



# Certification Body for Non Destructive Testing Personnel (CBNDT)

Atomic Energy Board - Sri Lanka

C/O; National Centre for Non Destructive Testing (NCNDT)

977/18, Bulugaha Junction, Kandy Road, Kelaniya, Sri Lanka

Tel. 0112987854-5 Fax 0112987851

E-mail:cbndt@aeb.gov.lk

## Brochure for Certification Information

### 1. Initial Certification Requirements

The candidates shall fulfil following requirements to be eligible for initial certification.

- Proof of vision
- Proof of NDT training
- Proof of industrial NDT experience
- Proof of successful qualification examination.

#### 1.1. Vision Requirements

The candidate seeking for certification in all methods and levels shall provide documented evidence of satisfactory vision, in accordance with following requirements:

- Near vision shall permit reading a minimum of Jaeger number 1 or Times Roman N4.5 or equivalent letters(having a height of 1,6mm) at not less than 30 cm with one or both eyes, either corrected or uncorrected;
- Colour vision shall be sufficient that the candidate can distinguish and differentiate contrast between the colours or shades of grey used in the NDT method concerned, as specified by the employer.

#### 1.2. Training Requirements

- For all levels, the candidate shall satisfactorily complete a course of theoretical and practical training recognized by the CBNDT.
- The candidates shall fulfil minimum requirement of training prior to qualification examination to be eligible for certification. The minimum duration of training undertaken by the candidate for certification in particular NDT method is given in Table 1. Training hours include both theoretical and practical lessons.
- Direct access to level 2 requires the total hours shown in Table 1 for Levels 1 and 2.
- Direct access to level 3 requires the total hours shown in Table 1 for Levels 1, 2 and 3. When considering Part C of the basic examination for Level 3, additional training about the other NDT methods is necessary.

Table 1 - minimum requirements for the training

NDT method	Level 1 (hours)	Level 2 (hours)	Level 3 (hours)
ET	40	48	48
MT	16	24	32
PT	16	24	24
RT	40	80	40
UT	40	80	40
VT	16	24	24

Note: For RT, training hours do not include radiation safety training

- "Training Guidelines in Non-destructive Testing Techniques-2013 Edition (IAEA-TECDOC-628/Rev. 3)"includes the syllabus for NDT training courses. It is freely available for downloading (ref.[http://www-pub.iaea.org/MTCD/Publications/PDF/TE-628-REV3\\_web.pdf](http://www-pub.iaea.org/MTCD/Publications/PDF/TE-628-REV3_web.pdf)).

### Certification Body for Non Destructive Testing

Title: Brochure for Certification Information

Doc No: CBNDT/INF/BCI

Page: 01 of 09

Rev No: 03

Date of Rev: 18-09-2017

### 1.3. Qualification requirements

#### 1.3.1. Level 1 and level 2 certification

- Written examination- The candidates must have obtained a minimum grade of 70 % in each of the written examinations i.e. General, Specific and Radiation Safety (for RT only) examinations, of the particular NDT method.
- Practical examination- The candidates must have obtained a minimum of 70 % for each specimen tested.

#### 1.3.2. Level 3 certification

- Basic examination-The candidate must have obtained a minimum of 70 % in each of the three parts of Basic examination.
- Main-method examination-The candidate must have obtained a minimum of 70 % in each of the three parts of Main-method examination.

### 1.4. Industrial Experience requirements

#### 1.4.1 General information

- The minimum period of experience in the sector, for which the candidate seeking certification, is given in Table 2.
- When a candidate seeks certification in more than one method, the total experience time equals to the sum of experience in each method.
- For all levels a minimum period of experience prior to examination shall be obtained.
- The application for certification must be submitted within two years after the qualification exam to CBNDDT, even if the required experience times of certification are not sufficient.

Table 2 - minimum requirements for the industrial NDT experience

NDT method	Experience (months)		Experience (hours)	
	ET, RT, UT	MT, PT, VT	ET, RT, UT	MT, PT, VT
Level 1	3	1	480	160
Level 2 access as level 1	9	3	1440	480
Level 2 direct access	12	4	1920	640
Level 3 access as level 2 (Type 1)	18	12	2880	1920
Level 3 access as level 2 (Type 2)	36	24	5760	3840
Level 3 access as level 1 (Type 1)	27	15	4320	2400
Level 3 access as level 1 (Type 2)	45	27	7200	4320

Industrial experience in months is based on a nominal 40h week or the legal week of work. When an individual is working in excess of 40 hrs weeks, he may be credited with experience based on the total hours, but he shall be required to produce evidence of this experience.

Ex: UT Level 2 Direct Access

Minimum required Industrial experience = 12 months = 12\*4weeks\*(40 hours/week) = 1920 hours  
 An individual works 10 hours per week in UT for 14 months will actually be having 560 hours only.  
 (10\*4\*14 = 560 hrs)

#### 1.4.2 Acquisition of Industrial NDT Experience

- Candidates, either employed, self-employed or unemployed, are encouraged to maintain verifiable evidence (ex: Industrial experience log book, test reports, etc), that they have acquired the necessary experience under a qualified supervision and shall produce it to CBNDDT when requested.

- The qualified supervision is supervision of candidates in acquiring experience through NDT personnel, which is certified in the same way or by personnel who have the knowledge, skills, training and experience, which are necessary for the correct performance of such oversight.
- Applicants are encouraged to maintain an industrial experience log book on the method apply for certification. The log book shall at least include:
  - Date
  - Description of the work and Equipment used
  - Work place
  - Number of working hours or Number of Radiographs
  - Signature of Supervisor
- Evidence of the experience in the certification application must be confirmed by the employer or the qualified supervisor. If the candidate is unemployed the declaration of the experience must be confirmed by at least one independent party. Following acknowledgments are accepted by the CBNDDT: confirmations by the former employer, customer, client, temporary employment agencies, and internships at accredited training organizations, etc.

#### 1.4.3 Level 1 & Level 2

- For Level 2 certification, industrial experience is work performed as a Level 1. If the individual is being certified directly to Level 2, with no time at Level 1, the experience shall consist of the sum of the times required for Level 1 & Level 2. In this case, no reduction in the experience period is allowed.

#### 1.4.4 Level 3

- Responsibilities of level 3 requires skills that go beyond the technical scope of any specific NDT method. This comprehensive knowledge can be achieved through various combinations of education, training and experience.
- Table 2 describes exactly the minimum experience for level 3 candidates of Type 1 and Type 2.
 

Type 1: Candidates who have successfully completed a technical school or at least two years Of engineering or science study at a college or University.

Type 2: Candidates who have not successfully completed a technical school or at least two Years of engineering or science study at a college or University.
- For Level 3 certification, industrial experience is work performed as a Level 2. If the individual is being certified directly from Level 1 to Level 3, with no time at Level 2, the experience shall consist of the sum of the times required for Level 2 & Level 3. In this case, no reduction in the experience period is allowed.

#### 1.4.5 Reduction Opportunities

- The possible reductions of experience are as described hereafter, provided that, when several reductions are applicable, the total reduction does not exceed 50% of the experience duration.
- Any reduction requires the approval of the certification authority.
- Credit for industrial experience may be gained simultaneously in two or more of the NDT methods. The reduction of total required experience as follows:
  - Two testing methods, reduction of total required time by 25 %;
  - Three testing methods, reduction of total required time by 33 %;
  - Four or more testing methods, reduction of total time by 50 %.
- In all cases the candidate shall be required to show that, for each of the NDT method / sector combinations for which he seeks certification, he has at least half of the experience required, and this shall never be less than one month in duration.

<b>Certification Body for Non Destructive Testing</b>		
<b>Title:</b> Brochure for Certification Information		<b>Doc No:</b> CBNDDT/INF/BCI
<b>Page:</b> 03 of 09	<b>Rev No:</b> 03	<b>Date of Rev:</b> 18-09-2017

- Experience duration may be reduced by up to 50 % (but shall not be less than one month) when the certification sought is limited in application e.g. UT thickness measurement or automated testing.
- Up to 50 % of the practical experience time may be achieved by an appropriate practical course, the duration of which may be weighted by a factor of five (5).

## 2. Responsibilities

### 2.1. Applicants/Candidates

Applicants/candidates, whether employed, self-employed or unemployed shall:

- provide documentary evidence of satisfactory completion of a course or of training;
- provide verifiable documentary evidence that the required experience has been gained under qualified supervision;
- provide documentary evidence of vision satisfying the requirements
- abide by the code of ethics published by the certification body.

### 2.2. Certificate Holders

Certificate holders shall:

- abide by the code of ethics published by the certification body;
- undergo an annual test of visual acuity, and submit the results of tests to the employer;
- notify the certification body and the employer in the event that the conditions for validity of certification are not fulfilled.

## 3. Duties/Rights of Certified individuals

### 3.1. Level 1

An individual certified to level 1 has demonstrated competence to carryout NDT according to written instructions and under the supervision of Level 2 or Level 3 personnel. Within the scope of the competence defined on the certificate, Level 1 personnel may be authorized by the employer to perform the following in accordance with NDT instructions:

- setup NDT equipment;
- perform the tests;
- record and classify the results of the tests according to written criteria;
- report the results.

Level 1 certified personnel shall neither be responsible for the choice of test method or technique to be used, nor the interpretation of test results.

### 3.2. Level 2

An individual certified to Level 2 has demonstrated competence to perform NDT according to NDT procedures.

Within the scope of the competence defined on the certificate, Level 2 personnel may be authorized by the employer to:

- select the NDT technique for the testing method to be used;
- define the limitations of application of the testing method;
- translate NDT codes, standards, specifications and procedures into NDT instructions adapted to the actual working conditions;
- set up and verify equipment settings ;
- perform and supervise tests;

<b>Certification Body for Non Destructive Testing</b>		
<b>Title:</b> Brochure for Certification Information		<b>Doc No:</b> CBNDDT/INF/BCI
<b>Page:</b> 04 of 09	<b>Rev No:</b> 03	<b>Date of Rev:</b> 18-09-2017

- vi. interpret and evaluate results according to applicable standards , codes , specifications or procedures;
- vii. carryout and supervise all tasks at or below Level 2
- viii. provide guidance for personnel at or below Level 2
- ix. report the results of NDT.

3.3. Level 3

An individual certified to Level 3 has demonstrated competence to perform and direct NDT operations for which he is certified. Level 3 personnel have demonstrated:

- i. the competence to evaluate and interpret results in terms of existing standards , codes and specifications;
- ii. sufficient practical knowledge of applicable materials, fabrication, process, and product technology to select NDT methods , establish NDT techniques, and assist in establishing acceptance criteria where none are otherwise available;
- iii. a general familiarity with other NDT methods.

Within the scope of competence defined on the certificate, Level 3 personnel may be authorized to:

- i. assume full responsibility for a test facility or examination center and staff;
- ii. establish, review for editorial and technical correctness, and validate NDT instructions and procedures;
- iii. interpret standards , codes, specifications and procedures;
- iv. designate the particular test methods procedures and NDT instructions to be used
- v. carry out and supervise all tasks at all levels;
- vi. provide guidance for NDT personnel at all levels.

4. Submission of Certification Application

- Applicants may apply for certification in six conventional NDT methods (MT, PT, UT, RT, ET and VT) for Level 1 to Level 3.
- Candidates, whether employed, self-employed or unemployed shall abide by the code of ethics published by the certification body.
- Candidates shall complete and submit a correctly completed certification application form after the examination (not later than two years) and when the required experience is gained for each method along with a covering letter and all supporting documents to:

OIC - Certification Unit,  
 Certification Body for NDT - Sri Lanka,  
 C/O; National Centre for Non Destructive Testing (NCNDT),  
 No.977/18,  
 Bulugaha Junction,  
 Kandy Road,  
 Kelaniya.

Late submissions

Candidates apply for certification later than two years after the examination shall be re-qualified through a re-certification examination according to scope of certification.

<b>Certification Body for Non Destructive Testing</b>		
<b>Title:</b> Brochure for Certification Information		<b>Doc No:</b> CBNDDT/INF/BCI
<b>Page:</b> 05 of 09	<b>Rev No:</b> 03	<b>Date of Rev:</b> 18-09-2017

5. NDT Initial Certification Fee

Note: The fee for the initial certification does not include fee for certification examination.

Table 3: Initial Certification Fee

Application Number	Fee(Rs)	Cumulative Fee(Rs)
1st	3000.00	3000.00
2nd	2250.00	5250.00
3rd	2250.00	7500.00
4th	2250.00	9750.00
5th	2250.00	12000.00
6th	2250.00	14250.00
7th	2000.00	16250.00
8th	2000.00	18250.00
9th	2000.00	20250.00
10th	2000.00	22250.00
11th	2000.00	24250.00
12th	2000.00	26250.00
13th	1500.00	27750.00
14th	1500.00	29250.00
15th	1500.00	30750.00
16th	1500.00	32250.00
17th	1500.00	33750.00
18th	1500.00	35250.00

6. Renewal of Certification

Prior to the completion of the first period of validity and every 10 years thereafter, certification may be renewed by the CBNDT for a new period of five years.

It is the responsibility of the certificate holder, to submit completed and signed renewal application to the CBNDT. All documents for the renewal (original certificate on expiry of the period, documentary evidence of satisfactorily fulfilling the vision requirements, documentary evidence of continued satisfactory work activity relevant to the certification during the preceding 12 months and without significant interruption) shall be submitted within six months before the expiry date of the certification to the OIC-Certification Unit of CBNDT.

As an exception, and based upon decision of CBNDT, files presented within 12 months after the date of expiration may be considered. Given a written explanation must be submitted to the CBNDT in addition to the application. After the period of twelve (12) months after the expiration date no longer an exception is allowed and the candidate must pass a recertification exam successfully in order to be re-certified.

7. Re-Certification

Prior to the completion of the second period of validity (every 10 years), the certified individual may be recertified by the CBNDT for a new period of five years.

It is the responsibility of the certificate holder, to submit completed and signed recertification application to the CBNBDT. Duly completed recertification examination application forms shall be submitted to MA-Examination Committee and all documents for the recertification (eye examination report form and recertification application form) shall be submitted to the OIC-Certification Unit of CBNBDT within twelve (12) to six (6) months before the expiry date of the renewed certification. Once the application form is received, MA-Examination Committee coordinates with chairman-EC and informs the candidate a date for the recertification examination.

#### Re-certification of Levels 1 and 2

The individual shall successfully complete a practical examination which demonstrates continued competence to carry out work within the scope of the certificate. For Level 2, the production of a written instruction suitable for the use of Level 1 personnel is required.

#### Re-certification of Level 3

Level 3 certificate holder seeking re-certification must provide evidence of continued qualification confirmed by:

- Satisfying the Level 3 requirements for a written examination\*;
- Meeting the requirements for a structured credit system, as specified in Appendix A.

The certified person may decide between the written examination and the credit system for recertification. When the credit system is selected, the delivery of documents of the employer or the access is required to premises of the employer. The applicant shall provide to the CBNBDT a written statement of approval from the employer for accessing employer's premises and related documents.

The following three combinations are accepted by the CBNBDT for recertification in level 3:

Combination 1: Written exam + level 2 practical exam except drafting of NDT instructions

Combination 2: Written exam + documented evidence of continued practical competence

Combination 3: Structured credit system + level 2 practical exam except drafting of NDT instructions

#### **Note 1:**

CBNBDT recertification is not possible based on the combination of "structured credit system" + "proof of continuing practical ability".

#### **Note 2: written examination\***

The individual shall successfully complete an examination that includes a minimum of twenty (20) questions on the application of the test method in the sector(s) concerned which demonstrates an understanding of current NDT techniques, standards, codes or specifications, and applied technology and, five additional questions on the requirements of the certification scheme.

#### Late submissions

If the recertification is applied for more than 12 months after expiry of the period of validity of Level 1 renewed certificate, a complete examination (general, specific, and practical) for Level 1 shall again be passed successfully.

If the recertification is applied for more than 12 months after expiry of the period of validity of Level 2 renewed certificate, a complete examination (general, specific, and practical) for Level 2 shall again be passed successfully.

<b>Certification Body for Non Destructive Testing</b>		
<b>Title:</b> Brochure for Certification Information		<b>Doc No:</b> CBNBDT/INF/BCI
<b>Page:</b> 07 of 09	<b>Rev No:</b> 03	<b>Date of Rev:</b> 18-09-2017

If the recertification is applied for more than 12 months after expiry of the period of validity of Level 3 renewed certificate, a main method examination for Level 3 shall again be passed successfully.

**Table 4 – Structured credit system for Level 3 recertification**

Item	Activity	Point accorded for each item (or function)	Maximum points per year per item	Maximum point per 5 year period per item
1	Membership of an NDT society, attendance at seminars, symposia, conferences and/or course covering NDT and related sciences and technologies	1	3	8 <sup>a</sup>
2.1	Attendance at international and national standardization committees	1	3	8 <sup>a</sup>
2.2	convenorship of standardization committees	1	3	8 <sup>ab</sup>
3.1	Attendance at sessions of the other NDT committees	1	3	8 <sup>a</sup>
3.2	convenorship of sessions of the other NDT committees	1	3	8 <sup>ab</sup>
4.1	Attendance at Sessions of NDT related working group	1	5	15 <sup>a</sup>
4.2	convenorship of NDT related working group	1	5	15 <sup>ab</sup>
5.1	NDT related technical/scientific contribution or publications	3	6	20 <sup>cd</sup>
5.2	NDT related research work published	3	6	15 <sup>cd</sup>
5.3	NDT research activity	3	6	15 <sup>cd</sup>
6	NDT technical instructor (per 2h) and/or NDT examiner (per examination)	1	10	30 <sup>d</sup>
7	Professional activity	-	-	-
7.1	within a NDT facility, NDT training center or NDT examination facility or for Engineering of NDT (See Annex E of ISO 9712:2012) (for each full year)	10	10	40 <sup>d</sup>
7.2	Dealing with disputes referring to clients	1	5	15 <sup>d</sup>
7.3	Development of NDT applications	1	5	15 <sup>d</sup>
<p>a Maximum points for item 1 to 4: 20  b point to be given for both convenorship and attendance  c if there is more than one author, the lead author shall define point for the other authors  d Maximum points for each of item 5 and 6: 30 and 7: 50</p>				



## Appendix A-Structured credit system for Level 3 re-certification

In this system, the Level 3 candidate gains credit for participation, during the five years prior to recertification, in the various NDT activities shown in following table. Limits are placed on the maximum number of points which can be gained in each year, and in any activity over the five years, to ensure an even spread of activities.

To be eligible for recertification:

- a. A minimum of 70 points during the five year validity of the certificate;
- b. A maximum of 25 points per year are accepted.

In addition to the recertification application, the candidate shall submit evidence of satisfying the criteria of Table 4 as follows.

- Agenda and list of attendees for the meetings under items 1 to 4;
- A brief description of research and development under item 5;
- References of technical or scientific publications authored under item 5;
- A summary of training delivered under item 6;
- For each certificate, evidence of work activity per under item 7.

Director – NCNDT (Technical Advisory Committee Member)  
Certification Body for NDT  
Sri Lanka

Certification Body for Non Destructive Testing		
Title: Brochure for Certification Information		Doc No: CBNDT/INF/BCI
Page: 09 of 09	Rev No: 03	Date of Rev: 18-09-2017