JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS Z 2343-1 : 2017

(JSNDI/JSA)

Non-destructive testing—Penetrant testing—Part 1: General principles—Method for liquid penetrant testing and classification of the penetrant indication

ICS 19.100

Reference number : JIS Z 2343-1 : 2017 (E)

Date of Establishment: 2001-04-20
Date of Revision: 2017-03-21
Date of Public Notice in Official Gazette: 2017-03-21
Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area
Technical Committee on Safety

JIS Z 2343-1:2017, First English edition published in 2017-06

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

Printed in Japan

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Foreword

This translation has been made based on the original Japanese Industrial Standard 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 Standard Association 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 2343-1**:2001 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.

JIS Z 2343 series consists of the following 6 parts under the general title "*Non-destructive testing—Penetrant testing*":

- JIS Z 2343-1 *Part 1: General principles—Method for liquid penetrant testing and classification of the penetrant indication*
- JIS Z 2343-2 *Part 2: Testing of penetrant materials*
- JIS Z 2343-3 *Part 3: Reference test blocks*
- JIS Z 2343-4 *Part 4: Equipment*
- JIS Z 2343-5 *Part 5: Penetrant testing at temperatures higher than 50 degree C*
- JIS Z 2343-6 *Part 6: Penetrant testing at temperatures lower than 10 degree C*

Non-destructive testing—Penetrant testing—Part 1: General principles—Method for liquid penetrant testing and classification of the penetrant indication

Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **ISO 3452-1** published in 2013 without any modifications of the technical contents, but adding some specification contents (classification of the penetrant indication, classification of discontinuities, marking, etc.) that are not given in the corresponding International Standard.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies a method of penetrant testing used to detect discontinuities, e.g. cracks, laps, folds, porosity and incomplete fusion, which are open to the surface of the materials and products in manufacturing process or in service (hereafter referred to as parts to be tested), and also specifies classification of penetrant indication by discontinuities. Testing is mainly applied to metallic materials, but can also be performed on other materials, provided that they are inert to the test media and not excessively porous, for example, castings, forgings, welds, ceramics.

This Standard also includes requirements for process and control testing, but is not intended to be used for acceptance criteria and gives neither information relating to the suitability of individual test systems for specific applications nor requirements for test equipment.

NOTE 1 Methods for determining and monitoring the essential properties of penetrant testing products (hereafter referred to as testing products/materials) to be used are specified in **JIS Z 2343-2** and **JIS Z 2343-3**.

NOTE 2 The term "discontinuity" is used here in the sense that no evaluation concerning acceptability or non-acceptability is included.

NOTE 3 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 3452-1:2013 *Non-destructive testing—Penetrant testing—Part 1: General principles* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.