

No.	SC-01
Revision No.	02
Date	18-12-2022

1 of 31

NDT Certification Scheme

Contents

Certification Committee

Originator	Approved by	Signature	Page
The following work activities may	be considered as a	cceptable:	28
A.1 Performance of NDT activities	S		28
Structured credit system for renewal Level 1, 2 and 3 and for Level3 recertification			
Annex A			28
Conduct of examinations			27
(Clause 8.4 E) A job or practice analy	sis that is conducte	ed and updated to	26
(Clause 8.4 D) the identification and requirements	•		•
(Clause 8.4 C) the identification and requirements	-		
(Clause 8.4 B) the use of an appropr significantly concerned, without any			
(Clause 8.4 A) the involvement of ap	propriate experts		25
(Clause 8.3 E) criteria for changing the	he scope or level of	certification (if applicable)	25
(Clause 8.3 D) criteria for suspending	g and withdrawing	certification	24
(Clause 8.3 C) surveillance method			
(Clause: 8.3 B) assessment methods			
(Clause: 8.3 A) Criteria for initial cert			
(Clause: 8.2 F) code of conduct "who			
(Clause: 8.2 E) prerequisites "when a			
(Clause: 8.2 C) required competence (Clause: 8.2 D) abilities "when applied			
(Clause: 8.2 B) job and task description			
(Clause: 8.2 A) Scope of certification			
Introduction			

Director



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Introduction

Since the effectiveness of any application of non-destructive testing (NDT) depends upon the capabilities of the persons who perform or are responsible for the test, a QCCO's scheme has been established to provide a means of evaluating and documenting the competence of personnel whose duties require the appropriate theoretical and practical knowledge of the non-destructive tests they perform, specify, supervise, monitor or evaluate.

When certification of NDT personnel is required in product standards, regulations, codes or specifications, it is important to certify the personnel in accordance with this document according to the criteria and specific requirements within this document.

When there is no requirement in legislation, in standard or in the order for certification of NDT personnel, it is for employers of such personnel to decide how to assure themselves that they are competent to do the work assignments. Thus, they may employ people who are already certified or they may apply their own expertise so as to assure themselves that their employee has the necessary competence. In this last case, prudent employers would no doubt use this document as a reference document as it is complaint with international specification **ISO-9712-2021**.

For the purposes of this document, the abbreviated terms listed in below table are used to identify NDT methods.

Table of NDT Methods and abbreviated terms

NDT method	Abbreviated terms
Eddy current testing	ET
Magnetic testing	MT
Penetrant testing	PT
Radiographic testing	RT
Ultrasonic testing	UT
Visual testing	VT

Originator	Approved by	Signature	Page
Certification Committee	Director		2 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

(Clause: 8.2 A) Scope of certification

This certification scheme describes Quality Control CO. system for the qualification and certification of personnel who performing non-destructive testing (NDT) methods in the sectors as shown in Table -1 below.

Table - 1: The NDT methods and the sectors are in which certification is available are:

Sector	Non-Destructive Test Method							
	Ultrasonic (UT) L I, II & III	Phased Array (PAUT)L I, II & III	Penetrant (PT)L I, II & III	Magnetic Test (MT) L I, II & III	Radiography (RT) L I, II & III	RTFI L II	Eddy Current (ET) L I, II & III	Visual Test (VT) L I, II & III
Product-	Welds	Welds	Welds	Welds	Welds	Welds	Welds	Multi-Sector
metallic	Wrought Products	Wrought Products	Wrought Products	Wrought Products	Wrought Products		Tube & Pipes	Wrought Products
materials	Tube & Pipes	Tube & Pipes	Tube & Pipes	Tube & Pipes	Tube & Pipes			Tube & Pipes
	Aerospace	Aerospace	Aerospace	Aerospace	Aerospace		Aerospace	Aerospace
Industrial	Railway Maintenance	Railway Maintenance	Railway Maintenance	Railway Maintenance	Railway Maintenance		Railway Maintenance	Railway Maintenance
	Pre & in- service	Pre & in- service	Pre & in- service	Pre & in- service	Pre & in- service	Pre & in- service	Pre & in- service	Pre & in- service

(Clause: 8.2 B) job and task description

The Certification is Measuring a candidate who perform industrial non-destructive testing (NDT) the understanding of:

- NDT methods principles
- The best way to deal with NDT equipment
- The quality of the NDT accessories used and how to select them to suit the purpose
- Protection against radiation
- NDT applications and Techniques

• For NDT Level I

An individual certified to Level 1 has demonstrated competence to carry out NDT according to written instructions and under the supervision of Level 2 or Level 3 personnel. Within the scope of the

Originator	Approved by	Signature	Page
Certification Committee	Director		3 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

competence specified on the certificate, Level 1 personnel may be authorized by the employer to perform the following in accordance with NDT instructions:

- set up the equipment.
- perform the tests.
- record and classify the results in accordance with documented criteria.
- report on the results.
- He shall not be responsible for the choice of the test method or technique to be used.

For NDT Level II

An individual certified to Level 2 has demonstrated competence to perform NDT according to NDT procedures or NDT instructions. Within the scope of the competence specified on the certificate, Level 2 personnel may be authorized by the employer to:

This may include:

- a) select the NDT technique for the testing method to be used;
- b) specify the limitations of application of the testing method;
- c) translate NDT codes, standards, specifications, and procedures into NDT instructions adapted to the actual working conditions;
- d) set up and verify equipment settings;
- e) perform and supervise tests;
- f) interpret and evaluate results according to applicable standards, codes, specifications or procedures;
- g) carry out and supervise all tasks at or below Level 2;
- h) provide guidance and mentoring for personnel at or below Level 2;
- i) report the results of NDT.

For NDT Level III

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

- a) the competence to evaluate and interpret results in terms of existing standards, codes, and specifications;
- b) sufficient practical knowledge of applicable materials, fabrication, process, and product

Originator	Approved by	Signature	Page
Certification Committee	Director		4 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

technology to select NDT methods, establish NDT techniques, and assist in establishing acceptance criteria where none are otherwise available;

- c) a general familiarity with other NDT methods Within the scope of the competence specified on the certificate, Level 3 personnel may be authorized by the employer to:
 - a) establish, review for editorial and technical correctness, and validate NDT instructions and procedures;
 - b) interpret standards, codes, specifications, and procedures;
 - c) designate the particular test methods, procedures, and NDT instructions to be used;
 - d) carry out and supervise all tasks at all levels;
 - e) provide guidance and mentoring for NDT personnel at all levels.
 - f) the ability to train or guide personnel level 3

(Clause: 8.2 C) required competence

As a minimum high school graduate with a good skill in English language and achieve both abilities & Perquisitions below for Level I & Level II. QCCO certified Level 3 personnel competency should include:

- a. The professional evaluation and interpretation of results in terms of existing standards, codes, and specifications.
- b. Sufficient practical knowledge of applicable materials, fabrication, process, and product technology to select NDT methods,
- c. The competency to establish NDT techniques and assist in establishing acceptance criteria where none is otherwise available.
- d. A general familiarity with other NDT methods. Within the scope of the competence defined on the OCCO certificate.

(Clause: 8.2 D) abilities "when applicable"

Originator	Approved by	Signature	Page
Certification Committee	Director		5 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

For all levels before certification a Candidate must provide evidence of satisfactory vision as follows:

Near vision acuity

Prior to certification, and annually thereafter, near vision acuity shall be verified to be in accordance with the requirements of ISO 18490 or shall permit reading a minimum of Jaeger number 1 or Times Roman N4.5 or equivalent letters at not less than 30 cm with one or both eyes, either corrected or uncorrected.

Colour vision

Prior to certification, recertification or renewal, the candidate/certificate holder shall demonstrate that a colour vision test has been administered within the previous 5 calendar years. It is required that colour vision and/or grey scale perception be sufficient for the individual to be able to distinguish and differentiate between the colours or shades of grey used in the NDT methods/ techniques concerned as specified by the employer. The colour vision test shall either confirm that the individual has acceptable colour vision without restriction or shall state any limitation(s) on colour perception. Where any limitation in colour perception exists, the employer shall confirm whether or not this condition results in any limitation(s) to method or application specific techniques.

Personnel administering vision tests

Near vision acuity testing, colour vision and/or grey scale perception verification(s) shall be administered by a licensed physician, nurse, ophthalmologist or optometrist; or by another trained professional who is approved and documented by Level 3 personnel acting on behalf of the employer.

(Clause: 8.2 E) prerequisites "when applicable"

TRAINING HOURS AND EXPERIENCE REQUIREMENTS:

Training Requirements:

- The candidate shall provide acceptable documentary evidence, to QCCO as shown in Table 2, that he has satisfactorily completed training in the method and level for which the certification is sought, in one of the entities that have a commercial registry and a tax card where it is referred to.
- For all levels, the candidate shall satisfactorily complete a course of theoretical and practical training recognized by QCCO as per ISO/TR 25107 & ISO/TR 25108. Theoretical training may be delivered in a face-to-face instructor-led format, distance learning format, a self-paced format, or a combination of these formats. Practical training shall

Originator	Approved by	Signature	Page
Certification Committee	Director		6 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

be delivered by a face-to-face instructor-led format only. The training for initial certification shall remain valid for a maximum period of ten years from the date of completion.

For Level 3, in addition to the minimum training requirements given in Table 2, the preparation for qualification can be completed in different ways dependent on the scientific and technical background of the candidate, including attendance at other training courses, conferences or seminars, studying books, periodicals and other specialized printed or electronic materials.

When a distance learning option is utilized, systems shall be established to ensure the entire training syllabus is completed.

- The minimum duration of training undertaken by the candidate for certification shall impart the skills and knowledge and shall not be less than that specified in Table 2 for the applicable NDT method. Direct access to Level 2 requires the total days shown in Table 2 for Levels 1 and 2. Direct access to Level 3 requires the total days shown in Table 2 for Levels 1, 2, and 3.
- This duration is based upon candidates possessing mathematical skills and prior knowledge of materials and processes that can be confirmed by appropriately screening of completed prior education. If it is not the case, additional training on this matter may be required by the certification body.
- Training days include both practical and theoretical courses.
- The possible reductions in training duration are as described hereafter, provided that, when several reductions are applicable, the total reduction does not exceed 50 % of the training duration. Any reduction requires acceptance by the certification body and shall ensure that competence is maintained.

a) For all levels:

- for candidates seeking certification in more than one method (i.e. MT, PT), or for those already certified and seeking certification in another method, when the training syllabus concerned duplicates certain aspects (i.e. product technology), the total number of training days for these methods (i.e. PT, MT, VT) may be reduced in line with the training syllabus;
- for candidates who have graduated in a relevant subject from technical college or university, or have completed at least two years of relevant engineering or science study at college or university (or equivalent formal education), the total required training duration may be reduced by up to 50 %; the certification body

Originator	Approved by	Signature	Page
Certification Committee	Director		7 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

shall specify relevant subjects and their qualification.

- b) For Levels 1 and 2, when the scope of activity is limited in application and/or in technique (and not covered in table 3 & table 4), the training scope and duration may be reduced by up to 50 %.
- For RTFI certification, Candidate shall submit evidence of 1000 radiographs review, otherwise he shall undergo a 250 films review in the training approved facility.
- Applicants are not obligated to obtain training in a specific entity, it is only required a
 proven that they have spent the required training hours to approve applications to
 apply for certification in accordance with ISO 9712-2021.

Table 2 — Minimum training requirements

	0 1		
NDT method	Level 1	Level 2	Level 3
NDT method	days ^a	days ^a	days ^a
ET	5	6	6
MT	3	2	4
PT	3	2	3
RT ^b	5	10	5
UT	8	10	5
VT	3	2	3

^a One day duration is at least seven hours, which can be achieved on a single day or by accumulating hours.

NOTE 1 In the case of specific techniques, see table 3 & table 4.

Table 3 — Ultrasonic testing (UT) techniques additional training requirements

Tachnique	Abbreviated term	Trainir	g requirements	(days)
Technique	Appreviated term	Level 1	Level 2	Level 3
UT	(as per <u>Table 2</u>)	8	10	5
Phased array	UT- PA	5	5	N/A

Table 4 — Radiographic testing (RT) techniques training requirements

Technique	Technique with	Abbreviated	Trainin	g requirements	s (days)
reciiiique	limited scope	term	Level 1	Level 2	Level 3
Film		RT – F	5	10	5
	RT Film interpreta- tion	RT – FI	N/A	8	N/A

Originator	Approved by	Signature	Page
Certification Committee	Director		8 of 31

For RT, training days does not include radiation safety training.



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Industrial Experience Requirements:

- The minimum duration of industrial experience to be gained in the method where the candidate is seeking certification shall be as given in Table 5, with the possible reductions as follows:
 - Any reduction shall require acceptance by the certification body.
 - A certified Level 1, 2 or 3 adding an additional method may be permitted a reduction of required experience of 25 % for that additional method.
 - A certified Level 1, 2 or 3 individual changing sector, adding another sector or technique for the same NDT method shall be required to gain additional experience of at least 25 % of the experience required in <u>Table 5</u>; and this shall never be less than 15 days in duration.
 - When the scope of certification sought is limited in application (i.e. thickness measurement or automated testing), experience duration may be reduced by up to 50 % but shall not be less than 15 days.
 - Up to 50 % of the industrial experience time may be achieved by a structured experience program (SEP). One day of attendance at the SEP may be equivalent to a maximum of five days industrial experience. The SEP shall include all typical tasks (see <u>Clause 6</u>) of the level, method and sector concerned. The additional intent is to gain specific product and technique knowledge. The SEP shall be approved in advance by the certification body and shall be available for audit by the certification body.
- When the candidate is seeking certification in more than one method, the total time of experience shall be the sum of the experience in each method.
- For all levels, a minimum period of experience prior to examination shall be specified by certification body (a fraction or percentage of the total requirement in Table 5, as appropriate). In the event that a part of the experience is sought following successful examination, the results of the examination shall remain valid for a maximum of five years.
- Documentary evidence of experience shall be confirmed by the employer or the referee and submitted to the certification body.
- Level 3 responsibilities require knowledge beyond the technical scope of any specific NDT method. This broad knowledge may be acquired through a variety of combinations of education, training and experience. Table 3 details minimum experience for candidates who have successfully completed higher education, as well as candidates without higher education.

Originator	Approved by	Signature	Page
Certification Committee	Director		9 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Table 5 — Minimum industrial experience

Experience in days ^a									
NDT method	d Level 1 Level 2 Level 3								
		with Level 1	direct access	higher education, with Level 2	with Level 2	direct access with higher education			
ET, RT,UT	45	135	180	270	450	540			
MT, PT, VT	15	45	60	180	240	360			

^a One-day duration is at least seven hours, which can be achieved on a single day or by accumulating hours. The maximum allowable hours in any one day is 12 hours. Experience in days is achieved by dividing the total accumulated hours by 7.

(Clause: 8.2 F) code of conduct "when applicable"

Code of conduct for certified persons

The Certified professional, shall comply with the following during the execution of his duties:

- Act according to the code of conduct of his specific profession.
- Act fairly, professionally, and ethically.
- Undertake professional obligations for which he is certified.
- Not use his certification for a specialty other than the one specified by the Certification Scheme for which he is certified.
- Not undertake professional obligations that he has not the ability or technical competence or authorization to implement.
- With his professional judgment, he shall not jeopardize the human life or its safety, not damage any property and not cause unreasonable environmental pollution.
- The Level 3 certified persons shall not to use their certification in a misleading manner.
- Considering the importance of quality of the materials used in fabrication, welded joints, in services products and also the consequences of its failure to individual life and society, the candidate should act with complete integrity and in a professional manner in applying the Nondestructive testing inspection and acceptance of the final product.
- Undertake and perform the inspection by nondestructive testing assignments only when qualified / certified to do so.

Originator	Approved by	Signature	Page
Certification Committee	Director		10 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

- The candidate should behave in a professional and disciplined manner which will not affect
 the safety and security of his fellow members associated in the manufacturing of the final
 product.
- The candidate's behavior towards his/her superiors, peers and sub-ordinates should be in line with organization's protocol.
- The candidates shall avoid any conflict of interest with the employer or the client and shall disclose any business association or circumstance that might be so considered.
- The Person need to sign the code of conduct agreement with QCCO.

(Clause: 8.3 A) Criteria for initial certification and recertification

A candidate who meets all certification requirements will be certified and this certification will be available through the issuance of hard copy certificate(s).

Initial certification would be done based on information (Education, training, skill & work experience) provided and after achieving pass marks in general, specific, and practical examinations. **Recertification** would be done after 5 years or when there is revision in the standard for which a person has been certified.

(Clause: 8.3 B) assessment methods for initial certification and recertification

Initial certification

- 1. Application along with documentary proof of basic information (Education, training, skill & work experience).
- 2. Signing of code of ethics.
- 3. Review of application form for ability and prerequisite required for certification program. If case candidate does not full fill the ability and prerequisite for certification program the application is declined.
- 4. For eligible candidates' exam is planned.

Originator	Approved by	Signature	Page
Certification Committee	Director		11 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

- 5. Examination Content (written/ practical):
- 5.1 For Level 1, the examination shall consist of the following examination elements:
 - general examination element;
 - specific examination element;
 - practical examination element
- **5.2 For Level 2 the examination** shall consist of the following examination elements:
 - general examination element;
 - specific examination element;
 - practical examination element;
 - NDT instruction writing element.
- **5.3 For Level 3 the examination** shall consist of the following examination elements:
 - basic examination element which consists of the following items:
 - item A technical knowledge;
 - item B certification body's document knowledge;
 - item C Level 2 knowledge of methods;
 - main method examination element which consists of the following items:
 - item D general examination;
 - item E specific examination;
 - item F NDT procedures.

Originator	Approved by	Signature	Page
Certification Committee	Director		12 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

— Assessment method for Level I & II:

• General examination element

The general examination shall include only questions selected in an unpredictable way from QCCO data bank of general examination questions valid at the date of examination. The candidate shall be required, as a minimum, to give answers to the number of multiple-choice questions shown in Table 6.

Table – 6 Qualification Examination Type, Questions & Time for Levels 1, 2 & 3

Level 1	Level 2	Level 3
NDT method Theory- General –2 Hrs Exam, Minimum 40 Quest5ions	NDT method Theory- General – 2 Hrs Exam, Minimum 40 Questions	Basic Exam – 4 Hrs Exam
Industry/Product Specific - 2 Hrs Exam, Minimum 20 Questions	Industry / Product Specific Examination- 2 Hrs Exam, , Minimum 20 Questions	Method exam – 4 Hrs Exam
NDT method Practical – 2 Hrs Exam	NDT method Practical – 3 Hrs Exam	
	NDT instruction writing	

• Specific examination Element

The specific examination shall include only questions selected from the QCCO data bank of specific questions related to the sector(s) concerned.

During the specific examination, the candidate shall be required to give answers to at least 20 multiple choice questions (as shown in table-6), including questions involving calculations, NDT procedures and questions on codes, standards and specifications.

• Practical examination Element

The practical examination shall involve applying the test to prescribed specimens, recording (and, for Level 2 candidates, interpreting) the resulting information to the degree required, and reporting the results in the required format. Specimens used for training purposes shall not be used for examination. Each specimen shall be uniquely identified and have a master report which includes all of the equipment settings used to detect specified discontinuities contained within the specimen, which shall be uniquely identified by an appropriate permanent marking to ensure that it is completely traceable. Such marking shall not interfere with the practical testing or inspection of the specimen and shall, wherever practicable, be concealed from the candidate while the specimen is being used for examination. The master report shall be compiled based upon at least two independent tests, and shall

Originator	Approved by	Signature	Page
Certification Committee	Director		13 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

be validated by a Level 3 certificate holder for use in grading examinations. The independent test reports from which the master report is compiled shall be retained as records. QCCO shall ensure that the number of areas or volumes to be tested is adequate to the level, NDT method and sector concerned, and that those areas or volumes contain reportable discontinuities. The requirements for the number of specimens and number of areas or volumes to be tested in the Level 1 and Level 2 practical examinations are given in Table no.7

Table - 7 number and type of specimens for the Level 1 and Level 2 practical examination element

Product sectors,		Method and level												
metallic materials	UT1	UT2	RT1	RT2	ET1	ET2	MT1	MT2	PT1	PT2	VT1	VT2	PAUT1	PAUT2
Welds	2	2	2	2 + 12 rs	2	2	2	2	2	2	2	2	1	1 + 2 ds
Tubes and pipes	2	2	2	2 + 12 rs	2	2	2	2	2	2	2	2	1	1 + 2 ds
Wrought products	2	2	2	2 + 12 rs	2	2	2	2	2	2	2	2	1	1 + 2 ds
Industrial sectors	UT1	UT2	RT1	RT2	ET1	ET2	MT1	MT2	PT1	PT2	VT1	VT2	PAUT1	PAUT2
Pre- and in- service testing	3 w	3 w	2 w	2 w +	3 tw	3 tw	3 w	3 w	3 w	3 w	3 w	3 w	1 tw	1 + 2 ds t w
				24 rs										
Railway maintenance	2	2	_	_	2	2	2	2	2	2	2	2	_	_
Aerospace	3	3	2	2 +	3	3	2	2	2	2	2	2	1	1 + 2 ds

The Level 1 candidate shall follow the NDT instruction(s) provided by the examiner.

The Level 2 candidate shall select the applicable NDT technique and determine the operating conditions related to a given code, standard or specification.

Originator	Approved by	Signature	Page
Certification Committee	Director		14 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

For all practical examination elements, candidates shall be required to test one or more sector specific specimen.

Where the practical examination requires the testing of more than one specimen, the second or any subsequent specimens shall be different in character, e.g. in product form, material specification, shape, size, and discontinuity type, from those tested previously.

For a product sector related practical examination elements, Candidates shall be required to test a minimum of two specimens and for multiple product sectors, a minimum of one from each product sector.

For an industrial sector related practical examination elements, Candidates shall be required to test at least two specimens, representative of products typically tested in the industrial sector.

Where a sector examination involves the testing of more than one product type, then the specimens tested shall be representative of all products or shall be selected at random by the examiner from the product range or materials which make up the sector.

A set of radiographs (12 or 24) shall be considered as one specimen.

For RTFI practical exam, 12 radiographs is considered one specimen required for interpretation.

Key: w 2 weld; t 2 tube; rs 2 radiographs; ds 2 datasets

NDT instruction writing examination element

The NDT instruction writing examination element shall involve the creation of a written NDT instruction by the Level 2 candidate.

For the weighting of the written examination instruction element, see the table 8

Table 8, Percentile weighting for NDT instruction writing examination element for Level 2:

ND	T instruction writing (Level 2 candidates)	% maximum
a)	foreword (scope, reference documents)	5
b)	personnel	5
c)	equipment/media to be used	5
d)	product (description or drawing, including area of interest and purpose of the test)	10
e)	test conditions, including preparation for testing	10
f) set	detailed instructions for application of the test, including tings	40
g)	recording and classifying of the test results	20
h)	reporting the results	5
TO	TAL	100

Originator	Approved by	Signature	Page
Certification Committee	Director		15 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

<u>Assessment method for Level III</u> Initial certification

General

All candidates for Level 3 certification in any NDT method shall have successfully completed (with a grade of \geq 70 %) the practical examination element for Level 2 in the relevant sector and method, except for the drafting of NDT instructions for Level 1. A candidate who is Level 2 in the same NDT method and product sector or who has successfully passed a Level 2 practical examination element for the NDT method in an industrial sector, is exempt from passing again the Level 2 practical examination element. This exemption is only valid for the product sectors covered by the industrial sector concerned and, in any other circumstances, the relevant sector is the sector in which the candidate seeks Level 3 certification. All candidates for Level 3 certification in any NDT method shall have successfully pass the following exams:

Basic examination

This written examination shall assess the candidate's knowledge of the basic subjects using at least the number of multiple-choice questions shown in Table 9. Examination questions shall be selected in an unpredictable way from the current collection of questions approved by the QCCO at the time of the examination.

Table 9 — Minimum required number of basic examination element questions for Level 3

Part	Subject	Number of questions
Α	Technical knowledge in materials science and process technology.	25
В	Knowledge of the certification body's qualification and certification system based on this International Standard. This may be an open book examination.	10
Ca	General knowledge of at least four methods as required for Level 2 and chosen by the candidate from the methods given in table 1. These four methods shall include at least one volumetric method (UT or RT).	15 for each test method (total 60)
^a For item C, the certification body may adjust the number of questions per method for methods impacted by evolving technology, increasing methods and techniques being added.		

It is recommended that the basic examination be passed first and remain valid, provided that the first main method examination is passed within five years after passing the basic examination. A candidate holding a valid Level 3 certificate is exempt from the need to retake the basic examination.

Originator	Approved by	Signature	Page
Certification Committee	Director		16 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Main method examination element

This written examination shall assess the candidate's knowledge of the main method subjects using the minimum required number of multiple-choice questions shown in Table 10. Examination questions shall be selected in an unpredictable way from the current collection of questions approved by the QCCO at the time of the examination.

Table 10 — Minimum required number of main method examination element questions

Part	Subject	Number of questions
D	Level 3 knowledge relating to the test method applied.	30
E	Application of the NDT method in the sector concerned, including the applicable codes, standards, specifications and procedures. This may be an open book examination in relation to codes, standards, specifications and procedures.	20
F	Drafting of one or more NDT procedures in the relevant sector. The applicable codes, standards, specifications and other procedures shall be available to the candidate.	
	For a candidate who has already drafted a NDT procedure in a successfully passed Level 3 examination, the certification body may replace the drafting of a procedure with the critical analysis of an existing NDT procedure covering the relevant method and sector, and containing errors and/or omissions.	
Applicable	aids shall be specified and communicated to candidates. These aids may	be provided by

QCCO for use in open-book examinations.

6. Grading of qualification examination:

a) For the Level 1 and Level 2

The general, specific, practical examinations and NDT instruction writing examination elements shall be graded separately, the examiner shall be responsible for the grading of the examinations by comparison with model answers, Pass score a minimum of 70 % in each test.

The general and specific parts of the examination are graded by comparing the replies given by the candidate against answer keys approved by the QCCO. Each correct reply scores 1 point and the mark attributed to the tests is the sum of the points obtained. For the final calculation, the mark of each test is expressed as a percentage. The grading of the practical examination shall be based on items 1 to 3 in Table 11, with the recommended weighting factors in relation to the level and method as applicable.

Table – 11 Subjects and weighting factors for grading — Practical examination element

Originator	Approved by	Signature	Page
Certification Committee	Director		17 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

ltem ^a	Subject	Weighting factor	
		Level 1 %	Level 2 %
1	Knowledge of the NDT apparatus, including the function and verification of the setting of the apparatus.	20	10
	The application of NDT to the specimen. This consists of the following parts:		
	for Level 2, selection of the techniques and determination of the operating conditions;		
	the preparation (surface condition) and visual examination of the specimen;the		
	setting up of the apparatus;	35	
2	the performance of the test;		20
	the operations after the test.		
3	The detection and reporting of the discontinuities and, for Level 2, their characterization (position, orientation, dimensions and type) and evaluation.	45	55
4	For Level 2, drafting the written instruction for Level 1.	_	15
а	^a Table 4 gives guidance on additional details on each item, which should be taken into account, as applicable by the examiner.		

For the Level 1 candidates to be eligible for certification, they shall obtain a minimum grade of 70 % on each examination element (general, specific and practical). For the practical examination element, a minimum grade of 70 % shall be obtained for each specimen tested. For the Level 2 candidates to be eligible for certification, they shall obtain a minimum grade of 70 % on each examination element (general, specific, practical and NDT instruction writing). For the practical examination element, a minimum grade of 70 % shall be obtained for each specimen testedand NDT instruction writing element, as applicable. The certification body or authorized qualification body may classify some discontinuities as mandatory to be detected and evaluated as unacceptable. The NDT instruction writing element shall be graded in accordance with table 8.

Table 12: Grading of Level 1 and Level 2 practical examination — guidance on the per-centile weighting:

Subject	% maximum (Level 1)	% maximum (Level 2)
Item 1 — Knowledge of the NDT equipment and/or NDT media:		
a) system and/or media knowledge and control;	10	5
b) validity of verifications and/or media.	10	5
Total	20	10
Item 2 — Application of the NDT method:		
a) preparation of the specimen (i.e. surface condition), including visual examination;	5	2

Originator	Approved by	Signature	Page
Certification Committee	Director		18 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

	for Level 2, the selection of the NDT technique and determination of operating conditions;	n/a	10
c) :	setting up of the NDT apparatus and performance of the test;	25	12
d)	d) post test procedures (i.e. demagnetization, cleaning, preservation).		2
Tota	I	35	26
ltem	3 — Detection of discontinuities and reporting:		
a) (detection of mandatory reportable indications;	20	18
	characterization of indications (if applicable with respect to the test method: type, position, orientation, apparent dimensions, etc.);	15	18
,	Level 2 evaluation against code, standard, specification or procedure criteria;	n/a	18
d)	production of the test report.	10	10
Tota	l	45	64
Tota	l items 1, 2 and 3	100	100

b) Grading of Level 3 qualification examinations

The grading of the basic and main method examinations shall be done separately. To be eligible for certification, a candidate shall pass both the basic and main method examinations.

For the three parts A, B, and C of the **basic examination**, in order to pass the basic examination, the candidate shall obtain a minimum grade of 70 % in each of parts A, B, and C.

In order to pass the main method examination, the candidate shall obtain a minimum grade of 70 % in each of parts D, E, and F.

See Table 13 for the recommended weighting of the written examination procedure.

Table 13 — Guidance on the percentile weighting for the Level 3 NDT procedure examination

Subject	% maximum
Part 1 — General:	
a) scope (field of application, product);	2
b) document control;	2
c) normative references and complementary information.	4
Sub-total	8
Part 2 — NDT personnel	2
Part 3 — Materials and equipment:	
a) main NDT equipment (including defining calibration status and pre-test serviceability checks);	10

Originator	Approved by	Signature	Page
Certification Committee	Director		19 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

b) ancillary equipment (reference and calibration blocks, consumables, measuring equipment, viewing aids, etc.).	10
Sub-total	20
Part 4 — Test piece:	
a) physical condition and surface preparation (temperature, access, removal of protective coatings, roughness, etc.);	1
b) description of area or volume to be tested, including reference datum;	1
c) discontinuities sought.	3
Sub-total	5
Part 5 — Performance of the test:	
a) NDT method(s) and technique(s) to be used;	10
b) setting up the apparatus;	10
c) conducting the test (including reference to NDT instructions);	10
d) characterization of discontinuities.	10
Sub-total	40
Part 6 — Acceptance criteria	7
Part 7 — Post test procedure:	
a) disposition of non-conforming product (labelling, segregation);	2
b) restoration of protective coatings (where required).	1
Sub-total	3
Part 8 — Production of the test report	5
Part 9 — Overall presentation	10
Grand total	100

- Renewal for Level 1 and 2

Prior to the completion of the period of validity following certification and recertification, certification shall be renewed for a new period of validity on production of:

- a) documentary evidence of a satisfactory near vision acuity examination taken within the preceding 12 months; and
- b) documentary evidence of a satisfactory colour vision and/or grey scale perception examination taken within the preceding 60 months; and
- c) verifiable documentary evidence of continued satisfactory work activity without significant interruption in the method and sector for which certificate renewal is sought;

and either:

d) successful completion of a practical examination element which demonstrates continued competence to carry out work within the scope specified on the certificate. This shall include testing specimens (Table 7) appropriate to the scope of recertification and in addition, for Level 2, the production of a written instruction suitable for the use of Level 1 personnel. If the individual fails to achieve a grade of at least 70 % for each specimen tested (weighted according to the guidance in Table 9), and, for Level 2, for the instruction, two reexaminations of the recertification examination shall be allowed after at least 7 days and within 12 months of the first attempt at the recertification examination. except that it shall consist of a minimum of 50 % of the examination specimens required by table 7; or

Originator	Approved by	Signature	Page
Certification Committee	Director		20 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

e) successfully meeting the requirements of the structured credit system as given in table 14 and Annex A.

If the criterion c) for renewal is not met, the individual shall complete the practical examination elements requirements in (d).

Renewal for Level 3

Prior to the completion of the period of validity following certification and recertification, certification shall be renewed for a new period of validity on production of:

- f) documentary evidence of a satisfactory near vision acuity examination taken within the preceding 12 months; and
- g) documentary evidence of a satisfactory colour vision and/or grey scale perception examination taken within the preceding 60 months; and
- h) verifiable documentary evidence of continued satisfactory work activity without significant interruption in the method and sector for which certificate renewal is sought;
- i) successfully meeting the requirements of the structured credit system as given in table 14.

- Recertification:

Level 1 and 2

Certification is for a limited period, five years initially, and must be renewed, either based on continuing work experience in the appropriate area or examination. After ten years recertification is based on examination. Prior to the completion of each second period of validity, the certified individual shall be recertified for a new period of five years or less, provided the individual meets the criterion for renewal requirements and meets the applicable conditions described in the following.

It is the responsibility of certificate holders to initiate the procedures required to obtain recertification. If the recertification is applied for more than 12 months after expiry of the period of validity, a complete examination (general, specific, and practical) for Level 1 and Level 2 shall again be passed successfully.

Levels 1 and 2 certificate holders seeking recertification shall provide a confirmation issued by the employer of continued satisfactory work activity without significant interruption in the method and sector for which recertification is sought.

The individual shall successfully complete the practical examination element which demonstrates continued competence to carry out work within the scope specified on the certificate. This shall include testing specimens appropriate to the scope of recertification and in addition, for Level 2, the production of a written instruction suitable for the use of Level 1

Originator	Approved by	Signature	Page
Certification Committee	Director		21 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

personnel.

If the individual fails to achieve a grade of at least 70 % for each specimen tested and, for Level 2, for the instruction, two re-examinations of the recertification examination shall be allowed after at least 7 days and within 12 months of the first attempt at the recertification examination.

In the event of failure in the two allowable re-examinations, the certificate shall be withdrawn. In order to reinstate certification, a candidate shall:

- complete further training, acceptable to the certification body; and
- retake all examination elements required for initial certification.

The date of expiration of the reinstated certificate shall be no more than 5 years from the date of expiration of the original certificate.

If the criterion in for recertification is not met, the individual shall complete the general, specific and practical examinations.

Recertification for Level 3:

Level 3 certificate holders seeking recertification shall provide a confirmation issued by the employer of continued satisfactory work activity without significant interruption in the method and sector for which recertification is sought and:

- a) satisfy the Level 3 requirements for a written examination; or
- b) meet the requirements for a structured credit system, as given in <u>Table 14</u>. The individual shall decide between the examination or credit system for recertification. If the

The individual shall decide between the examination or credit system for recertification. If the credit system is chosen and requires submission of employer's documents or access to an employer's premises, the individual shall provide a written statement of approval from the employer.

In both cases (written examination or credit system), the individual shall either provide appropriate documented evidence, acceptable to QCCO, of their continued practical competence in the method or pass a Level 2 practical examination except for the drafting of NDT instructions.

To be eligible for recertification:

• Where a certificate holder elects to use **the structured credit system**, they shall provide evidence to the certification body to demonstrate achievement of a minimum of 100 points in the 5-year recertification period based on the requirements of <u>Table 14</u>.

For certificate holders seeking recertification of Level 3 certification:

— a minimum of 50 and a maximum of 70 of the 100 points is required for any combination of activities listed in item A of Table 14; and

Originator	Approved by	Signature	Page
Certification Committee	Director		22 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

 a minimum of 30 and a maximum of 50 of the 100 points is required for any combination of activities listed in item B of Table 14.

Where QCCO has opted to implement a recertification period of less than 5 years, the minimum points required may be prorated accordingly [(i.e. a 4 year renewal period would require a minimum of 80 points $(100 \times 4/5)$].

A candidate who applies for and does not meet the requirements of the credit system shall be recertified by examination. In the event of failure at the first attempt at recertification by examination, only one retest of the recertification examination shall be allowed within 12 months of the date of application for recertification via the structured credit system.

- Where a certificate holder elects to take **the written examination** or does not meet the structured credit system requirements, they shall successfully complete an examination that includes:
- a) a minimum of 20 multiple-choice 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
- b) a minimum of 10 multiple-choice questions on the requirements of the certification body's certification scheme.

If the individual fails to achieve a grade of at least 70 % in the recertification examination, a maximum of two retests of the recertification examination shall be allowed. The time period within which all tests are to be taken shall be 12 months, unless otherwise extended by the certification body. In the event of failure in the two allowable re-examinations, the certificate shall be withdrawn. In

order to reinstate certification, a candidate shall: complete further training, acceptable to the certification body; and retake all main method examination items as required for initial certification.

The date of expiration of the reinstated certificate shall be no more than 5 years from the date of expiration of the original certificate.

7. Declaration of results.

A candidate fulfilling all certification requirements shall be certified; and evidence of this certification shall be made available by issue of hard copy certificate(s) displaying the relevant information.

8. Award of certificate.

Originator	Approved by	Signature	Page
Certification Committee	Director		23 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Certificates shall include the following information:

- a) the name of the certified individual;
- b) a unique identification (Certificate number);
- c) the name of the certification body;
- d) the scope of the certification, including reference to this document, the NDT method(s) and level of certification, and/or applicable techniques and sector(s), including issue date;
- e) any limitations to the certification, if applicable;
- f) the effective date of certification and date of expiry;
- g) the signature and/ or authorization of a designated representative of QCCO;
- h) contact information for verification purposes.

(Clause 8.3 C) surveillance methods and criteria (if applicable) Not Applicable

(Clause 8.3 D) criteria for suspending and withdrawing certification

- Certification may be suspended by QCCO:
- a) if the individual becomes temporarily physically incapable of performing their duties;
- b) if the individual fails to provide evidence of meeting the visual acuity requirements of this document annually;
- c) if a significant interruption takes place in the method for which the individual is certified;
- d) at the discretion of the certification body for any other situations.

The certification body shall specify the conditions for revalidation where an individual's certification has been suspended.

- Certification shall be withdrawn by QCCO:
- a) at the discretion of the certification body, i.e. after reviewing evidence of behaviour incompatible with the certification scheme or failure to abide by a code of ethics;
- if the individual fails to meet the requirements of renewal, until such time as the individual meets the requirements for renewal;
- if the individual fails recertification, until such time as the individual meets the requirements for recertification or certification;
- d) at the discretion of the certification body, when verifiable evidence is received from the

Originator	Approved by	Signature	Page
Certification Committee	Director		24 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

employer stating that the individual has become physically incapable of performing their duties.

(Clause 8.3 E) criteria for changing the scope or level of certification (if applicable)

- A certified Level 1 or Level 2 individual changing sectors or adding another sector for the same NDT method shall be required to take only the new sector specific and practical examinations for that method.
- A certified Level 3 individual changing sectors or adding another sector for the same NDT method is exempt from the need to retake the basic examination.
- the additional scope may be added to the existing certification and the original period of validity maintained; or
- a new certificate with a new period of validity may be issued for the extension to scope only.

(Clause 8.4 A) the involvement of appropriate experts

 QCQO has adequate technical expert of relevant NDT having all stages of experience for evaluation of certified person.

(Clause 8.4 B) the use of an appropriate structure that fairly represents the interests of all parties significantly concerned, without any interest predominating

- Quality Control Company (QCCO) has an appropriate structure that fairly represents the interests of all parties involved substantially, without any interest being predominated.
- In addition, QCQO is having one committee for maintaining impartiality which is represented by all interested parties like Training providers, Audit agencies and client of audit agencies.

(Clause 8.4 C) the identification and alignment of prerequisites, if applicable, with the competence requirements

• The certification system sets out the prerequisites & competency requirements for the certification process.

Originator	Approved by	Signature	Page
Certification Committee	Director		25 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

(Clause 8.4 D) the identification and alignment of the assessment mechanisms with the competence requirements

- When any competency requirements have been changed. The certification Manager is responsible for preparing proposal for certification mechanism with revised competency requirement of such scheme.
- Certification manager will maintain a register which is revised with changes in competency requirement due to change in standard or codes.

(Clause 8.4 E) A job or practice analysis that is conducted and updated to identify the tasks for successful performance

- Candidate's request (Application) receives.
- Technical review of submitted documents.
- Result of examination/personnel evaluation.
- Award of certificate.

identify the required competence for each task

- Receiving of application and technical review of documents. (Reviewer should be Quality Department)
- Evaluation of Examination: Evaluator of examination should be Level III Examiner.
- Award of certificate: committee having knowledge of relevant management systems, accreditation standards.

identify prerequisites (if applicable)

- The Prerequisites have been defined in 8.2e and
- reviewed and confirmed in MRM.

confirm the assessment mechanisms and examination content

Assessment shall be done in two parts:

- 1. Review of documents.
- 2. Examination. The examination would be as shown in table no. 6

Originator	Approved by	Signature	Page
Certification Committee	Director		26 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

• For the Practical Exam, number of specimens and number of areas or volumes to be tested in the Level 1 and Level 2 are given in the following table no. 7:

Conduct of examinations

- All examinations shall be conducted in QCCO examination centers.
- At the examination, the candidate shall have in his possession valid proof of identification and an official notification of the examination, which shall be shown to the examiner or invigilator upon demand.
- Any candidate who, during the course of the examination, does not abide by the examination rules or who perpetrates, or is an accessory to, fraudulent conduct shall be excluded from all further qualification examinations for a period of at least one year.
- Written and practical qualification examinations shall be invigilated by an examiner or by one or more trained invigilators placed under an examiner's responsibility.
- With the prior approval, a candidate for a practical examination may use his own equipment.
- Candidates shall not be permitted to bring into the examination area personal items, unless specifically authorized to do so by the examiner.
- An examiner shall not be permitted to examine any candidate:
 - a) that he has trained for the examination for a period of two years from the date of the conclusion of the training activities;
 - b) Who is working (permanently or temporarily) in the candidate same facility as the examiner.

Originator	Approved by	Signature	Page
Certification Committee	Director		27 of 31



No.	SC-01
Revision No.	02
Date	18-12-2022

NDT Certification Scheme

Annex A

Structured credit system for renewal Level 1, 2 and 3 and for Level3 recertification

A.1 Performance of NDT activities

The following work activities may be considered as acceptable:

- a) knowledge and understanding of the customer's specifications and the inspection standards;
- b) verification of operating conditions or setting up of the test equipment, successful performance of NDT, satisfactory reporting;
- c) performance as a Level 3 examiner.

A.2 In order to assess the activities specified in $\underline{A.1}$, the certification body may request from the individual seeking renewal or Level 3 recertification documentation and/or evidence to demonstrate compliance including, but not limited to, the following:

- a. confirmation of the candidates work activities by a certified individual or referee;
- b. confirmation of the level of activity of the individual in the given method;
- c. confirmation of formal documented competency or proficiency test(s) in the given method;
- d. dates and protocol numbers of reports;
- e. details of any job specific training received;
- f. confirmation of employer's authorization to operate;
- g. summary of activities and outputs;
- h. job/position description;
- i. annual/regular employer assessments of performance/competence;
- i. sample NDT reports;
- k. sample procedure(s) developed (Level 3 only);
- customer feedback;
- m. confirmation of adherence to code of ethics from employer;
- n. confirmation of compliance with additional national requirements (i.e. radiation safety).

Other evidence may be deemed acceptable or be requested by the certification body. The certification body may require that some or all of the submitted evidence be confirmed by the employer.

Originator	Approved by	Signature	Page
Certification Committee	Director		28 of 31



No.	SC-01
Revision No.	0
Date	31-01-2022

NDT Certification Scheme

Table 14: Structured credit system for renewal Level 1, 2 and 3 and for Level 3 recertification

		Level 1		Level 2			Level 3			
Item	Activity	Points granted per activity	Maximum number ofpoints peryear of activity	Maximu m number of points over 5 years of activity	Points granted per activity	Maximum number of points peryear of activity	Maximu m number of points over 5 years of activity	Points granted per activity	Maximum number ofpoints peryear of activity	Maximum number of points over 5 years of activity
	Part A									
1	Performance of NDT Activities a	2 / day	25	95	2 / day	25	95	2 / day	25	95
2	Completion of theoretical training in the method	1 / day	5	15	1 / day	5	15	1 / day	5	15
3	Completion of practical training in the method	2 / day	10	25	2 / day	10	25	2 / day	10	25
4	Delivery of practical or theo- retical training in NDT in the method considered	N/A	N/A	N/A	1 / day	15	75	1 / day	15	75
5	Participation in research activities in NDT field or for engineering of NDT (see Annex E)	1 / week	15	60	1 / week	15	60	1 / week	15	60
	Part B									
6	Participation to a technical seminar/paper in the field of the method or technique	1 / day	2	10	1 / day	2	10	1 / day	2	10
7	Presenting a technical seminar/ paper in the field of the method or technique	1 / presenta- tion	3	15	1 / presenta- tion	3	15	1 / presenta- tion	3	15

Originator	Approved by	Signature	Page
Certification Committee	Director		29 of 31



No.	SC-01
Revision No.	0
Date	31-01-2022

NDT Certification Scheme

Table 14: Structured credit system for renewal Level 1, 2 and 3 and for Level 3 recertification

8	Current individual membership in NDT or NDT related society	1 / member- ship	2	5	1 / member- ship	2	5	1 / member- ship	2	5
	Technical oversight and mentor- ing of NDT personnel/ trainee in the relevant method	N/A	N/A	N/A	2 / mentee	10	30	2 / mentee	10	40
10	Participation or convenorship instandardization and technical committees	N/A	N/A	N/A	1 / commit- tee	3	15	1 / commit- tee	4	20
	Performing a technical NDT role within a certification body	N/A	N/A	N/A	2 / activity	10	30	2 / activity	10	40

NOTE Where the term "year(s)" is noted in this table, this is specified as a certification year and not as a calendar year.

Originator	Approved by	Signature	Page
Certification Committee	Director		30 of 31

a See C.2 for specific details of this activity.



No.	SC-01
Revision No.	0
Date	31-01-2022

NDT Certification Scheme

Originator	Approved by	Signature	Page
Certification Committee	Director		31 of 31