the detection of flaws on the surface, the internal surface and the back face of bars/pipes/plates made of ferromagnetic material such as steels, as well as their structures, machine parts, wire ropes, etc.

2 Normative references

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

JIS G 0431 *Steel products—Employer's qualification system for nondestructive testing (NDT) personnel*

JIS Z 2300 *Terms and definitions of nondestructive testing*

JIS Z 2305 *Non-destructive testing—Qualification and certification of NDT personnel*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS Z 2300**, and the following apply.

3.1 detecting head

magnetizer or magnetic sensor (array) used for the purpose of detecting flaws, etc. according to the relative motion with respect to a test object

3.2 effective width of sensing coverage

width in which a magnetic sensor (array) can detect the leakage of magnetic flux (effective detection width perpendicular to scanning direction)

3.3 scanning pitch

scanning interval (feed pitch of scanning perpendicular to scanning line)

When bars, pipes, etc. are scanned by helical motion, it is the scanning interval of the helix in the axial direction.

4 Principle

The test object made of ferromagnetic material is magnetized by a magnetizer. If discontinuities such as flaws exist in the test object, the magnetic flux will leak from the test object. In the magnetic flux leakage testing, the distribution and strength of magnetic flux which leaks from the flaw is examined using a magnetic sensor, and the flaw is detected. The magnetic flux leakage testing, which is a high-speed testing without contact of the magnetic sensor with the test object, is a non-destructive testing