



**IRCLASS**  
Indian Register of Shipping



# CLASSIFICATION NOTES: REQUIREMENTS FOR NDT SERVICE SUPPLIERS

REVISION 1

SEPTEMBER 2024

**CLASSIFICATION NOTES****Requirements for NDT Service Suppliers****Revision 1, September 2024****TABLE 1 – AMENDMENTS INCORPORATED IN THIS EDITION***These amendments will come into force on 1 January 2025*

<b>Clause</b>	<b>Subject/ Amendments</b>
<b>Section 1: General</b>	
1.1.1, 1.1.2 (new)	Amendments are made to provide better clarity in the 'Scope'.
1.2.1	Editorial changes are made.
1.3	Definitions for terms such as 'ANDT', 'AUT', 'ET', 'VT', etc. are introduced while definitions for few other terms such as 'NDT', 'NDT service suppliers' are amended.
1.4	List of references is updated.
<b>Section 2: Requirements for NDT Service Suppliers</b>	
2.1.1	In addition to minor editorial changes, requirement to provide written statement by the employer, (based upon the scope of certification), authorizing the operator to carry out specified tasks is added to the list of documents.
2.2.1, 2.2.3, 2.3.1, 2.3.2	Editorial changes are made for better clarity.
2.3.3 (new)	Added to clarify that the NDT operator's certification by an employer-based scheme will be revoked when employment is terminated by either party.
2.3.4	Options for certification of Level 3 personnel are now specified.
2.4 (complete revision)	The sub-section is completely revised to better clarify responsibilities and requirements for Supervisors of NDT.
2.6, 2.7, 2.8, 2.9	Editorial changes are made in respective sub-sections for better clarity and implementation of requirements.
2.10 (new)	The time period for validity of approval is specified.

# **CLASSIFICATION NOTES**

## **Requirements for NDT Service Suppliers**

### **Revision 1, September 2024**

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## Section 1

### General

#### 1.1 Scope

1.1.1 This Classification Note provides requirements to be complied with, as a minimum, by firms providing Non-Destructive Testing (NDT) and Advanced Non-Destructive Testing (ANDT) services for new construction of ships and offshore structures subject to Classification.

In this document, such firms will be referred to as the 'NDT Service Supplier'.

1.1.2 This Classification Note applies to:

- Independent NDT companies, and;
- Internal departments of fabricators, e.g., shipyards, hull block/section fabricators performing NDT

The NDT service specified in this document covers the service application to the following hull structures and associated items at the fabrication stage during new construction:

- The welding of components that are integrated into the ship or offshore structure
- The fabrication of independent fuel or cargo tanks (including those intended for low flashpoint fuels, e.g. type A, B and C independent tanks as described in IMO IGC and IGF Codes).
- The hull structure, defined as follows:
  - a) hull envelope including all internal and external structures;
  - b) superstructures, deckhouses and casings;
  - c) welded foundations, e.g. main engine seatings;
  - d) hatch coamings, bulwarks;
  - e) all penetrations fitted and welded into bulkheads, decks and shell;
  - f) the fittings of all connections to decks, bulkheads and shell, such as air pipes and ship side valves – all ILLC 1966, as amended, items;
  - g) welded attachments to shell, decks and primary members, e.g. crane pedestals, bits and bollards, but only as regards their interaction on the hull structure.
- Rudders of welded construction

## 1.2 Objective

1.2.1 The objective of this Classification Note is to ensure that the NDT Service Supplier is using appropriate procedures, has qualified and certified personnel and has implemented written procedures for training, experience, education, examination, certification, performance, application, control, verification and reporting of NDT. In addition, the NDT Service Supplier is to furnish appropriate equipment and facilities commensurate with providing a professional service.

## 1.3 Terms and Definitions

1.3.1 The following terms and definitions are applicable to this Classification Note:

.1 *NDT*: Non-destructive testing-the development and application of technical methods to examine materials or components in ways that do not impair their future usefulness and serviceability, in order to measure geometrical characteristics and to detect, locate, measure and evaluate flaws. NDT is also known as non-destructive examination (NDE), non-destructive inspection (NDI) and non-destructive evaluation (NDE). Comprising, but not limited to the following methods and techniques: MT, PT, RT, VT, UT, ET

.2 *ANDT*: The above definition of NDT in 1.3.1.1 applies, however ANDT includes advanced methods such as RT-D, PAUT, TOFD and AUT.

.3 *NDT Service Supplier*: Independent NDT company or NDT department/ section that forms a part of a company providing NDT services for the new construction of ships and offshore structures as applicable to the bodies performing NDT on the items as listed in 1.1.2.

.4 *MT*: Magnetic Particle Testing

.5 *PT*: Penetrant Testing

.6 *RT*: Radiographic Testing

.7 *RT-D*: Digital Radiography (Several techniques within the method RT, e.g. Computed Radiography or Direct Radiography).

.8 *UT*: Ultrasonic Testing

.9 *PAUT*: Phased Array Ultrasonic Testing (Technique within the method UT).

.10 *TOFD*: Time of Flight Diffraction (Technique within the method UT).

.11 *AUT*: Automated Ultrasonic Testing. A technique by which an object is tested by ultrasound using probes operating under mechanical control and where ultrasonic data is collected automatically.

.12 *ET*: Electromagnetic Testing (i.e., Eddy Current Testing and/or Alternating Current Fields Measurement [ACFM])

.13 *VT*: Visual Testing

.14 *Industrial sector*: Section of industry or technology where specialized NDT practices are used, requiring specific product-related knowledge, skill, equipment and/or training.

.15 *Product sector*: A category of component that may be defined by type of manufacturing, fabrication, and/or shape, which may have unique, and/or general manufacturing/fabrication defect characteristics. Product sector examples include (but not limited to): castings, wrought products (forgings), rolled products, extruded products, and welds. NDT personnel may hold certification in a method which is related to a product sector.

## 1.4 References

1.4.1 The following referenced documents are to be used for the application of this Classification Note, as appropriate.

- ISO 9712:2021; Non-destructive testing - Qualification and certification of NDT personnel
- ISO/IEC 17020:2012; Conformity assessment – Requirements for the operation of various types of bodies performing inspection
- ISO/IEC 17024:2012; Conformity assessment – General requirements for bodies operating certification of persons
- ISO 9001:2015; Quality Management Systems – Requirements
- SNT-TC-1A: 2020; Personnel Qualification and Certification in Nondestructive Testing
- ANSI/ASNT CP-189:2020; ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel

1.4.2 Other national adoptions of the standards listed above are accepted as compliant and hence are accepted for use together with this Classification Note.

## Section 2

### Requirements for NDT Service Suppliers

#### 2.1 Requirements for documents

2.1.1 The following documents are to be made available to IRS, upon request:

- an outline of NDT Service Supplier's organization and management structure, including any subsidiaries
- information on the structure of the NDT Service Supplier's Quality Management System
- quality manual and documented procedures covering the requirements given in 2.2
- for companies with in-house certification of personnel scheme; a written practice developed in accordance with a recognized standard or recommended practice (i.e. ASNT's SNT-TC-1A, 2020, ANSI/ASNT CP-189, 2020 or similar).
- operational work procedures for each NDT method including selection of the NDT technique.
- training and follow-up programmes for NDT operators including practical training on various ship and offshore products
- written statement issued by the employer, based upon the scope of certification, authorizing the operator to carry out specified tasks
- procedure for supervisor's authorization of NDT operators
- experience of the NDT Service Supplier in the specific NDT service area,
- for companies which obtain certification from an accredited certification body; a list of documented training and experience for NDT operators within the relevant service area, including qualifications and third party certification per ISO 9712:2021 based certification schemes.
- description of equipment(s) used for the services performed by the NDT Service Supplier
- a guide for NDT operators to use equipment mentioned above
- record formats for recording results of the services referred to in 2.9
- information on other activities which may present a conflict of interest, if applicable
- record of customer claims and corrective actions, where applicable
- any legal proceedings against the company in the past/currently in the courts of law, where applicable

## 2.2 Quality Management System

2.2.1 The NDT Service Supplier is to have a documented quality management system, covering at least the following:

- work procedures for all tasks and operations, including the various NDT methods and NDT techniques for which the NDT Service Supplier is involved.
- preparation, issuance, maintenance and control of documents
- maintenance and calibration of the equipment
- training programs for the NDT operators and the supervisors
- maintenance of records for NDT operators' and the supervisors' training, qualification and certification
- certification of NDT operators including re-validation and recertification
- procedure for test of operators' visual acuity
- supervision and verification of operation to ensure compliance with the NDT procedures
- quality management of subsidiaries
- job preparation
- order reference system where each engagement is traceable to when, who and where the test was carried out.
- recording and reporting of information, including retention time of records
- code of conduct for the NDT Service Supplier's activities; especially the NDT activities
- periodic review of work process procedures
- corrective and preventive action
- feedback and continuous improvement
- internal audits
- the provision of accessibility to required codes, standards and procedures to assist NDT operators.

2.2.2 A documented quality system complying with the most current version of ISO/IEC 17020:2012 and including the above would be considered acceptable.

2.2.3 The NDT Service Supplier is to satisfy the requirements of Type A or Type B or Type C inspection body, as described in ISO/IEC 17020:2012. In all cases, production staff is not to be allowed to inspect their own work in the case of Type C inspection body.



## 2.3 Qualification and Certification of NDT Personnel

2.3.1 The NDT Service Supplier is responsible for the qualification and preferably 3<sup>rd</sup> party certification of its supervisors and operators to a recognized certification scheme based on ISO 9712:2021.

2.3.2 Personnel qualification to an employer based qualification scheme (for e.g. SNT-TC-1A, 2020 or ANSI/ASNT CP-189, 2020) may be accepted if the NDT Service Supplier's written practice is reviewed and found acceptable by IRS. The NDT Service Supplier's written practice is to generally comply with the requirements ISO 9712:2021 as a minimum, except for the impartiality requirements of a certification body and/or authorized body.

2.3.3 For NDT operators holding certificates issued via an employer based scheme, the employer's certification is to be deemed revoked when employment is terminated by either party.

2.3.4 The supervisors' and operators' certificates and competence are to comprise all industrial and product sectors and techniques being applied by the NDT Service Supplier.

2.3.5 Level 3 personnel are to be certified by one of the following means:

- obtain certification from an accredited certification body.
- obtain certification from an employer based scheme via the examination method, as detailed in the written practice. It is not permissible to directly appoint a level 3 without examination if the intended certification route is from an employer based scheme.

## 2.4 Supervisor

2.4.1 The NDT Service Supplier is to have a supervisor or supervisors, responsible for the following:

- a) validate NDT instructions and procedures established and reviewed by level 3 personnel;
- b) review of NDT reporting;
- c) supervise all tasks and NDT operations at all levels;
- d) inspections of NDT equipment, tools and calibration;
- e) re-evaluate the qualification of the operators annually on behalf of the NDT Service Supplier

2.4.2 Normally, the NDT Service Supplier is to employ (on a full-time basis) a level 3 supervisor, certified to level 3 in the applicable method(s) as per the requirements.

2.4.3 It is recognised that an NDT Service Supplier may not directly employ a Level 3 in all the stated methods practiced. In such cases, it is permissible to employ an external Level 3 who is certified by an accredited certification body in those methods not held by the full-time Level 3(s) of the NDT Service Supplier.

2.4.4 Alternatively, and by agreement with IRS, the NDT Service Supplier may appoint an internal (full-time employed) supervisor of NDT activities, who does not hold level 3 certification. In this case, the supervisor is to be certified to a minimum of level 2. For NDT Service Suppliers operating this alternative approach, the NDT Service Supplier is to comply with all other requirements of this document and is to employ (either part time or on a contract basis) Level 3 NDT Services (to carry out functions such as procedure development, procedure approval, consultancy, review etc.) from outside the NDT Service Supplier organisation. The appointed external level 3 is to be certified by an accredited

certification body in all the applicable methods appropriate to the scope of the NDT operations.

## **2.5 Operators**

2.5.1 The operator carrying out the NDT and interpreting indications, is to as a minimum, be qualified and certified to Level 2 in the NDT method(s) concerned and as described in 2.3.

2.5.2 However, operators only undertaking the gathering of data using any NDT method and not performing data interpretation or data analysis may be qualified and certified as appropriate, at level 1.

2.5.3 The operator is to have adequate knowledge of materials, weld, structures or components, NDT equipment and limitations that are sufficient to apply the relevant NDT method for each application appropriately.

## **2.6 Equipment**

2.6.1 The NDT Service Supplier is to maintain records of the NDT equipment used and detail information related to maintenance, calibration and verification activities. If the NDT Service Supplier hires equipment, such equipment are to have updated calibration records, and the operators are to be familiar with the specific equipment type prior to using it. The NDT Service Supplier is to possess sufficient equipment to carry out the services being a part of the NDT scope required by IRS.

2.6.2 Where the equipment is of unique nature, the NDT operators are to be trained by competent personnel in the operation and use of the equipment before carrying out NDT using this equipment.

## **2.7 Work Instructions and Procedures**

2.7.1 The NDT Service Supplier is to produce written procedures for the NDT being applied. These procedures are to be written, verified or approved by the NDT Service Supplier's Level 3 (either internal or external, as described in 2.4).

2.7.2 Procedures are to define all relevant information relating to the inspection including defect evaluation against acceptance criteria in accordance with the relevant standards/ rule requirements.

2.7.3 All NDT procedures and instructions are to be properly documented in such a way that the performed testing can be easily retraced and/ or repeated at a later stage. All NDT procedures are to be acceptable to IRS.

## **2.8 Sub-contractors**

2.8.1 The NDT Service Supplier is to give information of agreements and arrangements if any part(s) of the services provided are subcontracted, including level 3 NDT Service (as described in 2.4). The NDT Service Supplier, in the following-up of subcontracts is to give emphasis to the quality management system of the subcontractor.

2.8.2 Subcontractors are to meet the same requirements applicable to NDT Service Suppliers for any NDT performed.

## **2.9 Reporting**

2.9.1 All NDT is to be properly documented in such a way that the performed testing and examination can be easily retraced and/or repeated at a later stage.

2.9.2 The reports are to identify the defects present in the tested area, and provide a conclusive statement as to whether the material, weld, component or structure satisfies the acceptance criteria or not.

2.9.3 The report is to include a reference to the applicable standard, NDT procedure and acceptance criteria applied in the NDT method/ technique. Reports are to be signed by the personnel with the appropriate level of certification, and the appropriate signatory status as defined in the Quality Management System.

## **2.10 Validity Period of Approval**

2.10.1 Upon satisfactory completion of initial audit, certificate of approval will be issued with a validity for three years. Subsequently certification can be renewed subject to satisfactory renewal audit every three years.

**End of Classification Note**