

**W35**

(June 2019)  
(Rev.1  
Oct 2023)

**Requirements for NDT Service Suppliers****1. General****1.1 Scope**

Firms providing NDT (Non-Destructive Testing) NDT Services on ship and offshore structures/components subject to classification, need to fulfil the requirements set out in this UR. In this document, such firms will be referred to as the Supplier.

(i) Firms providing Non-Destructive Testing (NDT) and Advanced Non-Destructive Testing (ANDT<sup>1</sup>) Services on the new construction of ships and offshore structures subject to classification, need to fulfil the requirements set out in this UR. In this document, such firms will be referred to as the NDT Service Supplier.

Note 1 – for the remainder of this UR, wherever there is a reference to NDT, it also includes ANDT

(ii) This UR 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 UR covers the service application to the following hull structure 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).
- Items listed within the definition of hull structure, as defined in UR Z23 section 2.1
- Rudders of welded construction

(iii) NDT Service Suppliers in the context of this UR are not included as part of the scope of UR Z17. The Classification Society shall verify the NDT Service Supplier in order to determine compliance with the requirements of this UR. The method of verification is to be decided by each Classification Society.

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Notes:

1. This UR is to be uniformly implemented by IACS Societies on or after 1 July 2020.
2. Rev.1 of this UR is to be uniformly implemented by IACS Societies on or after 1 January 2025.

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### 1.2 Objective

The objective of this UR 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 shall furnish appropriate equipment and facilities commensurate with providing a professional NDT Service.

### 1.3 Terms and definitions

The following terms and definitions apply for this document.

NDT	<u>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, RT-D, VT, UT, PAUT, TOFD, and ET and/or ACFM</u>
<u>ANDT</u>	<u>The above definition of NDT applies, however ANDT includes advanced methods such as RT-D, PAUT, TOFD and AUT.</u>
<u>NDT Service Supplier</u>	<u>Independent NDT company or NDT department/section that forms a part of a company providing NDT Services on the new construction of ships and/or offshore components/structures, as applicable to the bodies performing NDT on the items as listed in paragraph 1.1 (ii) of this UR.</u>
Society	The Classification Society
MT	Magnetic Particle Testing
PT	Penetrant Testing
RT	Radiographic Testing
RT-D	Digital Radiography (Several techniques within the method RT, e.g., Computed Radiography or Direct Radiography).
UT	Ultrasonic Testing
PAUT	Phased Array Ultrasonic Testing (Technique within the method UT).
TOFD	Time of Flight Diffraction (Technique within the method UT).
<u>AUT</u>	<u>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.</u>
ET	Electromagnetic Testing (i.e., Eddy Current Testing and/or Alternating Current Field Measurements [ACFM])

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VT	Visual Testing
Industrial sector	Section of industry or technology where specialised NDT practices are used, requiring specific product-related knowledge, skill, equipment and/or training.
<u>Product sector</u>	<p><u>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.</u></p> <p><u>NDT personnel may hold certification in a method which is related to a product sector.</u></p>

### 1.4 References

The following referenced documents are to be used for the application of this document as appropriate. For updated references, the latest edition of the referenced document (including any amendments) applies.

- ISO 9712: ~~2021-2012~~; 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

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

## 2. Requirements for the NDT Service Supplier

The NDT Service Supplier shall document, as required in 2.2 to 2.9, that it has the competence and control needed to perform the specified NDT Services.

### 2.1 Requirements for document

The following documents shall be available for the Society upon request:

- an outline of NDT Service Supplier's organisation and management structure, including any subsidiaries
- information on the structure of the NDT Service Supplier's Quality Management System

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- quality manual and documented procedures covering the requirements given in item **Error! Reference source not found.**
- for companies with in-house certification of ~~persons~~ personnel scheme; a written practice developed in accordance with a recognised standard or recommended practice (i.e. ASNT's SNT-TC-1A, 2020-2016, ANSI/ASNT CP-189, 2020-2016-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, authorising the operator to carry out specified tasks
- procedure for supervisor's authorisation 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 NDT Service area, including qualifications and third party certification per ISO 9712:2021-2012-based certification schemes.
- description of equipment(s) used for the NDT Services performed by the NDT Service Supplier
- a guide for NDT operators to use equipment mentioned above
- record formats for recording results of the NDT Services referred to in item **Error! Reference source not found.**
- 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

The NDT Service Supplier shall have a documented quality management system, covering at least:

- 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

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- 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.

A documented quality system complying with the most current version of ISO/IEC 17020:2012 and including the above would be considered acceptable. The NDT Service Supplier should 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 shall not be allowed to inspect their own work in the case of Type C inspection body.

### 2.3 Qualification and certification of NDT personnel

The NDT Service Supplier is responsible for the qualification and preferably 3<sup>rd</sup> party certification of its supervisors and operators to a recognised certification scheme based on ISO 9712: 2021-2012.

Personnel qualification to an employer based qualification scheme as e.g. SNT-TC-1A, 2020 2016 or ANSI/ASNT CP-189, 20202016 may be accepted if the NDT Service Supplier's written practice is reviewed and found acceptable by the Society. The NDT Service Supplier's written practice shall as a minimum, except for the impartiality requirements of a certification body and/or authorised body, generally comply with the requirements of ISO 9712: 2021 2012.

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

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

Level 3 personnel shall be certified by an accredited certification body.

Level 3 personnel shall be certified by one of the following means:

(i) obtain certification from an accredited certification body.

(ii) 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

~~The Supplier shall have a supervisor or supervisors, responsible for the appropriate execution of NDT operations and for the professional standard of the operators and their equipment, including the professional administration of the working procedures. The Supplier shall employ, on a full-time basis, at least one supervisor independently certified to Level 3 in the method(s) concerned as per the requirements of item 2.3. It is not permissible to appoint Level 3 personnel; they must be certified by an accredited certification body. It is recognised that a Supplier may not directly employ a Level 3 in all the stated methods practiced. In such cases, it is permissible to employ an external, independently certified, Level 3 who is certified by an accredited certification body in those methods not held by the full-time Level 3(s) of the Supplier.~~

~~The supervisor shall be directly involved in review and acceptance of NDT Procedures, NDT reports, calibration of NDT equipment and tools. The supervisor shall on behalf of the Supplier re-evaluate the qualification of the operators annually.~~

The NDT Service Supplier shall 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) inspection of NDT equipment, tools and calibration;
- e) re-evaluate the qualification of the operators annually on behalf of the NDT Service Supplier.

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

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.

Alternatively, and by agreement with the Society, 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 shall be certified to a minimum of level 2.

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For NDT Service Suppliers operating this alternative approach, the NDT Service Supplier shall comply with all other requirements of this UR and shall 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 shall be certified by an accredited certification body in all the applicable methods appropriate to the scope of the NDT operations.

**2.5 Operator**

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

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.

The operator shall 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**

The NDT Service Supplier shall 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 shall have updated calibration records, and the operators shall be familiar with the specific equipment type prior to using it. Under any circumstance, the NDT Service Supplier shall possess sufficient equipment to carry out the NDT Services being a part of the NDT scope required by the Society.

Where the equipment is of unique nature, the NDT operators shall 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**

The NDT Service Supplier shall 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 section 2.4). Procedures shall define all relevant information relating to the inspection including defect evaluation against acceptance criteria in accordance with the Society Rules. All NDT procedures and instructions shall 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 the Society.

**2.8 Sub-contractor**

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

Subcontractors shall meet the same requirements placed on NDT Service Suppliers for any NDT performed.

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## 2.9 Reporting

All NDT shall be properly documented in such a way that the performed testing and examination can be easily retraced and/or repeated as a later stage. The reports shall identify the defects present in the tested area, and a conclusive statement as to whether the material, weld, component or structure satisfies the acceptance criteria or not.

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

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