

**CONDITIONS FOR ISSUING  
THE NON-DESTRUCTIVE TESTING  
QUALIFICATION  
IN THE AEROSPACE SECTOR  
  
CER-FrANDTB-PR-001 V04**

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## Record of Revisions

**RECIPIENTS:** EXAMINATION CENTRES [X]/BOARD [X]/Other companies using FrANDTB [X]

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**AFENDA FrANDTB:** 10 rue Chevreul - 92150 Suresnes




Telephone: +33 (0)1 47 01 38 20 - Fax: +33 (0)1 47 01 38 24 - Website: [www.afenda.org](http://www.afenda.org) - email: [contact@afenda.org](mailto:contact@afenda.org)

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	<p>§3.16 and 5.4 Modification examiner definition</p> <p>§3.26 Updating the definition with the document</p> <p>§4.1 Clarification on what the internal procedure should contain at least</p> <p>§6.1.1 Deletion of Table 1 (Shearography test method)</p> <p>§6.2 Adding registration and formalisation of apprenticeships</p> <p>§7 Addition of details</p> <p>§7.1.1 adding clarification for acuity vision</p> <p>§7.1.2 Delete "for all levels".</p> <p>§7.1.3 Delete "for all levels" and add "codes and product knowledge".</p> <p>§7.1.4 Clarifications on examination products</p> <p>§8.2.4.1 Adding "I"</p> <p>Table 4 Details on acuity vision</p> <p>§8.2.2 Added "the name".</p> <p>§8.3 Deletion of "Certification may expire, be suspended or withdrawn"</p> <p>§8.4 Deletion of "Certification may expire, be suspended or withdrawn"</p> <p>§8.3.2 Improving EN translation</p> <p>§8.2.4.1 Clarifications made</p> <p>§8.7 Add § requiring an annual review of NDT agents</p> <p>Annex 2 A.2.3 Modified EN version</p> <p>Appendix 2 Added A.3.3</p>					
04	<p>Consideration of NF EN 4179 : December 2021 is replaced pr NF EN 4179 : May 2020</p> <p>Standard(s) replaced by document(s)</p> <p>IRT is replaced by IT</p> <p>Responsible Level 3 is replaced by Responsible Level 3 person</p> <p>Technique is replaced by test technique</p> <p>method is replaced by test method</p> <p>Annual maintenance is replaced by annual proficiency review</p> <p>Added definition: Basic examination, Committee meetings / Panel meetings, Committee projects, Task</p> <p>§6.2: Modification of LT &amp; IRT (TT) experience time</p> <p>§7.1.1: Added precision Visotest</p> <p>§8.1 added text</p> <p>§8.5: 3 months replaced 6 months</p> <p>§3.16 /5.4 &amp; 7.1.4.3 precision level 3 examiner</p>	<p>JF.CILIA</p> 	<p>P.SORGUS</p> 	<p>B. MARLOYE</p> 	16/03/2022	01/07/2022

**AFENDA FrANDTB: 10 rue Chevreul - 92150 Suresnes**

Telephone: +33 (0)1 47 01 38 20 - Fax: +33 (0)1 47 01 38 24 - Website: [www.afenda.org](http://www.afenda.org) - email: [contact@afenda.org](mailto:contact@afenda.org)

## **0 WARNING**

This procedure is set out as per the requirements of the identical European **NF EN 4179: December 2021** and US **NAS 410 Issue 5** documents on certifying non-destructive testing agents working in the Aerospace Industry.

The French version is the reference procedure in case of conflict.

AFENDA FrANDTB is constituted of a Board of Directors and a Technical Committee. The Technical Committee of AFENDA FrANDTB (hereafter designated FrANDTB) is the National Aerospace NDT Board - NANDTB - for France as defined in documents **NF EN 4179: December 2021** and **NAS 410 Revision 5**.

It acts as:

- An independent aerospace organisation, representing the aerospace industry of a country, governed by the participating prime contractors and recognised by the country's regulatory authorities to provide or organise NDT qualifying training, examination and/or qualification services, as per documents **NF EN 4179: December 2021** and **NAS 410 Revision 5**.
- The French Federation for Non-Destructive Testing (**COFREND**), acting as the "National NDT Society".

**FrANDTB** acts as per this document for France and, by extension, for non-destructive testing agents belonging to foreign companies linked by specific contracts to manufacturers, repairers and users of the aerospace equipment.

The running and organisation of **FrANDTB** is described in procedure **CER-FrANDTB -PR-002**.

Certification of limited level 1 agents is under employer responsibility. This is described in the **NF EN 4179: December 2021** and, if employers would like accreditation from FrANDTB, in procedure **CER-FrANDTB -PR-015**.

Note:

In the event that employers, FrANDTB are affected by government measures of restrictions due to a pandemic or other measures affecting NDT agents with an N1, N2 or N3 certification that is about to expire. FrANDTB can define an extension, in agreement with the authorities (ANDTBF, EASA, DGAC-OSAC, DGA-DSAé), of the certification, annual proficiency review and vision examination. Each extension must be documented with a new expiry date, justification and approval by the employer's Responsible level 3 person and registered by FrANDTB.

This extension will be disseminated to the level 3 managers and available on FrANDTB website.

## 1 GENERAL

### 1.1 Purpose

This procedure establishes the way **FrANDTB** shall apply the requirements of document **NF EN 4179: December 2021** for the qualification and certification of personnel conducting non-destructive testing (NDT) operations in the aerospace industries for the manufacture of new equipment, services and maintenance.

The qualification and certification process includes the following stages:

- Training
- Qualification by **FrANDTB**
- Certification by the employer.

### 1.2 Scope of application

This procedure applies to personnel who use NDT test methods to inspect and/or accept materials, products, components, assemblies or sub-assemblies. It also applies to the people directly responsible for the technical suitability of the NDT test methods used and the people who draft the procedures and/or the NDT work instructions.

People certified as per the former versions of **EN 4179** and of these procedure do not need to be re-certified as per the requirements of this procedure as long as their certification is still valid.

### 1.3 Non-destructive testing test methods

This procedure contains the detailed training, experience and examination requirements applicable to the following NDT test methods:

#### 1.3.1 Common test methods and others test methods

Eddy current testing	ET
Magnetic particle testing	MT
Penetrant testing	PT
Radiography testing	RT
Ultrasonic testing	UT
Thermographic testing	IRT (TT)

#### 1.3.2 Other test methods

Leak testing	LT
Shearography testing	ST

If required, **FrANDTB** may implement a non-destructive testing test method not listed in this procedure. **FrANDTB** must subsequently:

- Accordingly modify its procedures to include the new inspection test method
- Have general level 1, 2 and 3 examination question banks validated by **COFREND**
- Appoint level 3 personnel in charge of initiating new qualifications. Their number must be limited to the bare minimum

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These people must meet the criteria of paragraph 5.4, in particular with respect to their general knowledge and industry experience in the test method and scope of application.

- Create and validate the specific questions banks for Levels 1, 2 and 3
- Create and validate the practical examination topics and the answer sheets
- Establish and validate the correct answer tables
- Draft the training programmes
- Issue the accreditation to examination centres for this new test method.

In addition, they must meet the criteria of the following table:

<i>Institute or university</i>	<i>Training in hours</i>	<i>Experience in hours</i>	<i>Other certification</i>
A levels, A-level equivalent or less	80	300	At least 1 valid L3 or 2 valid L2s
Two-year higher education qualification in a scientific or industrial domain	60	200	At least 1 valid L3 or 2 valid L2s
Degree or engineering qualification in a scientific or industrial area	40	200	At least 1 valid L2

The duration of the authorisation is limited to 5 years.

## **2 DOCUMENTS**

### **2.1 Reference documents**

<b>NAS 410</b>	Certification and Qualification of Non-destructive Test Personnel
<b>ISO 9712</b>	<b>Non-destructive testing - Qualification and certification of NDT personnel</b>
<b>NF EN 4179</b>	Aerospace series - Qualification and approval of personnel for non-destructive testing
<b>ISO 18490</b>	Non-destructive testing – Evaluation of vision acuity of NDT personnel
<b>GOU-MQ-001</b>	COFREND certification Quality Assurance Manual
<b>AC7114/11</b>	Audit criteria to be used on NANDTB audits

### **2.2 Applicable Documents**

<b>NF EN 4179</b>	Aerospace series - Qualification and approval of personnel for non-destructive testing
<b>ANDTBF 10</b>	General Knowledge of Other Test methods as required by EN4179
<b>CER-FrANDTB-PR-002</b>	Procedure for <b>FrANDTB</b> running and organisation
<b>CER-FrANDTB -PR-003</b>	Accreditation and operation monitoring procedure for certification examination centres
<b>CER-FrANDTB -PR-004</b>	Application Folder
<b>CER-FrANDTB -PR-014</b>	Conditions for accrediting training centres in the aerospace sector
<b>CER-FrANDTB -DT-001</b>	List of applicable documents



### 3 DEFINITIONS

- 3.1 Accredited examination centre (CEA):** centre accredited by **FrANDTB**, where qualification examinations take place.
- 3.2 Training centre:** Organisation approved by the Responsible Level 3 person and/or accredited by FrANDTB, offering training services preparing for NDT certification.
- 3.3 Certification:** Written statement from an employer certifying that an individual meets the requirements of **NF EN 4179**
- 3.4 Documented:** Recorded in written or electronic form.
- 3.5 Field of activity:** Main field of activity carried out by the personnel concerned by the qualification:
- Production (Casting, steel industry, etc.)
  - Processing (forging, rolling, etc.)
  - Manufacturing (machining, forming, assembly, welding, heat treatment, surface treatment, coatings, composite, etc.)
  - Maintenance.
- 3.6 Test sample:** Part or inspection data, including at least one sample from the main field of activity containing one or more discontinuities, flaws (natural or artificial) or known and documented configurations, used during the practical examination in order to demonstrate the applicant's ability to use a specific test method. Test samples may be real parts, parts manufactured for the examination or, when necessary, inspection data for parts such as radiographs or ultrasonic maps.
- 3.7 Written:** stored in an electronic or paper medium.
- 3.8 Employer:** organisation that employs (or contracts the services of) one or more individual(s) to carry out NDT operations. Individuals who carry out NDT operations and are their own employer are included in this definition.
- 3.9 Evaluation:** analysis performed after interpreting the indications observed during NDT, in order to determine whether they comply with the stated acceptance criteria or to inform about the product quality.
- 3.10 Examination:** formal, controlled and documented test performed in accordance with this procedure, in order to check the applicant's vision, knowledge or ability in the applicable NDT test method.
- 3.11 Closed-book examination:** an examination administered without access to any reference materials.
- 3.12 Open-book examination:** examination administered with access to reference material provided during the examination.
- 3.13 General examination:** a written examination addressing the basic principles and theory of an applicable NDT test method.

**3.14 Practical examination:** examination to demonstrate an individual's ability to perform an NDT test method as used by employers. Questions and answers are not necessarily written, but a checklist must be used and the observations and results must be recorded.

**3.15 Specific examination:** a written examination to determine an individual's understanding of operating procedures, codes, documents, product knowledge technology, test test techniques, equipment and specifications for an NDT test method as used in the aerospace industry.

**3.16 Examiner:**

Mandatory FrANDTB Level 3 agent in the method and technique(s) with:

- valid or expired inspection option
- or
- valid or expired level 2

**3.17 Experience:** actual performance of an NDT test method conducted in the work environment resulting in the acquisition of knowledge and skill. This does not include formal classroom training but may include laboratory and on-the-job training (see paragraph 6.2).

**3.18 Instructor:** person appointed or approved by a Responsible Level 3 person or examiner to give training to NDT personnel.

**3.19 On-the-job training:** training in the work environment to gain experience in instrument set-up, equipment operation, testing test method application, and recognition, interpretation and assessment of indications under appropriate technical guidance.

**3.20 Formal training:** an organised and documented programme of activities designed to impart the knowledge and skills necessary to be qualified as per this procedure. Formal training may be a mix of classroom and practical activities in a training centre. Self-instruction is not included.

**3.21 Indication:** apparent response further to conducting an NDT inspection, which requires interpretation.

**3.22 Work instruction:** document containing a detailed description of the NDT test technique, as well as the parameters used to test the specific part or group of parts (for example: "extruded aluminium part") or assembly. The work instructions are written in compliance with the procedures (paragraph 3.27). In this document, work instructions may be referred to as Data Sheets.

**3.23 Interpretation:** operation consisting in determining whether an indication is relevant or not. Relevant indications must be assessed.

**3.24 Test method:** one of the disciplines of non-destructive testing (e.g. radiography), which may include various test techniques (paragraph 3.31).

**3.25 Responsible Level 3 (RL3): NF EN 4179** level 3 agent appointed by the employer, who has the responsibility and authority to act on the employer's behalf and to guarantee that the requirements of the **NF EN 4179 and NAS 410** documents are observed as regards the employer.

**3.26 Direct observation:** when the observer is able to view the NDT process in a manner that permits uninterrupted, visual and verbal two-way contact with the trainee

**3.27 Procedure:** a written general "how to" instruction for performing a given process. Procedures are used when writing the work instructions (paragraph 3.22).

**3.28Written Practice:** Document that describes an employer's requirements and test methodology for controlling and administering the NDT personnel qualification and certification process according to the **NF EN 4179** (see paragraph 4.1).

**3.29Qualification:** skills, training, knowledge, examinations, experience and vision required for personnel to properly perform the functions corresponding to a particular level.

**3.30Subcontractor:** as regards the principals, organisation responsible for aerospace product manufacturing or maintenance. For this procedure, this includes NDT suppliers and service providers.

**3.31Test techniques:** categories within a test method.

The list of test techniques is provided in Table I below:

**TABLE I :**

<b>TEST METHODS</b>	<b>TEST TECHNIQUES AT: All Test techniques</b>
<b>Eddy current testing (ET)</b>	<b>M</b> - Measurements (thickness, conductivity, material sorting, etc.)
	<b>DD</b> - Defect detection (HF, LF, etc.)
<b>Magnetic particle testing (MT)</b>	<b>BM</b> - Fixed bench
	<b>BF</b> - Mobile bench
<b>Penetrant testing (PT)</b>	<b>A</b> - Water washable penetrant
	<b>D</b> - Post- hydrophilic emulsifier penetrant
	<b>C</b> - Solvent-removable penetrant
<b>Radiography testing (RT)</b>	<b>RA</b> - Radiographic film: Film
	<b>CR</b> - Computed radiography: Non film
	<b>DR</b> - Digital radiography: Non film
<b>Ultrasonic testing (UT)</b>	<b>DI</b> - Immersion defect detection
	<b>DC</b> - Contact defect detection
	<b>M</b> - Measurements (thickness, physical magnitudes, etc.)
<b>Thermographic testing (IRT)</b>	<b>AT</b> - All test techniques

<b>OTHERS TEST METHODS</b>	<b>TEST TECHNIQUES</b>
<b>Leak testing (LT)</b>	<b>GT</b> - Trace gas
	<b>VP</b> - Pressure variation
<b>Shearography testing (ST)</b>	<b>AT</b> - All test techniques

**3.32 Special processes:** the special processes defined below require:

- A qualification defined in the table below.

SPECIAL PROCESS	TEST METHOD	TEST TECHNIQUE
Tomography	Radiography testing (RT)	DR- Digital radiography: Non film
Multiple items - Immersion	Ultrasonic testing (UT)	DI - Immersion defect detection
Multiple items - Contact		DC- Contact defect detection
Tofd - Immersion		DI - Immersion defect detection
Tofd - Contact		DC- Contact defect detection

- Additional training on the special procedure with an internal assessment under the responsibility of the employer and the Responsible Level 3 person.

**3.33 National Aerospace NDT Board (NANDTB):** an independent aerospace organisation, representing the aerospace industry of a country, governed by the participating prime contractors and recognised by the country's regulatory authorities to provide or organise NDT qualifying training, examination and/or qualification services, as per document **NF EN 4179**.  
For France, FrANDTB is recognised by the competent civil aviation authorities.

**3.34 Monitor:** person who signed form CER-FrANDTB-FO-094-V01- Work ethics commitment - people assigned to **FrANDTB** qualification who can assist the examiner in the approved examination centre.

**3.35 Inspection option:** Preparation of a Technical Instruction Sheet in its main field of activity of inspection(s), and if possible in the test technique used. This involves inspecting one part or 1 batch of parts per test technique with the objective of detecting compliant and non-compliant indications and producing an inspection report.

**3.36 Basic examination:** Examination utilized to verify a Level 3 candidate's knowledge of NDT methods used by the employer at a Level 2 proficiency

**3.37 Committee meetings / Panel meetings:** Meetings, conferences, symposia, seminars, trade association meetings, panels, organized or sponsored by a regional, national or international NDT organization or technical society

**3.38 Committee projects:** Specific identifiable official activities of regional or national technical societies, committees or work groups

EXAMPLE round robins or individual studies, preparation of guidelines, appendices, specifications, recommended practices, procedures, codes or standards.

Note 1 to entry: Documentation may include memos or reports, drafts of committee output documents, or official written comments submitted by the candidate on such documents.

**3.39 Task:** Activity for which Level 3 certification is required, e.g. approval of an NDT Technique Instruction or NDT procedure

## **4 GENERAL REQUIREMENTS**

### **4.1 Written Practice**

Employers must draft a Written Practice for qualification and certification as per **NF EN 4179** and keep it up to date for their NDT personnel. The applicable procedure and the Responsible Level 3 person appointment letter must be uploaded on the certification management software in the area reserved for the company.

The Written Practice must be in line with the applicable requirements of the **NF EN 4179**.

For the qualifications as per this procedure, it must indicate:

- The test methods, test techniques and levels for which the employer delegates qualification to the **FrANDTB**;
- Personnel duties and responsibilities;
- The training and experience requirements;
- Vision examination requirements;
- Certification and recertification requirements;
- The areas of activity;
- Records and record keeping requirements;
- Requirements for expiration, suspension, revocation and reinstatement of certifications;
- Process for annual proficiency review.

Employers must sign the work ethics commitments as per the forms in appendices 3 and 3 bis and apply the company stamp to 3bis.

- **CER-FrANDTB-FO-002-V01**-Form No. 3 - Commitment from non-destructive testing agents applying for FrANDTB certification
- **CER-FrANDTB-FO-003-V01**-Form No. 3 bis-Commitment from employers of non-destructive testing agents
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The Written Practice shall be available for review by the employer's customer(s) and regulatory agencies.

### **4.2 Certification management software**

**FrANDTB** has provided a computerised tool to manage aerospace sector agents for companies that use the **NANDTB** as per the requirements of the **NF EN 4179**.

The features of the certification management software application are as follows:

- Company references
- Management of Responsible person Level 3s
- Management of delegates
- Management of agents and certification
- Online sign-up for agents for qualification or requalification as per EN4179
- Management of folders and document inserts
- Management of Accredited Examination Centres (CEAs) (list of eligible folders for invitation to the exam)
- Insertion of CEA grades and documents directly on the certification management software
- Automatic publishing of data sheets (further to CEA validation)
- Automatic publishing of certification documents (further to AFENDA validation).

#### **4.3 Compliance and responsibilities**

The employer is the sole party responsible for certification as per the **NF EN 4179**.

**FrANDTB** issues the qualification and creates a document called the “certification document”, which must be validated by the employer to issue certification.

Reminder: the qualification and certification process includes the following stages:

- Qualification by **FrANDTB**
- Certification by the employer.

### **5 CERTIFICATION AND QUALIFICATION LEVELS**

As a reminder, the skills and responsibilities of the level 1, 2 and 3 trainees defined in the **NF EN 4179** are as follows:

#### **5.1 Trainee**

Trainees are people following a training programme on an NDT test method in the process of being qualified in Level 1 or Level 2 via direct access (i.e., without requiring Level 1).

Trainees:

- Must be individually documented as trainees and take active part in a given NDT test method training programme for a limited period of time, which is specified
- Must gain experience under direct observation by level 2 or 3 agents in the same test method or, further to approval from the Responsible Level 3 person, under direct observation by a level 1 agent or an instructor
- Must not make acceptance or refusal decisions
- Must not perform product assessment or inspection tasks including or resulting in acceptance or refusal without being under direct observation
- Must not perform any other NDT duty without being under direct observation
- Must undergo sight tests as per paragraph 7.1.1.

#### **5.2 Level 1**

In the test method for which they are certified, level 1 agents must:

- Be able to follow work instructions
- Have the skills and knowledge to process the parts, document the results and set-up the equipment as per the approved work instructions
- Have the skills and the knowledge to carry out any necessary part preparation before or after the inspection, in compliance with the approved work instructions
- Have the skills and knowledge to conduct system performance assessments as per the applicable document
- Receive advice or supervision from level 2 or 3 agents in this test method where necessary
- Have the skills to interpret and assess a specific product or product type for acceptance or refusal, as per an approved instruction.

#### **5.3 Level 2**

In the test method for which they are certified, level 2 agents must:

- Be fully aware of the scope of application and the limits of the test technique/test method in which they are certified



- Be aware of the laws, documents and other contractual documents applicable in the test method used by the employer
- Have the skills and knowledge to configure the equipment, carry out tests, interpret and assess for acceptance or refusal, and document
- Have the skills and knowledge to conduct system performance assessments as per the applicable document
- Be able to provide the necessary advice and/or supervision for trainees and level 1 agents
- Have the basic knowledge on product manufacturing and inspection technologies
- Be able to draft a work instruction from a general approved procedure
- If necessary and specified in the Written Practice, have basic maintenance knowledge on aircraft and vehicles.

#### **5.4 Level 3**

In the test method for which they are certified, level 3 agents must:

- Have the skills and knowledge to interpret laws, documents and other contractual documents that govern the test method as used by the employer
- Be able to take technical responsibility for the NDT personnel and facilities
- Be able to choose the test method and test technique for a specific inspection
- Be able to prepare and check the suitability of procedures and work instructions
- Approve NDT procedures and NDT work instructions after checking their technical suitability
- Have general knowledge of other NDT test method(s) for product technologies that are used by the employer and the associated flaws
- If necessary and specified in the Written Practice, have basic maintenance knowledge on aircraft and vehicles
- Be able to inform the Design Office of the limitations of the test methods and test techniques and part geometries best suited to an effective industrial inspection
- Be able to provide or administer training, examinations (based on the requirements in the following section) and certification of personnel for the test method in which they are certified
- Perform NDT for acceptance of parts only if the skill to perform the tasks is demonstrated (paragraphs 7.1.4.3 and 8.6b)
- Conduct the examinations according to this procedure in the test method and test technique(s) in which the agent is certified
- When required by the Written Practice, be able to audit external agencies to ensure that the Written Practice requirements are met.

## 6 TRAINING AND EXPERIENCE

### 6.1 Training

#### 6.1.1 General requirements

As a reminder, the general requirements as per the **NF EN 4179** are as follows:

Applicants for Level 1, 2 or 3 certification shall have had enough formal training to obtain the principles and practice in the applicable inspection test methods and test techniques and be able to perform the tasks set out in paragraph 5.

Formal training shall be given prior to or at the same time as on-the-job training.

All NDT training must be documented.

General, specific and practical formal training (paragraph 3.20) must always be supplemented by documented on-the-job training at the employer's premises (paragraph 3.19).

The minimum number of training hours for level 1 and 2 agents is given in Tables II and IIA for the NDT test methods and test techniques indicated. If a test method is added, the table shall be supplemented, specifying the number of hours based on the requirements for a test method of similar complexity.

**TABLE II: NUMBER OF FORMAL TRAINING HOURS FOR LEVELS 1 AND 2**

Test method	Test technique	Level 1	Level 2 (certified level 1)	Level 2 Direct access (without level 1 certification)
PT	AT	16	16	32
MT	AT	16	16	32
ET	AT	40	40	80
RT	Film or non-film	40	40	80
	Film and non-film	60	60	120
UT	AT	40	40	80
IRT	AT	20	40	60
ST	AT	20	40	60
LT	AT	40	80	120

**TABLE IIA: RT - ADDITIONAL FORMAL TRAINING HOURS IN THE MISSING TEST TECHNIQUE TO GO FROM FILM OR NON-FILM TO FILM AND NON-FILM**

Current level 1	Current level 2	Current level 1 to level 2 film and non-film
20	40	80

#### 6.1.2 Training programmes

Formal training must cover the minimum recommendations of the **COFREND** and **FrANDTB** training programmes available on the websites.

As a reminder, as per the **NF EN 4179**, it must cover at least the following points:

**AFENDA FrANDTB**: 10 rue Chevreul - 92150 Suresnes

Telephone: +33 (0)1 47 01 38 20 - Fax: +33 (0)1 47 01 38 24 - Website: [www.afenda.org](http://www.afenda.org) - email: [contact@afenda.org](mailto:contact@afenda.org)



- Basic theory
- Testing principles, choice of test methods, inspection parameters and adaptation of choices made as per the specific requirements of the materials and parts
- Products, materials and defects (formation and characteristics)
- Set-up and use of the equipment
- The importance of mastering the process
- The importance of using suitable inspection parameters and sequences
- Health and safety aspects
- The different applicable test techniques with their advantages and disadvantages
- The capacities and limitations of each test method and test technique
- The operating procedures, documents and general specifications
- The interpretation and assessment of indications and documentation of inspection results.

The training programmes must include a list of references including the material used to deliver the training.

If an outside agency non accredited or training centre accredited by **FrANDTB** is used to provide training, the Responsible Level 3 person shall verify that the training meets the employer's requirements and approve it.

#### 6.1.3 Previous training

Personnel credited with previous training or personnel not certified within 12 months of their training, refresher training must be provided.

Previous training must be documented by employers to be able to take it into consideration. As a minimum, refreshing training must cover the following aspects: products to be inspected, the set-up and use of equipment, specific operating procedures, applicable test techniques, interpretation and assessment of NDT results, safety, documents and the applicable specifications. Previous training documents that are not the originals are acceptable subject to validation by the Responsible Level 3 person.

The number of top-up training hours must be  $\geq 25\%$  of the minimum requirement in Table II.

#### 6.1.4 Respective responsibilities of **FrANDTB** and employers

**COFREND** and **FrANDTB** shall define minimum training programmes.

If employers deem that the training given (excluding on-the-job training) is not sufficient for their own requirements, they must supplement it or have it supplemented.

The Responsible Level 3 person must ensure that the training meets the employers' needs.

##### 6.1.4.1 *FrANDTB-accredited training centre*

**FrANDTB** shall use procedure **CER/FrANDTB-PR-014** to check compliance with the requirements of the **NF EN 4179**.

The training centre must provide **FrANDTB** with a list of the names of the participants, their qualifications and any certification they hold. This list shall be available to employers, who may, upon request, send it to their Principles, auditors and governing authorities.

## 6.2 Professional experience

As a reminder, as per the **NF EN 4179**, applicants for level 1, 2 or 3 certification must have enough practical experience to ensure they are able to perform the tasks corresponding to the certification level applied for. The minimum experience requirements for level 1 and 2 agents are indicated in Table III, whilst the requirements for level 3 agents are defined in Table IV.

If a test method is added, Table III will be supplemented, specifying the number of hours based on the requirements for a test method of similar complexity.

On-the-job training may only be counted in the experience period if the following two conditions are met:

- Training is given by personnel certified as per the **NF EN 4179**
- The Written Practice authorises this practice.

For trainees gaining experience, documentation shall be available for review to indicate individual, date, description of activity within the test method, hours, and certified personnel providing direct observation.

### 6.2.1 Previous experience

As a reminder, as per the **NF EN 4179**, the experience gained by an applicant with a previous employer must be documented and approved by the Responsible Level 3 person.

### 6.2.2 Equivalent experience

As a reminder, as per the **NF EN 4179**, for personnel qualified based on other programmes, previous experience must be documented and its equivalence with the requirements of Tables III or IV must be determined by the Responsible Level 3 person.

**TABLE III: MINIMUM EXPERIENCE REQUIREMENTS FOR LEVELS 1 & 2**

Experience in hours				
Test method	Test technique	Level 1 (Experience as a trainee)	Level 2 (experience as a certified level 1 agent)	Level 2 Direct access (without level 1 certification)
PT	AT	130	270	400
MT	AT	130	400	530
ET	AT	200	600	800
RT	Film or non-film	200	600	800
	Film and non-film	220	780	1000
UT	AT	200	600	800
IRT	AT	200	400	600
LT	GT	100	300	400
	VP	100	300	400
ST	AT	200	600	800

**TABLE III A: ADDITIONAL EXPERIENCE HOURS IN RT IN THE MISSING TEST  
TECHNIQUE FOR GOING FROM FILM OR NON-FILM TO FILM AND NON-FILM FOR  
PERSONNEL CERTIFIED AS PER NF EN 4179**

Level 1	Level 2	Level 1 to level 2 Film and non-film
20	200	800

**TABLE IV: MINIMUM EXPERIENCE REQUIREMENTS FOR LEVEL 3**

Institute or university	Have been level 2 certified for at least
A levels, A-level equivalent or less	4 years
Two-year higher education qualification in a scientific or industrial domain	2 years
Degree or engineering qualification in a scientific or industrial area	1 year
<b>Note: 240 additional hours of experience in RT in the missing test technique to go from film or non-film to film and non-film</b>	

## 7 EXAMINATIONS

The application folder shall be created as per procedure **CER-FrANDTB -PR-004** on the certification management software.

In particular, the following items must be included:

- Employer's Written Practice
- Employer's nomination letter for the Responsible Level 3 person
- Sight test certificate dating back to less than a year before the examination date
- Work ethics commitment (forms 3 and 3bis)
- Training certificate or, if not, invitations.

Application eligibility is established by **FrANDTB** upon reviewing the folder.

The official language is French. However, foreign applicants may take the examination in English. The use of another language is subject to acceptance from **FrANDTB**.

The examinations for applicant technical qualifications include a general examination, a specific examination and a practical examination for each test method in which the applicant is to be certified. Verbal translation (interpreting) of the written examinations is not permitted.

As per Table V, a sight test is to be performed prior to the initial qualification of the applicant and periodically thereafter, and must be valid at the time of sitting the exam.

Additional requirements may be foreseen when drafting the Written Practice for the member company, in particular to meet the applicable legislative conditions (e.g. ionising radiation). Applicants for the Radiography test method must have had radiation protection training. The questions asked in the general examination are available from **COFREND**. The questions used for the specific examination and the checklist used for the practical examination shall be available at **FrANDTB** for review by the employers or their customers upon written request. The duration of the general and specific written examinations is limited to 3 hours maximum, under the responsibility of the Accredited Examination Centres. The examination topics and samples shall be available to applicants during the examination only.

#### 7.1.1 Vision

For trainee, level 1, 2 and 3 personnel, the sight test must prove that applicants have good near vision and a perception of colours that meet the requirements of Table V. The near sight test must be performed annually and the check of colour perception must be performed at least every 5 years and prior to starting a trainee activity. The check must be performed by trained personnel designated by the Responsible Level 3 person or by qualified medical personnel. Any limitations in colour perception must be assessed by a Responsible Level 3 person prior to certification and prior to starting a trainee activity, and the result of the assessment must be recorded in writing.

It is the employer's responsibility to organise this examination with respect to the years between certification and re-certification. The most recent certificate is to be included in the certification folder in the employer's possession.

If there is a change to the sight test result for a certified agent, employers are responsible for updating the certification documents. When vision correction is required to pass the sight test, the vision correction must be used during all inspection operations.

**TABLE V: VISION REQUIREMENTS**

EXAMINATION REQUIREMENTS	
Near vision (Select one)	- TUMBLING E as per ISO 18490 - or SNELLEN 20/25 at a distance of 41 cm +2/-3 cm* - or JAEGER No. 1 at a distance of at least 30.5 cm*
Colour perception	Personnel must be able to distinguish and differentiate between the colours used in the applicable process. Tests advised: Full ISHIHARA or FARNSWORTH D15
*In at least one eye, natural or corrected. Simulated vision test and distance is not permitted on Visotest	

#### 7.1.2 General

The general examination is a written “closed book” test, without a programmable calculator and has multiple choice questions (**MCQs**) covering all knowledge for the test method in question. For level 3, the examination includes multiple choice questions (**MCQs**) covering all additional knowledge for four other Level 2 test methods.

##### Levels 1 & 2:

**TABLE VI A**

<b>Nmp</b> Technical knowledge on the materials, products and processes used in the aerospace industry	10 questions
<b>Ng 2</b> - General level 1 or 2 knowledge of the test method applied for	40 questions
<b>Key:</b> <b>Nmp:</b> Score for Materials and Products <b>Ng 2:</b> General score for Level 1 or 2	

Applicants with valid Level 1 or 2 certification as per ISO 9712 issued by **COFREND** may use the grades obtained in the general examination (Ng 2) except for the RT test method.

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**Level 3:**

The general examination must include **110 questions** distributed as per Table VI B:

**TABLE VI B**

<b>Nmp:</b> Technical knowledge on the materials, products and processes used in the aerospace industry by test method.	10 questions
<b>Ng 3:</b> General level 3 knowledge of the test method applied for	40 questions
<b>Ng 2.1, Ng 2.2, Ng 2.3 and Ng 2.4:</b> General level 2 knowledge for 4 other test methods amongst those cited in paragraph 1.3, including at least one volumetric test method	60 questions (4 x 15)
<b>Key:</b> <b>Nmp:</b> Score for Materials and Products <b>Ng 3:</b> General score for Level 3 <b>Ng 2.1, Ng 2.2, Ng 2.3 and Ng 2.4:</b> Additional General score for Level 2	

Applicants with valid level 3 certification as per ISO 9712 issued by **COFREND** may use the grades obtained in general examinations Ng 3, Ng 2.1, Ng 2.2, Ng 2.3 and Ng 2.4.

**FrANDTB** L3 certified agents may use the grades obtained - Nmp, Ng 2.1, Ng 2.2, Ng 2.3 and Ng 2.4

**7.1.3 Specific**

The specific exam is a written “open book” test and covers the requirements and the use of specifications, codes, documents, equipment, product knowledge and operating procedures. It covers all test techniques of the test method applied for, as defined in paragraph 3.31 and all areas of activity in paragraph 3.5, which are compatible with the test method.

At least 30 multiple choice questions (**MCQs**), corresponding to the required qualification level, drafted by **FrANDTB**, shall be used for the specific examination (spe) for levels 1, 2 and 3. Documents, such as specifications, tables and formulae shall be provided to the applicants if necessary.

**7.1.4 Practical**

During the practical examination, applicants must demonstrate their ability to perform the tasks that are typical of those they perform in their work (at least main area of activity and level of qualification). The candidate shall not be familiar with the examination parts and the location of the defects discontinuities located therein.

The examination covers all test techniques in the test method applied for, unless employers expressly ask to waive one or more of these test techniques.

A test technique that is not initially applied for may be requested later as per paragraph 7.2.4.

Checklists covering the subjects set out in the sub-paragraphs below must be developed by the examination centre examiners to ensure suitable coverage and help with running and grading the examination. The examination centres must also define and document the way in which the results obtained by the applicants must be documented (e.g. mapping of the part, drawings, sketches, written descriptions, etc.).

#### **7.1.4.1 Level 1**

Applicants must demonstrate their capacity to use written work instructions: they must check that the system and its accessories are operating correctly and inspect at least one sample for each test technique in which they are applying for certification.

At least two test samples must be processed, inspected, interpreted and assessed in the test method applied for. The test samples must be as per the definition in paragraph 3.6 and must be of a different configuration. The position and severity of any discontinuities must not be obvious to the applicant. The results must be documented by the applicant.

At least one test sample must be representative of the applicant's main area of activity.

The checklist used by the accredited examination centre for grading shall cover skills in:

- The use and set-up of the equipment and its accessories
- Thorough compliance with the written instruction
- The interpretation and assessment of indications
- Documentation of the results.

The duration of the practical examination recommended by **FrANDTB** is defined in form **CER-FrANDTB-FO-069**.

#### **7.1.4.2 Level 2**

Applicants must demonstrate their ability by inspecting at least two test samples with different configurations for each test method, with at least one test sample for each test technique in which the applicants are applying for certification. When a single equipment configuration must be inspected during certification, both test samples may have the same configuration. The test samples must be as per the definition in paragraph 3.6 and representative of the main area of activity. Test samples without discontinuities may be included in the subjects for examinations with more than two test samples. Applicants must document the NDT results as per the applicable acceptance criteria. The checklist must include the ability to use and calibrate equipment and materials, observe procedure details, interpret and assess the indications fully and accurately and, if applicable, specify the ability to create Data Sheets.

Applicants shall use a general procedure to draft a Data Sheet that can be used by a level 1 agent for the sample in their main area of activity.

The aim of the Data Sheet is to define specific instructions on how to inspect a sample:

- The definition (choice) of equipment
- The inspection parameters (calculations to be provided if applicable)
- Calibration (diagram, representation of signals, etc.)
- Performance of the inspection
- The test methodology and the indication sizing principle
- The acceptance criteria (to be redrafted from the general procedure provided)
- Characterisation of the indications (nature and type)
- The report on the indications (location, report on the drawing/diagram, Conforming/Non-Conforming)
- Report

The checklist used by the accredited examination centre for grading shall cover skills in:

- The use and set-up of the equipment and its accessories
- Stringent compliance with the procedures
- Relevance of the interpretation and assessment of indications
- Documentation of the results
- Full, accurate drafting of written instructions.



The duration of the practical examination recommended by **FrANDTB** is defined in form **CER-FrANDTB-FO-069**.

#### 7.1.4.3 Level 3

Applicants must demonstrate their skills by preparing an NDT procedure and a Data Sheet technical instruction (see paragraph 7.1.4.2) as per the requirements of aerospace industry employers. They must justify their choices (resources, test methods, test techniques, etc.) and create the work instruction for use by a level 1 agent in the test method applied for.

The checklist must cover the technical and industrial relevance of the procedure and the Data Sheet (see paragraph 7.1.4.2) prepared by the applicant.

The practical exam results must be documented.

The duration granted for the practical test is five hours.

#### **Inspection option for usual test methods:**

- The inspection option is an obligation, if the agent carries out inspections on aircraft parts, carrying out the release of parts. The inspection option in the desired test technique(s) is/are to be carried out before the expiry date of level 3, the validity period is 5 years in all cases.

## 7.2 Organisation of examinations

During the examination, applicants must carry valid proof of identity and an official invitation to the examination. These must be presented upon a request from the examiner or a monitor.

A work plan is sent to the applicants to ensure the tests run smoothly.

All questions are multiple choice or true/false types.

The level 1 and 2 exams or the inspection option are conducted by examination centres accredited by **FrANDTB** as per procedure **CER-FrANDTB -PR-003**. The organisation and grading for level 1 and 2 examinations or the inspection option are under the responsibility of an **FrANDTB** level 3 agent acting as official examiner:

- Designated by the manager of the accredited examination centre that uses the services
- In the test method under examination
- **Certified:** level 2 or inspection option in the applicant's examination test technique
- **Having been:** certified in level 2 or inspection option in the applicant's examination test technique.

The examination jury is composed of the examination centre manager and the examiner(s) in charge of the applicants.

The organisation and grading of level 3 examinations are the responsibility of **FrANDTB**, who designates the chair of the jury, the supervisor and the **FrANDTB** level 3 agents in charge of grading the examinations.

A level 3 agent must not be the only examiner for the applicants under their line management or who they have personally trained for the examination in question. Under no circumstances may an exam be organised by an agent themselves or their subordinates.

Any applicants who, during the exam, do not comply with the rules or act fraudulently or are complicit in such acts, must be excluded from the rest of the tests. Applicants must wait at least a year before being able to take the examination again.

Any incident such as the use of questionnaires, inspection instructions, materials, parts or non-conforming products must be subject to a report created by the examiner and sent to the examination jury during the final deliberation.

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### 7.2.1 Grading

#### 7.2.1.1 Levels 1 & 2

The “general examination” written tests are assessed by comparing the applicant responses to the correct answers for each question, approved by the **COFREND**.

The “specific examination” written tests are assessed by comparing the applicant responses to the correct answers for each question, approved by **FrANDTB**.

Each correct response is worth 1 point and the grade allocated to the test is equal to the sum of the points obtained. For the final calculation, the grade for each test is expressed out of 100.

**The grade from the practical test** takes account of the following operations:

- 1) Knowledge of the systems (implementation, functions, verification and configuration)
- 2) Implementation of the inspection test method:
  - Visual examination and preparation of samples
  - Detection of indications and their interpretation (position, size and dimensions)
  - The assessment of results as per acceptance criteria.
- 3) Inspection report
- 4) Reconditioning further to inspection (demagnetisation, cleaning and protection)

For level 2 applicants:

- 5) Knowledge on the metal for the samples to be inspected
- 6) Drafting of a work instruction for level 1 agents.

Details on the points allocated to each operation are provided in the following table:

**Table VII**

<b>Grading of the practical test</b>	<b>Level 1</b>	<b>Level 2</b>
Knowledge of equipment and products	20	10
Preparation - Configuration - Performance of inspection Operations after inspection Possible oral questions	35	15
Detection, interpretation and assessment of indications - Report	45	35
Written instruction for level 1	0	40

All examination grades must have the same weighting coefficients to determine the end grade.

#### 7.2.1.2 Level 3

Each part of the general examination must be graded separately. Certified agents changing industrial sector retain the benefits of certain grades.

The “general examination” written tests are assessed by comparing the applicant responses to the correct answers for each question, approved by the **COFREND**.

The “specific examination” written tests are assessed by comparing the applicant responses to the correct answers for each question, approved by **FrANDTB**.

Each correct response is worth 1 point and the grade allocated to the test is equal to the sum of the points obtained.

The practical test is corrected by two level 3 examiners, comparing the applicant's paper with the correct answer guide created by **FrANDTB**.

**AFENDA FrANDTB:** 10 rue Chevreul - 92150 Suresnes

Telephone: +33 (0)1 47 01 38 20 - Fax: +33 (0)1 47 01 38 24 - Website: [www.afenda.org](http://www.afenda.org) - email: [contact@afenda.org](mailto:contact@afenda.org)



Each test is graded out of 100. The sum of the 3 scores (Nmp\*NG3 + NSpé + NPrat) divided by 3 gives the final score out of 100

All examination grades have the same weighting coefficients to determine the average grade.

\*only during the first certification

Scores Ng 2.1, Ng 2.2, Ng 2.2, Ng 2.3 and Ng 2.4 (4 x 15 = 60 questions) are scored out of 100.

This score is not included in the calculation of the final score.

## 7.2.2 Examination success criteria

To be eligible for certification:

- Applicants must obtain a final grade of at least 80%
- Applicants must obtain a minimum grade of 70% in the general, specific and practical examinations
- Level 1 or 2 or 3 applicants must find all discontinuities or conditions (e.g. non-conforming thickness, etc.) specified by the accredited examination centre during the practical examination.
- Level 2 and 3 candidates must complete a Technical Instruction Sheet(s) allowing the complete control of the part(s), or control area, applicable for a Level 1, if the FIT did not provide the requested inspection and/or did not provide assurance of the conformity or non-conformity of the inspected part, the FIT score would be void making the practical examination eliminatory.
- Level 3 candidate must obtain a minimum score of 80% on the Level 2 general examination of the 4 complementary test methods.

## 7.2.3 Re examination

Applicants who do not meet the eligibility criteria in paragraph 7.2.2 **must** receive additional training before retaking the failed examination. Additional training must be documented and be based on the areas where skills or knowledge are lacking. Re-examinations must not use the same subjects and test samples as the initial examination. Re-examinations must include at least 25% new questions.

### 7.2.3.1 Partial

Applicants who obtain a final grade lower than 80% in the examination and/or a grade lower than 70% in the general, specific or practical examinations may retry the test(s) defined by the employer's Responsible Level 3 person provided that Re-examinations occur within 12 months of the initial examination.

Applicants who do not fail but who do not detect at least one of the discontinuities specified by the examination centre, and are therefore not eligible for certification, must retry the practical examination.

In the event of failing a re-examination, applicants may retry again, provided they have taken additional documented training for the failed parts. The training certificate must be included in the applicant folder on the certification management software.

Applicants may only retry two re-examination.

### 7.2.3.2 Total

Applicants who do not fulfil the criteria in paragraphs 7.2.2 and 7.2.3.1 must apply to take another full examination as per the procedure set out for new applicants.

## 7.2.4 Extension of certification to a new test technique

Applicants must take a practical examination on the new test technique as per paragraph 7.1.4. Applicants must meet the success criteria as per paragraph 7.2.2 with the grades for the latest general and specific tests. If successful, certification is extended to this test technique for the remaining validity period of the current certification (see paragraph 8.5).

### 7.3 Confirmation and recording of results

**Level 1 & 2 examination:** the results of the examination are stamped by the jury further to deliberation. The grades obtained for each test are summarised in a form signed by the technical manager of the examination centre. The **examination centre** puts forward the agents who have met the conditions of paragraph 7.2.2 for qualification on the certification management software and sends **AFENDA FrANDTB** the table of results for the examination session. Validation and qualification are declared by **FrANDTB** on the certification management software.

**Level 3 examination:** the results of the examination are stamped by the jury further to deliberation. The grades obtained for each test are summarised in a form signed by the Chair of the **FrANDTB** Technical Committee or, by delegation, by the vice-chair of the **FrANDTB** Technical Committee. **FrANDTB** endorses the results of the qualification for agents who have met the conditions in paragraph 7.2.2. The **examination centre** puts forward the agents who have met the conditions in paragraph 7.2.2 for qualification on the certification management software. Validation and qualification are declared by **FrANDTB** on the certification management software.

Note: Upon a request from the employer, the examination centre may issue a qualification examination success document pending the provision of the certificate.

## 8 CERTIFICATION

**If the FrANDTB examination does not cover all the employer's needs, the Responsible Level 3 person must set up a specific and practical additional examination as per NF EN 4179.**

### 8.1 General

Each agent qualified as per the previous paragraphs is eligible for certification.

The various stages of the qualification process are monitored by the various bodies via the on the certification management software

**FrANDTB** creates a document called the “certification document”, which must be validated by the employer to issue certification and then sent back to **FrANDTB** via the certification management software.

Examinations (general/Specific/Practical) shall be administered when 100 % of Table III requirements have been completed.

The employer is the sole party responsible for certification as per **NF EN 4179**.

Employers must also issue an operating permit.

Employers must define and provide documented follow-up of skills retention for agents whose duty includes product inspection and/or acceptance at least every 12 months.

The agreed certification date is the qualification confirmation date.

Certification is valid for 5 years, including the level 3 inspection option.

### 8.2 Administration

#### 8.2.1 Folder

An individual Folder is to be created for each agent including (paper form or digital form on the certification management software)

- A copy of the application folder
- A Data Sheet with the grades obtained for each test
- Changes of employer (if any).

The individual folders are created and archived by the secretariat of **AFENDA FrANDTB**, now in digital form via the certification management software, after the results of the level 1 and 2 agent examinations are sent by the accredited examination centres and **FrANDTB** for level 3 agents.

In the event of passing the qualifying examination, the company employing the applicant must print the certification (or re-certification) document, sign it and upload it on the certification management software.

In the event of a partial or total failure, a re-examination request must be made via the certification management software (case of registration for a partial or total re-examination, see paragraph 7.2.3 – Re-examination).

All documents may be consulted on the certification management software by the authorised people.

A paper or PDF copy may be extracted by the company employing the applicant.

#### 8.2.2 Establishment of the certification document

The certification document is established by the AFENDA **FrANDTB** Secretariat and is accessible on the certification management software.

The employer:

- Archives one of the completed copies in the individual folder of the applicable agent
- Inserts the completed copy (stamped, dated and signed) on the certification management software in the agent's folder for archiving.

The complete certification folder must include:

##### **Levels 1 & 2:**

- The **FrANDTB** stamp and the signature of the Chair of the Technical Committee or Vice Chair of the Technical Committee
- Validation by the employer (the employer's stamp, date, name and representative signature) to issue certification and the operating permit as per **NF EN 4179**
- The expiry date.

##### **Level 3:**

- The **FrANDTB** stamp and the signature of the Chair or Vice Chair of the Technical Committee
- Validation by the employer (the employer's stamp, date, name, and representative signature) to issue certification and the operating permit as per **NF EN 4179**
- The expiry date.

A specific certification document is created for level 3 agents if they pass the "Inspection" option.

The certification document is recreated at each re-certification, and the successive documents are kept in the individual folder of the agents by the employer and the **AFENDA FrANDTB** secretariat.

#### 8.2.3 Change of employer

Former employers must withdraw certification by crossing out their stamp on the certification document.

The individual folder held by the employer must be given to the agent upon departure or declared on the certification management software (add a contract end date "Modify employment" and inform **AFENDA FrANDTB** via email).

The new employer is required to inform **AFENDA FrANDTB** when a new NDT agent is integrated, after payment of the application fee he will receive a new qualification certificate which he must validate by affixing his stamp, his visa and the date of signature on the certification document.

If the **FrANDTB** examination does not cover all the employer's requirements, the Responsible Level 3 person must set up a specific, additional practical examination as per **NF EN 4179**.

The validity period remains unchanged. Archiving

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## 8.2.4 Archiving

### 8.2.4.1 Valid

Employers (E) and/or **FrANDTB** (Fr) must keep and update a personnel certification folder as long as the certification is valid. These folders must be available for audits by customers or authorities. Documents that are archived at **FrANDTB** and on the certification management software, and not with the employers, can be consulted at **FrANDTB** upon a written request from the employer. When leaving an employer, the agent can ask AFENDA FrANDTB for a copy of the elements of his Qualification file.

The folders must, for each valid certification, include at least:

<b>a</b>	Name of certified agent	E	Fr	C
<b>b</b>	Level, test method and test techniques in which the agent is certified	E	Fr	C
<b>c</b>	Last written and practical examinations		Fr	
	Results and grades from previous FrANDTB examinations	E	Fr	C
<b>d</b>	If Appendix A is used for level 3 re-certification, the documentation proving the points obtained	E	Fr	C
	Summary by FrANDTB of validated points		Fr	
<b>e</b>	Date and end of validity of current certification	E	Fr	C
<b>f</b>	Record of all NDT certification previously issued from the current employer	E	Fr	C
<b>g</b>	Record of training, which identifies the source, type and dates of training as well as the course hours, if necessary including top-up training (paragraph 6.1.3) and equivalent training as per paragraph 6.1.4	E	Fr	C
<b>h</b>	Record of experience, including all previous certification from the current and previous employers and, if relevant, experience gained as per qualification programmes other than the FrANDTB one (paragraph 6.2.2), sufficient to prove that the experience requirements for certification have been met	E	Fr	C
<b>i</b>	The most recent result of sight and colour perception tests	E	Fr	C
<b>j</b>	General training level	E	Fr	C
	Copy of the qualification when this notion is used to meet the qualification requirements	E	Fr	C
<b>k</b>	The complete certification document	E	Fr	C
<b>l</b>	Results of most recent annual proficiency review	E		
E: Employer Fr: FrANDTB C: Certification management software				

**FrANDTB** documents are stored electronically on the secure certification management software or under conditions guaranteeing confidentiality and protection against fire and water damage. The list of **FrANDTB** qualified level 1, 2 and 3 agents is available on the **COFREND** and **FrANDTB** websites.

### 8.2.4.2 Expired certification

At the end of the certification validity period, the applicants' application and written and practical examination folders may be destroyed by **AFENDA FrANDTB** for level 3 agents and by the Examination Centres for level 1 and 2 agents.

**AFENDA FrANDTB** shall retain the summary tables of the examination session results sent by the accredited examination centres for an unlimited period.

### **8.3 Loss of certification**

#### **8.3.1 Expiry**

Certification expires when the agent leaves the aerospace sector for another industrial sector or when the certification validity period (specified in paragraphs 8.5 and 8.6) is exceeded, without re-certification being issued.

Certification expires at the end of the month in which **FrANDTB** had validated the initial qualification.

The annual sight test and the annual check of skills retention expire at the end of the anniversary date month.

#### **8.3.2 Suspension**

Certification is suspended when:

- The annual sight test is expired
- The agent has not performed the certified test method for 12 consecutive months
- The agent is observed to be lacking the skills
- The annual proficiency review is expired
- The agent fails the recertification examination.

#### **8.3.3 Withdrawal**

Certification must be withdrawn in the following cases:

- The agent has not performed the test method in which he/she is certified for 24 consecutive months
- The agent's incompetence or behaviour is observed to be contrary to work ethics
- The agent leaves their employer. If the agent returns to this employer within 24 months certification may be deemed suspended.

The employer must therefore inform **AFENDA FrANDTB** by sending the crossed out certification document.

### **8.4 Re-establishment of certification**

Certification that has been suspended may be re-established keeping the original validity date.

- a) When the reason for suspensions is rectified and checked:
  - By the employer (sight, interrupted activity, skills retention check)
  - By the Responsible Level 3 person (skills).
- b) By the new aerospace employer (see paragraphs 8.2.3 and 8.3.3).

Certification that has expired may only be re-established via a specific practical & examination equivalent to the initial certification.

Certification that has been withdrawn may only be re-established via a specific practical examination equivalent to the initial certification unless the agent leaves their employer.

If the agent leaves their employer, apply the provisions of paragraph 8.2.3.

The employer must document follow-up of suspensions, withdrawals and expiry and reinstatement.

### **8.5 Re-certification of level 1 and 2 agents**

Level 1 or 2 agents must be re-certified every five years. Specific and practical examinations equivalent to those required for initial certification must be given for level 1 and 2 agents.

Examination in the 3 months prior to the expiry date: retention of the initial date + 5 years,  
Examination before the 3 months prior to the expiry date: the recertification date shall be the examination date with expiry at +5years end of month.

Examination after the expiry date: the recertification date shall be the examination date with expiry at +5years end of month.

The re-certification examination must cover all test techniques in the test method for which the applicant is certified, unless the employer expressly asks to waive one or more of these test techniques.

Note: The Responsible Level 3 person, with the applicant's agreement, can also request a re-examination of the general examination if deemed necessary and described in the employer's Written Practice. A new folder shall be generated and this examination shall be considered initial certification.

It is recommended that employers enter their applicants into top-up training on knowledge before they take the examination.

In the event of failure, certification is immediately suspended as soon as the employer is aware of this.

### **8.6 Re-certification of level 3 inspectors**

Level 3 personnel must be re-certified every five years.

- a) Recertification must be performed:
  - Via points credits as per Appendix 1
  - Via specific and practical examinations equivalent to those required for initial certification.
- b) When the duties of an applicant include the inspection and/or acceptance of products, and when the applicant does not have valid FrANDTB level 2 certification at the time of the level 3 examination, the ability to perform such tasks must be demonstrated by taking the level 2 practical examination in the test technique or test techniques applied for as per the requirements of paragraph 7.1.4.2. The results of the practical examination must be documented and lead to the inspection option level 3 in the applied test technique(s).

In the event of failure, certification is immediately suspended as soon as the employer is aware of this.



#### 8.6.1 Administration of re-certification:

At the end of the validity period, the non-destructive testing agent takes a re-certification exam in an accredited examination centre.

An application folder is to be created for the re-certification examination as per procedure **CER-FrANDTB -PR-004** and is to be sent to **FrANDTB**.

In the context of re-certification via points credits, as per Appendix 1, applicants must append proof of points and insert it all on the certification management software with their application folders. The points credit part with the supporting documents shall be examined by two level 3 agents, including at least 1 in the test method applied for. They must be or have been members of the **FrANDTB** Technical Committee or have been part of a Technical Group for the test methods.

Recording the results, creating the certification document and archiving the folders take place as per the conditions for initial certification.

### 8.7 Annual proficiency review

The employer shall develop and implement a documented annual process to verify technical proficiency for each test method during the certification cycle for all levels of personnel processing or inspecting products.

## 9 UNEMPLOYED INSPECTORS

### 9.1 Non-certified agent

It is acceptable for the internal certification procedure and the requirements linked to the employer and the Responsible Level 3 person to be normalised further to the qualification examination.

The certification document shall only be issued by **FrANDTB** once it has been demonstrated that all the requirements of this procedure have been met.

### 9.2 For temporary workers

The company that meets the requirements of this procedure, in particular for the Responsible Level 3 person and the internal written practice, is considered the employer.

The employer appears on the certification document and grants operating approval.

### 9.3 Agent with valid certification when leaving their last employer

This clause only applies to agents who have operated in the Aerospace sector, for which the interrupted activity duration is not more than 12 consecutive months or and entering in the 5<sup>th</sup> year following certification or re-certification. In this case, the agent may benefit from the provisions in paragraph 9.1 and/or 9.2 of this procedure.

## 10 CERTIFICATION FEES

Each examination must be subject to a charge received by the examination centres (levels 1 and 2) or by **AFENDA FrANDTB** (level 3).

This fee covers the examination organisation costs (materials and personnel).

For all certification and re-certification examinations, employers are asked to contribute to certification management costs via **AFENDA FrANDTB**. The amount of these fees is set annually by the **AFENDA FrANDTB** Board of Directors. It takes account of the total fees paid to the **COFREND** which is set annually during the **COFREND** General Assembly.

A contribution will also be requested in the event that an agent changes employers

## **11 REQUEST**

It is possible for a candidate to make a request. To do this, request must be sent to **AFENDA** by post or e-mail. As soon as it is received, it will be registered by the **AFENDA** secretariat and an acknowledgement of receipt will be sent within 1 week. The **AFENDA** secretariat transmits to the President of the **FrANDTB** to analyse and process the latter in agreement with all **AFENDA** bodies in order to study and decide on the decision to be taken on the request.

Once the review of the request has been completed, the **FrANDTB** must inform the complainant of the results of its investigations and the decision taken.

If corrective actions are to be taken, the complainant is informed of their content.

The **FrANDTB** must notify the complainant of the end of the request processing process, as soon as the closure decision is taken and, if applicable, it must also notify the complainant of the closure of the corrective actions implemented, if they exist.

The request is to be settled on the registration file.

The entire process from receipt to closure of the request/complaint takes into account confidentiality requirements as defined in the CER-FrANDTB-FO-094-V02-Ethical Commitment - Persons assigned to the FrANDTB qualification.



## **APPENDIX 1**

### **Duties of the Responsible Level 3 person in the qualification process as per the FrANDTB procedures**

- Approving the employer's Written Practice
- Having the responsibility and authority to ensure that the requirements of **NF EN 4179** are observed by the employer
- Sending the Written Practice to **AFENDA FrANDTB**
- Supervising trainee mentoring. If relevant, approving the level 1 agent or instructor in charge of direct observation when obtaining the necessary experience
- Mentioning in the Written Practice whether a level 1 agent is permitted to carry out interpretations and assessments to accept or refuse products
- Ensuring that the training meets the needs of the employer if a training centre accredited by **FRANDTB** is used
- Ensuring that the requirements of the **NF EN 4179** are met and that training is in line with the training programmes defined by **FrANDTB** if the training is carried out in a centre not accredited by **FrANDTB** or internally. In this case, approving the centre and its trainers
- Approving the contents of the on-the-job training
- In the event of training prior to the training programme defined in the internal procedure, determining whether it is acceptable and defining the additional training to be taken
- If there is no certification in the 12 months following the end of the internal procedure training programme, determining the top-up training to be taken
- For previously-certified agents who did not go through **FRANDTB**, determining whether their training complies with this procedure
- Ensuring that radiation protection training is given to the applicants concerned beforehand
- Documenting the experience gained with a previous employer and approving its consideration in whole or in part
- For personnel qualified via other programmes, documenting the experience gained and determining its equivalence
- Designating trained personnel or qualified medical personnel to check the vision of non-destructive testing agents
- Assessing the impact of any limitations to the perception of colours prior to certification
- Determining whether there is a need for an additional specific and practical examination on the processes and products at the employer's premises
- Checking the skills of the agents before re-issuing certification suspended due to lack of skills
- Determining and documenting additional training in the event of failing a general, specific or practical examination prior to retaking.

## **APPENDIX 2**

### **Credit systems for re-certification of level 3 NDT personnel (as per paragraph 8.6 a)**

#### **A.1 SCOPE OF APPLICATION**

A.1.1 This appendix specifies the re-certification requirements without an examination of the Level 3 NDT personnel as per paragraph 8.6 a. It only applies to people with **FrANDTB** level 3 certification that is valid at the time of recertification.

#### **A.2 REQUIREMENTS**

A.2.1 - The recertification request must be sent by the employer to **FrANDTB** at earliest 4 months and at latest 2 months before the certification expiry date.

A.2.2 The applicant must have been employed in a level 3 duties for at least 36 months (including at least 12 taking place in the last 24 months) over the last 5 years in the test method for which re-certification is being requested. The number of months is cumulative and it is not necessary for these to be consecutive months for validation.

A.2.3 Continuity in the test method shall be demonstrated. The candidate shall provide a list of 8 (eight) verifiable Level 3 tasks in each NDT test method for which recertification is sought during the 5 (five)-year period.

A.2.4 - Applicants must provide objective proof that they have kept abreast of the current NDT technology in the test method for which they are being re-certified by obtaining at least 24 points over the five-year certification period, regardless of the number of certifications (test methods) obtained, by taking part in one or more of the activities in table A.1.

Confidential documents that are not sent must be kept available for audits. In the event of a change in employer over the 5 years of validity, the points gained with the previous employer shall only be taken into account if the current employer has the supporting folder.

A.2.5 The Responsible Level 3 person point credit re-certification folder must be determined and documented by the employer. Proof shall only be used once for a given NDT test method over a 5-year period.

#### **A.3 DEFINITIONS**

A.3.1 - Committee or board meetings:

Meetings, conferences, symposia, seminars, trade shows, poster sessions, etc. organised or sponsored by a regional, national or international technical NDT association or organisation. Foreign or international meetings as mentioned above shall only be taken into account if the sponsors are national or international.

A.3.2 Committee projects:

Specific and identifiable official activities of regional or national technical associations, committees or working groups, such as inter-laboratory or individual research, the preparation of directives, appendices, specifications, technical recommendations, procedures, laws or documents, etc. This documentation may include summary or full reports of draft documents prepared by the committees or official commentaries drafted by the applicant on such documents.

A.3.3 Task:

An activity for which Level 3 certification is required e.g. approval of an NDT Test technique Instruction or NDT procedure.

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**Table A.1: Level 3 activities for which point credits are allocated.**  
A detailed description of evidence of points is defined in procedure **CER-FrANDTB -PR-004**

No.	ACTIVITY	CRITERIA	AWARDING OF POINTS	MAXIMUM POINTS OVER 5 YEARS
1	Author or joint author of technical presentations, articles, reports, folders or research on NDT	Sole author	8	8
		Joint author > 30%	4	
2	Author (writer), joint author (reviewer or approver) for initial publication or revisions of NDT specifications or documents for a company in the industry	For each document or specification	2	8
3	Participation in sessions, committee or board meetings, with technical content, organised by:	1 day, 1 meeting	1	8
	a) National or international NDT test technique companies, associations and institutes	2 days	2	
	b) Inter-company NDT working groups including members from several sites	3 days or more	4	
4	Instructor responsible for NDT training designed to prepare applicants for NDT qualification or other academic qualifications	For each 8-period of classes given	4	8
5	Participation, as a trainee, in technical seminars or classes	For each 8 hours of classes received and documented	2	8
6	Participation, as a trainee, in classes or seminars giving the right to university or French national educational qualifications	For each academic training course followed or the value unit obtained	1 by value unit	8
7	Obtaining initial FrANDTB Level 3 in another test method during the period in question. Does not apply to the recertification examination	For each test method obtained	4	4
8	Examiner for non-destructive tests	For each examination	1	6
9	Technical and/or scientific publications relative to NDT, published internally or externally	For each article published	4	8
10	Written contributions to technical organisations or companies or industry committees on NDT	For each documented contribution	4	8
11	Written participation in research, developments or surveys relating to NDT	For each documented contribution	4	8
12	Satisfactory, continuous and documented execution of Level 3 tasks	Written certificate per test method and for the period in question	1	4
13	Participation in an NDT equipment exhibition	Each participation in an exhibition	1	4
14	Performance of external NDT audits.	Each external audit conducted	2	6
15	Development of new NDT processes, facilities or systems	For each documented contribution	4	8
16	Presentation and/or awarding of a patent for a product/process/NDT test method.	Sole inventor	8	8
		Joint inventor	4	

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**APPENDIX 3**  
**Commitment from non-destructive testing agents  
applying for FrANDTB certification**

Applicants for FrANDTB certification, depending on their qualification level as defined in document EN4179, certify the accuracy of the content of this application request and undertake to observe the rules below when certified:

- Perform inspection work with the highest degree of integrity and in the spirit of fairness as regards all people concerned (employers, employees, customers or the competition)
- Apply, or ensure the application of, prevailing regulations, laws or documents as well as technical documents applicable to inspection operations under their responsibility
- Apply, or ensure the application of, safety rules required for the inspection test method used as regards operators or the public
- Inform the employer of any situation preventing them from meeting the above obligations
- Communicate inspection results to third parties mandated by the employer only
- Consider all technical information or information collected during an inspection task as confidential
- Know and apply prevailing qualification and certification rules
- Refuse to be associated with any fraudulent actions as regards certification regulations
- Keep abreast of advances made in inspection test methods, participate in their development and inform the personnel under their responsibility of these changes
- Use their certification only in the sector in question and for the given level during the validity period defined in the certificate
- Start the administrative processes for taking the re-certification examination, in conjunction with their employer, in the 6 months prior to the expiry date of their certification.

Applicants recognise that if any of these rules are not observed, the FrANDTB qualification/certification shall be invalidated. In addition, FrANDTB reserves the right to start any legal proceedings deemed necessary against the certified inspector.

Signature of APPLICANT for certification or re-certification as per EN4179		
Date	Full name	Signature (preceded by the words "Lu et Approuvé" [= Read and Approved])

Signature of EMPLOYER of the applicant for certification or re-certification as per EN4179		
Date	Full name	Signature (preceded by the words "Lu et Approuvé" [= Read and Approved])



## **APPENDIX 3 bis**

### **Commitment from employers of non-destructive testing agents**

#### **FrANDTB CERTIFICATION RIGHT OF USE - WORK ETHICS CODE**

Employers of non-destructive testing agents applying for FrANDTB certification undertake, by signing this document, to comply with the following rules:

##### **Conduct as regards third-parties**

- Have inspection operations carried out by certified non-destructive testing inspectors as per document EN 4179, when required by the product document or specification
- Do not misuse agent certification, for example for advertising
- Do not claim certification of non-destructive testing inspectors, in particular when the validity date has expired.

##### **Conduct as regards FrANDTB**

- Know and ensure the application of prevailing qualification and certification rules
- Use non-destructive testing inspectors suitable for the business area, test method and level of skills
- Refuse to be associated with any fraudulent actions as regards certification regulations
- Inform FrANDTB of any conduct that is clearly against work ethics or constitutes serious misconduct by the agent, or any reason for withdrawing the operating permit.

##### **Obligation as regards certified agents**

- Allocate the necessary resources to execute and interpret the non-destructive tests under the agents' responsibility
  - Do not pressurise with a view to modifying test results
  - Comply with the work ethics rules, if applicable, that apply to personnel assigned to certification
  - When the agents in question leave, the employer is responsible for giving them the certification document having crossed out their operating permit signature and informing FrANDTB of this change.
- The employer recognises that they are aware that if they do not comply with these rules, FrANDTB reserves the right to undertake any legal action deemed necessary against them.

Date	Name and position of manager	Company signature and stamp