

## Outline of "Guide to Qualification and Certification for NDT Personnel in Accordance with JIS Z 2305"

This document is an outline of a "Guide to Qualification and Certification for NDT (Non-destructive testing) Personnel in Accordance with a Japanese Industrial Standard, JIS Z 2305:2001, Non-destructive testing – Qualification and certification of personnel (ISO 9712:1999, MOD)".

### 1. Implementation time of qualification examinations

Examinations for JIS Z 2305 started in the spring of 2003.

### 2. Frequency of examinations

Examinations are held twice a year, in spring and autumn.

### 3. Examination locations

Examinations are conducted in many cities in Japan, for example, Sapporo, Sendai, Chiba, Tokyo, Yokohama, Nagoya, Osaka, Hiroshima, and Kitakyushu, etc.

### 4. New candidate eligibility

#### 4.1 Training

To be eligible for the examination, a candidate shall have fulfilled the minimum NDT training requirements specified below.

##### 4.1.1 Level 1 and Level 2

A candidate shall have completed a training program of the minimum duration specified in Table 1 or Table 2, depending on the method for which he seeks certification. Direct access to Level 2 implies completion of the total number of hours shown for Level 1 and Level 2.

Table 1 Duration of training required (hours)

NDT Method	Level 1	Level 2
RT (Radiographic testing)	40	80
UT (Ultrasonic testing)	40	80
MT (Magnetic particle testing)	16	24
PT (Liquid penetrant testing)	16	24
ET (Eddy current testing)	40	40
SM (Strain measurement)	16	24

Table 2 Duration of training required (hours)

Limited NDT Method	Level 1	Level 2
UM (Ultrasonic thickness measurement)	16	—
MY (Yoke method magnetic particle inspection)	8	16
ME (Direct contact method magnetic particle inspection)	8	—
MC (Coil method magnetic particle inspection)	8	—
PD (Solvent removable penetrant inspection)	8	16
PW (Water washable penetrant inspection)	8	—

Note The abbreviations in the above tables are used hereinafter to identify NDT methods covered by this document.

#### 4.1.2 Level 3

To be eligible for the examination, a candidate shall provide documentary evidence of the following activities in the immediate past five years:

attendance or presentation at NDT-related conferences or seminars; completion of training courses in NDT-related technology; authoring an NDT-related book(s); or study based on an NDT-related book(s).

#### 4.2 Training courses

The candidate for Level 1 and Level 2 shall provide evidence of completion of a course(s) of NDT training which complies with the training hours of the above Table 1 or Table 2. Such a training document(s) will be viewed as valid for the past five years from the first date of application period for an examination. Recommended is a program based on the training curriculum prepared by JSNDI.

##### 4.2.1 Requirements for NDT instructors

NDT instructors should be Level 3 or Level 2 personnel of JIS Z 2305, but persons who have NDT-related knowledge and experience will be accepted, provided an individual responsible for the training approves their competence. In this context, Level 3 or Level 2 personnel of NDIS 0601 may be regarded as Level 3 or Level 2 personnel of JIS Z 2305, respectively.

Note NDIS: Standard of JSNDI

NDIS 0601: Rules for Qualification and Certification of Non-Destructive Testing Personnel

##### 4.2.2 Training courses

Training courses shall be sponsored by one of the following:

- (1) The Education Committee of JSNDI
- (2) A branch or regional research group of JSNDI
- (3) NDT training courses in a professional school
- (4) A company
- (5) An agency utilizing NDT and a manufacturer of NDT-related equipment and materials
- (6) An NDT-related society

A personally planned program may also be acceptable.

### 5. Examination content

#### 5.1 Level 1

- (1) Primary examination: written examination covering the principles, equipment and application of NDT methods, etc.
- (2) Secondary examination: practical examination

#### 5.2 Level 2

- (1) Primary examination: written examination covering fundamentals of NDT methods, its application, codes, specifications and standards, etc.
- (2) Secondary examination: practical examination and drafting of an NDT instruction

#### 5.3 Level 3

- (1) Primary examination: written examination covering technical knowledge in materials science and process technology regarding products, manufacturing and operation, knowledge of the certification system, general knowledge of four NDT methods as required for Level 2, which cover the method chosen by the candidate and three other methods. Either RT or UT shall be included in these four methods.
- (2) Secondary examination: written examination covering fundamental knowledge of NDT methods and applications, codes, standards and specifications and drafting of an NDT procedure. (A Level 3 candidate who does not hold an appropriate Level 2 certificate shall pass a relevant level 2 practical examination, excluding drafting of an NDT instruction.)

## 6. Transition of certification from NDIS 0601 to JIS Z 2305

A holder of a certificate of NDIS 0601 may transit his certification from NDIS 0601 to JIS Z 2305 at the time of NDIS 0601 recertification, by passing a transition examination and a recertification examination. If requested, it is possible to make the transition before the NDIS 0601 recertification. The transition examination will be conducted to compensate the difference between examinations of NDIS 0601 and examinations of JIS Z 2305.

## 7. Application for certification

The following documentary evidence is required for a certification application.

- (1) A certificate of a successful examination, which is valid for three years after the date of issue
- (2) Documentary evidence of experience
- (3) Documentary evidence of satisfactory vision acuity and color vision

### 7.1 Experience

Experience is defined as the period during which a candidate performed a specific NDT method being applied for under qualified supervision. However, the beginning of NDT training of an completely inexperienced person under the administration and guidance of NDT personnel may also be regarded as the beginning of the period of experience.

### 7.2 Minimum requirements for experience to be gained prior to certification

#### (1) Experience for Level 1 and Level 2

Level 1 and Level 2 candidates shall have the minimum experience specified in Table 3 and Table 4 for the NDT methods which they seek.

Table 3 Minimum experience requirements for each NDT method (months)

NDT Method	Level 1	Level 2
RT	3	9
UT	3	9
MT	1	3
PT	1	3
ET	3	9
SM	1	3

Table 4 Minimum experience requirements for each Limited NDT method (months)

Limited NDT Method	Level 1	Level 2
UM	1	—
MY	1	2
ME	1	—
MC	1	—
PD	1	2
PW	1	—

If a Level 2 candidate is being qualified directly to Level 2 with no time at Level 1, the required experience shall consist of the sum of the periods required for Level 1 and Level 2. Certification in two or more NDT methods may allow a reduction in the total experience required. Details of the reduction are shown in a “Guide to Implementation of Qualification Examinations in Accordance with JIS Z 2305 (Japanese version only).”

#### (2) Experience for Level 3

Minimum months of experience required for the application of Level 3 certification are common to all NDT methods, as shown in Table 5.

Table 5 Minimum experience requirements for application of Level 3 certification

Level 2 Certificate	Education	Experience (months)
Holder	Graduate of a science or engineering college or a department of science or engineering or its equivalent in a university; successful completion of an advanced course in a national college of technology	12
	Graduate of a two year or longer science or engineering college, technical school, or its equivalent; graduate of a national college of technology	24
	Others (No degree)	48
None	Graduate of a science or engineering college or a department of science or engineering or its equivalent in a university; successful completion of an advanced course of a national college of technology	24
	Graduate of a two year or longer science or engineering college, technical school, or its equivalent; graduate of a national college of technology	48
	Others (No degree)	72

7.3 Vision acuity and color vision

A candidate shall provide documentary evidence, signed by a doctor or an employer, which verifies the following:

- (1) Near vision acuity shall permit reading a minimum of Times Roman N6 or equivalent letters at not less than 30 cm with one or two eyes, either corrected or uncorrected.
- (2) Color vision shall be such that the candidate can distinguish and differentiate contrast between the colors used in the NDT method concerned as specified by the employer.

7.4 Application for certification of JIS Z 2305 through a transition

An applicant who passes the transition examination and the recertification examination shall provide only documentary evidence of vision acuity and color vision.

7.5 Period of validity of certification and recertification

7.5.1 Period of certificate validity

A certificate is valid for five years after its date of issue.

7.5.2 Renewal of a certificate

Before expiration of the first period of validity (five years), certification may be renewed for a new five year period of the same duration, provided the certificate holder supplies documentary evidence of:

- (1) satisfactorily meeting the vision requirements during the preceding one year, and
- (2) continued satisfactory work activity, relevant to the certification, without significant interruption for more than one year.

7.5.3 Recertification

Before completion of each second period of validity, the certificate holder may be recertified provided renewal requirements of clause 7.5.2 above have been met and the recertification examination is passed.

Note Where gender specific words such as he, his, she or her appear in this document, the other gender is also applicable.