



Requirements for Survey of Materials and Equipment for the Classification of Naval Submarines

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**Rule Note
NR 562 DT R00 E**

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**BUREAU
VERITAS**

MARINE & OFFSHORE - GENERAL CONDITIONS

1. INDEPENDENCY OF THE SOCIETY AND APPLICABLE TERMS

- 1.1. The Society shall remain at all times an independent contractor and neither the Society nor any of its officers, employees, servants, agents or subcontractors shall be or act as an employee, servant or agent of any other party hereto in the performance of the Services.
- 1.2. The operations of the Society in providing its Services are exclusively conducted by way of random inspections and do not, in any circumstances, involve monitoring or exhaustive verification.
- 1.3. The Society acts as a services provider. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty. The Society is not and may not be considered as an underwriter, broker in Unit's sale or chartering, expert in Unit's valuation, consulting engineer, controller, naval architect, manufacturer, shipbuilder, repair or conversion yard, charterer or shipowner; none of them above listed being relieved of any of their expressed or implied obligations as a result of the interventions of the Society.
- 1.4. The Services are carried out by the Society according to the applicable Rules and to the Bureau Veritas Code of Ethics. The Society only is qualified to apply and interpret its Rules.
- 1.5. The Client acknowledges the latest versions of the Conditions and of the applicable Rules applying to the Services' performance.
- 1.6. Unless an express written agreement is made between the Parties on the applicable Rules, the applicable Rules shall be the rules applicable at the time of the Services' performance and contract's execution.
- 1.7. The Services' performance is solely based on the Conditions. No other terms shall apply whether express or implied.

2. DEFINITIONS

- 2.1. "Certificate(s)" means class certificates, attestations and reports following the Society's intervention. The Certificates are an appraisal given by the Society to the Client, at a certain date, following surveys by its surveyors on the level of compliance of the Unit to the Society's Rules or to the documents of reference for the Services provided. They cannot be construed as an implied or express warranty of safety, fitness for the purpose, seaworthiness of the Unit or of its value for sale, insurance or chartering.
- 2.2. "Certification" means the activity of certification in application of national and international regulations or standards, in particular by delegation from different governments that can result in the issuance of a certificate.
- 2.3. "Classification" means the classification of a Unit that can result or not in the issuance of a class certificate with reference to the Rules.
- 2.4. "Client" means the Party and/or its representative requesting the Services.
- 2.5. "Conditions" means the terms and conditions set out in the present document.
- 2.6. "Industry Practice" means International Maritime and/or Offshore industry practices.
- 2.7. "Intellectual Property" means all patents, rights to inventions, utility models, copyright and related rights, trade marks, logos, service marks, trade dress, business and domain names, rights in trade dress or get-up, rights in goodwill or to sue for passing off, unfair competition rights, rights in designs, rights in computer software, database rights, topography rights, moral rights, rights in confidential information (including know-how and trade secrets), methods and protocols for Services, and any other intellectual property rights, in each case whether capable of registration, registered or unregistered and including all applications for and renewals, reversions or extensions of such rights, and all similar or equivalent rights or forms of protection in any part of the world.
- 2.8. "Parties" means the Society and Client together.
- 2.9. "Party" means the Society or the Client.
- 2.10. "Register" means the register published annually by the Society.
- 2.11. "Rules" means the Society's classification rules, guidance notes and other documents. The Rules, procedures and instructions of the Society take into account at the date of their preparation the state of currently available and proven technical minimum requirements but are not a standard or a code of construction neither a guide for maintenance, a safety handbook or a guide of professional practices, all of which are assumed to be known in detail and carefully followed at all times by the Client.
- 2.12. "Services" means the services set out in clauses 2.2 and 2.3 but also other services related to Classification and Certification such as, but not limited to: ship and company safety management certification, ship and port security certification, training activities, all activities and duties incidental thereto such as documentation on any supporting means, software, instrumentation, measurements, tests and trials on board.
- 2.13. "Society" means the classification society 'Bureau Veritas Marine & Offshore SAS', a company organized and existing under the laws of France, registered in Nanterre under the number 821 131 844, or any other legal entity of Bureau Veritas Group as may be specified in the relevant contract, and whose main activities are Classification and Certification of ships or offshore units.
- 2.14. "Unit" means any ship or vessel or offshore unit or structure of any type or part of it or system whether linked to shore, river bed or sea bed or not, whether operated or located at sea or in inland waters or partly on land, including submarines, hovercrafts, drilling rigs, offshore installations of any type and of any purpose, their related and ancillary equipment, subsea or not, such as well head and pipelines, mooring legs and mooring points or otherwise as decided by the Society.

3. SCOPE AND PERFORMANCE

- 3.1. The Society shall perform the Services according to the applicable national and international standards and Industry Practice and always on the assumption that the Client is aware of such standards and Industry Practice.

3.2. Subject to the Services performance and always by reference to the Rules, the Society shall:

- review the construction arrangements of the Unit as shown on the documents provided by the Client;
- conduct the Unit surveys at the place of the Unit construction;
- class the Unit and enters the Unit's class in the Society's Register;
- survey the Unit periodically in service to note that the requirements for the maintenance of class are met. The Client shall inform the Society without delay of any circumstances which may cause any changes on the conducted surveys or Services.

The Society will not:

- declare the acceptance or commissioning of a Unit, nor its construction in conformity with its design, such activities remaining under the exclusive responsibility of the Unit's owner or builder;
- engage in any work relating to the design, construction, production or repair checks, neither in the operation of the Unit or the Unit's trade, neither in any advisory services, and cannot be held liable on those accounts.

4. RESERVATION CLAUSE

- 4.1. The Client shall always: (i) maintain the Unit in good condition after surveys; (ii) present the Unit after surveys; (iii) present the Unit for surveys; and (iv) inform the Society in due course of any circumstances that may affect the given appraisal of the Unit or cause to modify the scope of the Services.
- 4.2. Certificates referring to the Society's Rules are only valid if issued by the Society.
- 4.3. The Society has entire control over the Certificates issued and may at any time withdraw a Certificate at its entire discretion including, but not limited to, in the following situations: where the Client fails to comply in due time with instructions of the Society or where the Client fails to pay in accordance with clause 6.2 hereunder.

5. ACCESS AND SAFETY

- 5.1. The Client shall give to the Society all access and information necessary for the efficient performance of the requested Services. The Client shall be the sole responsible for the conditions of presentation of the Unit for tests, trials and surveys and the conditions under which tests and trials are carried out. Any information, drawings, etc. required for the performance of the Services must be made available in due time.
- 5.2. The Client shall notify the Society of any relevant safety issue and shall take all necessary safety-related measures to ensure a safe work environment for the Society or any of its officers, employees, servants, agents or subcontractors and shall comply with all applicable safety regulations.

6. PAYMENT OF INVOICES

- 6.1. The provision of the Services by the Society, whether complete or not, involve, for the part carried out, the payment of fees thirty (30) days upon issuance of the invoice.
- 6.2. Without prejudice to any other rights hereunder, in case of Client's payment default, the Society shall be entitled to charge, in addition to the amount not properly paid, interests equal to twelve (12) months LIBOR plus two (2) per cent as of due date calculated on the number of days such payment is delinquent. The Society shall also have the right to withhold certificates and other documents and/or to suspend or revoke the validity of certificates.
- 6.3. In case of dispute on the invoice amount, the undisputed portion of the invoice shall be paid and an explanation on the dispute shall accompany payment so that action can be taken to solve the dispute.

7. LIABILITY

- 7.1. The Society bears no liability for consequential loss. For the purpose of this clause consequential loss shall include, without limitation:
 - Indirect or consequential loss;
 - Any loss and/or deferral of production, loss of product, loss of use, loss of bargain, loss of revenue, loss of profit or anticipated profit, loss of business and business interruption, in each case whether direct or indirect.

The Client shall save, indemnify, defend and hold harmless the Society from the Client's own consequential loss regardless of cause.

- 7.2. In any case, the Society's maximum liability towards the Client is limited to one hundred and fifty per-cents (150%) of the price paid by the Client to the Society for the performance of the Services. This limit applies regardless of fault by the Society, including breach of contract, breach of warranty, tort, strict liability, breach of statute.
- 7.3. All claims shall be presented to the Society in writing within three (3) months of the Services' performance or (if later) the date when the events which are relied on were first discovered by the Client. Any claim not so presented as defined above shall be deemed waived and absolutely time barred.

8. INDEMNITY CLAUSE

- 8.1. The Client agrees to release, indemnify and hold harmless the Society from and against any and all claims, demands, lawsuits or actions for damages, including legal fees, for harm or loss to persons and/or property tangible, intangible or otherwise which may be brought against the Society, incidental to, arising out of or in connection with the performance of the Services except for those claims caused solely and completely by the negligence of the Society, its officers, employees, servants, agents or subcontractors.

9. TERMINATION

- 9.1. The Parties shall have the right to terminate the Services (and the relevant contract) for convenience after giving the other Party thirty (30) days' written notice, and without prejudice to clause 6 above.

9.2. In such a case, the class granted to the concerned Unit and the previously issued certificates shall remain valid until the date of effect of the termination notice issued, subject to compliance with clause 4.1 and 6 above.

10. FORCE MAJEURE

- 10.1. Neither Party shall be responsible for any failure to fulfil any term or provision of the Conditions if and to the extent that fulfilment has been delayed or temporarily prevented by a force majeure occurrence without the fault or negligence of the Party affected and which, by the exercise of reasonable diligence, the said Party is unable to provide against.
- 10.2. For the purpose of this clause, force majeure shall mean any circumstance not being within a Party's reasonable control including, but not limited to: acts of God, natural disasters, epidemics or pandemics, wars, terrorist attacks, riots, sabotages, impositions of sanctions, embargoes, nuclear, chemical or biological contaminations, laws or action taken by a government or public authority, quotas or prohibition, expropriations, destructions of the worksite, explosions, fires, accidents, any labour or trade disputes, strikes or lockouts

11. CONFIDENTIALITY

- 11.1. The documents and data provided to or prepared by the Society in performing the Services, and the information made available to the Society, are treated as confidential except where the information:
 - is already known by the receiving Party from another source and is properly and lawfully in the possession of the receiving Party prior to the date that it is disclosed;
 - is already in possession of the public or has entered the public domain, otherwise than through a breach of this obligation;
 - is acquired independently from a third party that has the right to disseminate such information;
 - is required to be disclosed under applicable law or by a governmental order, decree, regulation or rule or by a stock exchange authority (provided that the receiving Party shall make all reasonable efforts to give prompt written notice to the disclosing Party prior to such disclosure).
- 11.2. The Society and the Client shall use the confidential information exclusively within the framework of their activity underlying these Conditions.
- 11.3. Confidential information shall only be provided to third parties with the prior written consent of the other Party. However, such prior consent shall not be required when the Society provides the confidential information to a subsidiary.
- 11.4. The Society shall have the right to disclose the confidential information if required to do so under regulations of the International Association of Classifications Societies (IACS) or any statutory obligations.

12. INTELLECTUAL PROPERTY

- 12.1. Each Party exclusively owns all rights to its Intellectual Property created before or after the commencement date of the Conditions and whether or not associated with any contract between the Parties.
- 12.2. The Intellectual Property developed for the performance of the Services including, but not limited to drawings, calculations, and reports shall remain exclusive property of the Society.

13. ASSIGNMENT

- 13.1. The contract resulting from these Conditions cannot be assigned or transferred by any means by a Party to a third party without the prior written consent of the other Party.
- 13.2. The Society shall however have the right to assign or transfer by any means the said contract to a subsidiary of the Bureau Veritas Group.

14. SEVERABILITY

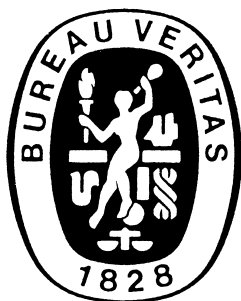
- 14.1. Invalidity of one or more provisions does not affect the remaining provisions.
- 14.2. Definitions herein take precedence over other definitions which may appear in other documents issued by the Society.
- 14.3. In case of doubt as to the interpretation of the Conditions, the English text shall prevail.

15. GOVERNING LAW AND DISPUTE RESOLUTION

- 15.1. The Conditions shall be construed and governed by the laws of England and Wales.
- 15.2. The Society and the Client shall make every effort to settle any dispute amicably and in good faith by way of negotiation within thirty (30) days from the date of receipt by either one of the Parties of a written notice of such a dispute.
- 15.3. Failing that, the dispute shall finally be settled by arbitration under the LCIA rules, which rules are deemed to be incorporated by reference into this clause. The number of arbitrators shall be three (3). The place of arbitration shall be London (UK).

16. PROFESSIONAL ETHICS

- 16.1. Each Party shall conduct all activities in compliance with all laws, statutes, rules, and regulations applicable to such Party including but not limited to: child labour, forced labour, collective bargaining, discrimination, abuse, working hours and minimum wages, anti-bribery, anti-corruption. Each of the Parties warrants that neither it, nor its affiliates, has made or will make, with respect to the matters provided for hereunder, any offer, payment, gift or authorization of the payment of any money directly or indirectly, to or for the use or benefit of any official or employee of the government, political party, official, or candidate.
- 16.2. In addition, the Client shall act consistently with the Society's Code of Ethics of Bureau Veritas, <http://www.bureauveritas.com/home/about-us/ethics-and-compliance>



RULE NOTE NR 562

NR 562 Requirements for Survey of Materials and Equipment for the Classification of Naval Submarines

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SECTION 1

GENERAL

1 Scope of application

1.1 Purpose

1.1.1 Rule Note NR562 summarizes the certification requirements for materials and equipment (generally referred to as «products») which are covered by the Class and used or fitted on board the following units:

- Naval Submarines surveyed by the Society during construction in accordance with the Rules for the Classification of Naval Submarines (NR535).

2 Application

2.1 General

2.1.1 The requirements for materials and equipment covered by the Class and used or fitted on board are given in the relevant parts of the Rules for the Classification of Steel Ships (NR467) or Naval Submarines (NR535), as applicable.

2.1.2 A reference to an item of NR266 in the column Remarks of this NR562 means that the applicable requirements of the Rules for the Classification of Naval Submarines (NR535) are normally equivalent to those of the Rules for the Classification of Steel Ships (NR467). In such case, a certificate issued in reference to NR467 should be acceptable with regards to NR535.

2.1.3 For a given project of naval submarine, the Builder has to review the items covered by the Class to check that this equivalence of Rules is applicable to this project. The equivalences defined for the Project are to be submitted to Bureau Veritas for acceptance.

2.1.4 The certification scheme of materials and equipment covered by the Class is given in the Society's Rule Note NR320 "Certification Scheme of Materials and Equipment for the Classification of Marine Units".

2.1.5 In case of inconsistency, the requirements of the applicable Classification Rules for the concerned unit prevail over the provisions of the present NR562.

2.1.6 In the case of a discrepancy between the provisions of the applicable International and National Regulations specified by the Naval Authority and those of the Society's Rules, the former takes normally precedence.

2.1.7 The Society reserves the right to modify the requirements given in the present NR562 to formulate new ones or to change their application in order to take into account the particulars of a given construction, as well as local circumstances.

2.1.8 The particular conditions and requirements expressed by National Flag Authorities, owners, shipyards or manufacturers may lead to additional surveys or other services to be specified and agreed in each case by the concerned parties.

2.1.9 Shipboard tests or tests on board (both at the moorings and during sea trials) are not covered by this NR562 and are additional to the workshop tests. Refer to relevant provisions of NR535 regarding shipboard tests.

2.2 Explanatory notes, symbols and abbreviations

2.2.1 Symbols used in the tables implemented in Section 2 have the following meaning:

"C" indicates that a BV product certificate is required with invitation of the Surveyor to attend the tests unless otherwise agreed, in addition to the manufacturer's document stating the results of the tests performed and/or compliance with the approved type as applicable.

"W" indicates that a manufacturer's document is required, stating the results of the tests performed and/or stating compliance with the approved type (as applicable).

"X" indicates that examinations and tests are required.

Where fitted, each additional index (h, ndt) indicates a specific type of test:

- h : Hydraulic pressure test (or equivalent)
- ndt : Non destructive tests as per Rules.

2.2.2 Column 1 (item code)

Column 1 contains an alpha-numeric code for ease of reference equipment or component.

2.2.3 Column 2 (item name)

Column 2 contains the name of the equipment or component with, eventually, its sub-systems.

2.2.4 Column 3 (design assessment / approval index)

Column 3 contains the design assessment / approval index. The meaning of the letters TA and DA is the following:

- TA : Type Approval is required
- TA (HBV): Type Approval is required with work's recognition (HBV scheme as per NR320)
- DA : Design assessment/Appraisal of the product is required; this one may be carried out as applicable:
 - either for a specific unit, or
 - using the Type Approval procedure.

Note 1: Where nothing is mentioned in column 3, a design assessment/approval of the specific unit is not required.

2.2.5 Column 4 (raw material certificate)

Column 4 indicates the nature of the document that is to be submitted by the manufacturer or supplier of the concerned raw material. Consistently with the Rules or agreed specifications, this document includes data such as material tests (chemical composition and mechanical properties), non-destructive tests and surface hardness (if hardened).

2.2.6 Columns 5 (examination and testing)

Column 5 indicates that examination and/or testing are required, and are to be carried out by the manufacturer. For the type of examination and/or testing required, reference is to be made to the relevant provisions of the Rules for the Classification of Steel Ships (NR467) and Naval Submarines (NR535).

Note 1: As a general rule, even if a cross “X” is not fitted in a cell under column 5, examination and tests during fabrication may be required with invitation/attendance of the Society’s Surveyor.

2.2.7 Column 6 (product certificate)

Column 6 indicates the nature of the document to be supplied by the manufacturer of the concerned product.

2.2.8 Column 7 (remarks)

Column 7 indicates the remarks (if any) associated to the concerned equipment or component.

2.3 Notice regarding columns 3 to 7 (product certification)

2.3.1 Column 3, column 4, column 5 column 6 and column 7 summarize the product certification process or steps to be completed by the manufacturer within the scope of Survey of Materials and Equipment at Works by the Society.

SECTION 2

EQUIPMENT AND MATERIALS CERTIFICATION
REQUIREMENTS FOR THE CLASSIFICATION OF
NAVAL SUBMARINES

1 Summary (tables)

1.1 Foreword

1.1.1 The materials and equipment are organized in different families labelled “Items” followed by letters (XA to XR), and a number for its sub-items where applicable; this constitutes an alpha-numeric code for ease of reference equipment or component as specified in Sec 1 of this NR562.

For each “Item” (and its sub-items where applicable), the certification requirements are summarized in a corresponding table. These tables are not to be considered as an alternative to or a substitute to the applicable Classification Rule requirements. Materials or equipment which are not considered in these tables are to be dealt with as per relevant provisions of applicable Classification Rules and/or as per criteria set up in agreement with the Society.

Item	Title
Item XA	Diving Safety
Item XB	General Safety
Item XC	Hull and Structure
Item XD	Manoeuvre System
Item XE	Diving System
Item XF	Propulsion System
Item XG	Energy Plant
Item XH	Steering Gear System
Item XJ	Electrical Networks
Item XK	Fluidic Utilities
Item XL	Bilge and Water Systems
Item XM	Refrigeration and HVAC Systems
Item XN	HP Gas and Fluid Systems
Item XO	Habitability Systems - Cold Rooms, Sewage & Waste Processing (Additional Class Notation REF-STORE)
Item XP	Control and Monitoring - SMS, COMM, Internal Communication Systems
Item XQ	Combat System
Item XR	AIP Systems - Installations covered by Additional Class Notation AIP (Air Independent Propulsion)

Table 1: Diving Safety - item XA

DIVING SAFETY - ITEM XA						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XA1	Flooding detection					(1) TA (HBV product). Non-specific for naval submarines, See NR266 item N5 / D / K
	1- Incident bilge level detectors	TA (1) (2)		X	W (3)	(2) Design requirements: NR535, Pt E, Ch 3, Sec 1 / Qualification requirements: NR535, Pt D, Ch 5
	2- Fault bilge level detector	TA (1) (2)		X	W (3)	(3) As per conditions set in the TA
XA2	Emergency shut-off					(1) Non-specific for naval submarines, See NR266 item G26
	1- Hull valve actuator (hydraulic)	DA or TA (1) (2)	C	X h ndt (3)	C	(2) Design requirements: NR535, Pt A, Ch 1, Sec 2, [3.3]; NR535, Pt E, Ch 3, Sec 1, [3]; NR535, Pt D, Ch 3, Sec 5, [10]; NR535, Pt D, Ch 3, Sec 5, [6]
	2- Seawater hull valve	DA (4)	C	X h ndt (5)	C	(3) Fabrication requirements: NR535, Pt D, Ch 3, Sec 3, Tab 2 and Tab 6; NR535, Pt D, Ch 3, Sec 5, Tab 32
	3- HP hydraulic bladder accumulators	DA (6)	W / C (6)	X h ndt (6)	W / C (6)	(4) Specific for naval submarines / Design requirements: NR535, Pt A, Ch 1, Sec 2, [3.3]; NR535, Pt D, Ch 3, Sec 5 [6]
	4- Non hydraulic actuators (as a reminder)	DA or TA (7) (8)	(7) (8)	X h (7) (8)	W / C (7)	(5) Fabrication requirements: NR535, Pt D, Ch 3, Sec 5, Tab 32 (6) Non-specific for naval submarines, See NR266 item G30 (Pressure vessels) (7) Non-specific for naval submarines, See NR266 (depending on the case)
XA3	Emergency HP air blowing					(1) Non-specific for naval submarines, See NR266 item G30 (Pressure vessels)
	1- HP air cylinders (without safety valve)	DA (1) (2)	C (1)	X h ndt (1)	C (1)	(2) Design requirements: NR535, Pt E, Ch 3, Sec 2
	2- Emergency HP air blowing valves	TA (3)	C	X h ndt (3)	C	(3) Specific for naval submarines / Design requirements: NR535, Pt A, Ch 1, Sec 2, [3.3]; NR535, Pt E, Ch 3, Sec 2, [2.2]
	3- Air cylinders for the air blowing valves control	DA (1) (2)	C (1)	X h ndt (1)	C (1)	
XA4	Depth, trim and list measurement					(1) TA (HBV product). Non-specific for naval submarines, See NR266 items N5 / D / K
	1- Pressure sensor	TA (1) (2)		X	W (3)	(2) Design requirements: NR535, Pt D, Ch 6, Sec 2, [3.4]
	2- Spirit levels and clinometers				(4)	(3) As per conditions set in the TA (4) Class certificate not required

Table 2: General Safety - item XB

GENERAL SAFETY - ITEM XB						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XB1	Breathing air (1)	DA				(1) Non-specific for naval submarines, See NR266 item G26 / G27 , Design requirements: NR535, Pt E, Ch 2, Sec 4
	1- Breathing air filtration unit		C / W (2)	X h ndt (2)	C / W (2)	(2) See NR266 item G27 (piping accessories)
	2- Breathing air intakes/cocks		C / W (2)	X h ndt (2)	C / W (2)	(3) See NR266 item G30 (pressure vessels)
	3- Air pressure reducers		C / W (2)	X h ndt (2)	C / W (2)	
	4- Portable air receivers		C / W (3)	X h ndt (3)	C / W (3)	
XB2	Fire detection and fire fighting					(1) Specific for naval submarines / Design requirements: NR535, Pt E, Ch 1, Sec 6 [7.3.2]
	1- Water mist electric pump module	TA (1)		X h ndt (2)	W / C (3)	(2) Qualification requirements: MSC 1165 § 12 adapted to specific requirements of naval submarines as per NR535, Pt E, Ch 1, Sec 6 [7.3.2]
	2- Water mist nozzles	TA (1)		X h ndt (2)	W (4)	(3) Fabrication requirements (BV): As per conditions set in the TA
	3- Fire detectors	TA (5) (6) (9)		X	C / W (7)	(4) Fabrication requirements (BV): As per conditions set in the TA, works recognition, Audit (HBV)
	4- Detection unit	TA (6) (8) (10)		X	C / W (7)	(5) Non-specific for naval submarines, See NR266 items N4 / K
	5- CO2 extinguishing cylinders	TA (6) (9) (11)		X	C / W (7)	(6) In the case of a discrepancy between the provisions of the applicable international and national regulations and those of the BV Classification Rules, normally the former take precedence. A valid certification to MED 2014/90/EU (or MED96/98/EC as amended for its Annex A1 items) is to be recognised for Classification purpose
	6- N2 extinguishing cylinders	TA (6) (10) (11)		X	C / W (7)	(7) Fabrication requirements (BV): As per conditions set in the TA
	7- Fire-fighter's outfits	(12)			(12)	(8) Non-specific for naval submarines, See NR266 item C16
	8- Fire dampers	TA (13)		X	W / C (14)	(9) Design requirements: NR535, Pt E, Ch 1, Sec 6, [7.2]; NR535, Pt E, Ch 1, Sec 1
						(10) Design requirements: NR535, Pt E, Ch 1, Sec 6 [7.2]; NR535, Pt E, Ch 1, Sec 2
						(11) Non-specific for naval submarines, See NR266 item C24
						(12) Statutory
						(13) See item XM6 (Fire dampers, ventilation isolating valve)
						(14) Fabrication requirements (BV): As per conditions set in the TA

GENERAL SAFETY - ITEM XB						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XB3	Atmosphere monitoring					(1) Non-specific for naval submarines, See NR266 items N4 / K + Statutory, on a case-by-case basis (detection capacity, MED for Europe for example, to be validated by the final Client)
	1- Hydrogen, CO2, CO, O2 and H2S analysers	TA (1) (2) (3)		X	C / W (4)	(2) Design requirements: NR535, Pt E, Ch 2, Sec 1
	2- Atmosphere control unit	TA (1) (2) (3)		X	C / W (4)	(3) In the case of a discrepancy between the provisions of the applicable international and national regulations and those of the BV Classification Rules, normally the former take precedence. A valid certification to MED 2014/90/EU (or MED96/98/EC as amended for its Annex A1 items) is to be recognised for Classification purpose
	3- CO2, CO and H2 portable analysers and processing case	TA (1) (3)		X	C / W (4)	(4) Fabrication requirements (BV): As per conditions set in the TA

Table 3: Hull and Structure - item XC

HULL AND STRUCTURE - ITEM XC						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XC1	Pressure hull					(1) Certification by Class Society (BV): not required if the equipment is already covered by the BV Certificate within the scope of construction survey at Shipyard (i.e. Shipyard holder of the BV Classification contract for the naval submarine) (2) Specific for naval submarines (3) Specific for naval submarines (Yes, for the Pressure hull) (4) Design requirements: NR535, Part C, Chapter 3 (5) Design requirements: NR535, Pt C, Ch 6, Sec 3 (6) Design requirements: NR535, Pt C, Ch 6, Sec 4 (7) Fabrication requirements: as per agreed survey program (8) Design requirements: NR535, Pt C, Ch 1, Sec 2 / Qualification requirements: NR216 and NR480; NR535, Pt C, Ch 1, Sec 2; Supplier to be recognized by BV
	1- Common frame space of the pressure hull	DA (1) (2) (4)	C	X (7)	C (7)	
	2- Pressure hull connecting part	DA (1) (2) (4)	C	X (7)	C (7)	
	3- Resistant structures (weapons tube and sewage tank excluded)	DA (1) (2) (4)	C	X (7)	C (7)	
	4- Integrated hull penetrations (Sleeves and mobile part)	DA (1) (2) (4)	C	X (7)	C (7)	
	5- Non integrated hull penetrations (Sleeves and mobile part)	DA (1) (2) (4)	C	X (7)	C (7)	
	6- Pressure hull bolted hatches	DA (1) (2) (4) (5)	C	X (7)	C (7)	
	7- Pressure hull manoeuvrable hatches	DA (1) (2) (4) (6)	C	X (7)	C (7)	
	8- Strength door	DA (1) (2) (4)	C	X (7)	C (7)	
	9- Resistant bulkhead	DA (1) (2) (4)	C	X (7)	C (7)	
	10- Cofferdam	DA (1) (2) (4)	C	X (7)	C (7)	
	11- Rolled products (plates, bars, sections, etc.)	DA (2) (8)	C (8)			
	12- Forged parts	DA (2) (8)	C (8)			
	13- Moulded parts	DA (2) (8)	C (8)			
	14- Welding consumables	TA (3) (8)	C (8)			

HULL AND STRUCTURE - ITEM XC						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XC2	Non-resisting external structures					(1) Certification by Class Society (BV): not required if the equipment is already covered by the BV Certificate within the scope of construction survey at Shipyard (i.e. Shipyard holder of the BV Classification contract for the naval submarine) (2) Specific for naval submarines (3) Design requirements: NR535, Part C, Chapter 4 (4) Fabrication requirements: as per agreed survey program (5) Non-specific for naval submarines, See NR266 item A1 (6) Non-specific for naval submarines, See NR266 item A11 (7) Non-specific for naval submarines, See NR266 item A10 (8) Non-specific for naval submarines, See NR266 item A3 (9) Design requirements: NR535, Pt C, Ch 1, Sec 2
	1- Non-resisting structure penetration	DA (1) (2) (3)	C	X (4)	C (4)	
	2- Ballast tank structure	DA (1) (2) (3)	C	X (4)	C (4)	
	3- Fuel oil tank structure	DA (1) (2) (3)	C	X (4)	C (4)	
	4- Keel structure	DA (1) (2) (3)	C	X (4)	C (4)	
	5- Bridge fin	DA (1) (2) (3)	C	X (4)	C (4)	
	6- Framework Forward and aft fins	DA (1) (2) (3)	C	X (4)	C (4)	
	7- Forward and aft rudder holes	DA (1) (2) (3)	C	X (4)	C (4)	
	8- Forward and aft gudgeons	DA (1) (2) (3)	C	X (4)	C (4)	
	9- Closings of external non-resistant structures (fairing, etc.)	DA (1) (2) (3)	C	X (4)	C (4)	
	10- Removable external framework components (bridge)	DA (1) (2) (3)	C	X (4)	C (4)	
	11- Bridge fin, bridge, framework hatches	DA (1) (2) (3)	C	X (4)	C (4)	
	12- Rolled products (plates, bars, sections, etc.)	DA (5) (9)	C (9)			
	13- Forged parts	DA (6) (9)	C (9)			
	14- Moulded parts	DA (7) (9)	C (9)			
	15- Welding consumables	DA (8) (9)	C (9)			

HULL AND STRUCTURE - ITEM XC						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XC3	Non-resisting internal structures					(1) Certification by Class Society (BV): not required if the equipment is already covered by the BV Certificate within the scope of construction survey at Shipyard (i.e. Shipyard holder of the BV Classification contract for the naval submarine) (2) Non-specific for naval submarines, See NR266 item C3 , C5 (3) Non-specific for naval submarines (4) Design requirements: Limited to structural Seatings (5) Fabrication requirements: as per agreed survey program (6) Non-specific for naval submarines, See NR266 item C1 (7) Non-specific for naval submarines, See NR266 item A1 (8) Non-specific for naval submarines, See NR266 item A11 (9) Non-specific for naval submarines, See NR266 item A10 (10) Non-specific for naval submarines, See NR266 item A3 (11) Design requirements: NR535, Pt C, Ch 1, Sec 2
	1- Bulkhead, deck and internal tank penetrations	DA (1) (2)	C	X (5)	C (5)	
	2- Internal tanks	DA (1) (3)	C	X (5)	C (5)	
	3- Fixed elements of the non-resisting internal structure (bulkheads, decks)	DA (1) (3) (6)	C	X (5)	C (5)	
	4- Internal doors, hatches and ladders	DA (1) (6)	C	X (5)	C (5)	
	5- Seatings	DA (1) (3) (4)	C	X (5)	C (5)	
	6- Non-resisting internal structures closings (including accommodation doors)	DA (1) (3)	C	X (5)	C (5)	
	7- Removable internal framework components	DA (1) (3)	C	X (5)	C (5)	
	8- Rolled products (plates, bars, sections, etc.)	DA (7) (11)	C (11)			
	9- Forged parts	DA (8) (11)	C (11)			
	10- Moulded parts	DA (9) (11)	C (11)			
	11- Welding consumables	DA (10) (11)	C (11)			
XC4	Modules assemblies					(1) Certification by Class Society (BV): not required if the equipment is already covered by the BV Certificate within the scope of construction survey at Shipyard (i.e. Shipyard holder of the BV Classification contract for the naval submarine) (2) Specific for naval submarines (3) Design requirements: NR535, Pt C, Ch 5, Sec 2 (4) Fabrication requirements: as per agreed survey program (5) Non-specific for naval submarines, See NR266 item A1 (6) Non-specific for naval submarines, See NR266 item A11 (7) Non-specific for naval submarines, See NR266 item A10 (8) Non-specific for naval submarines, See NR266 item A3 (9) Design requirements: NR535, Pt C, Ch 1, Sec 2
	1- Cradles suspension systems and structures	DA (1) (2)	C	X (4)	C (4)	
	2- Cradles and ship modules structures	DA (1) (2) (3)	C	X (4)	C (4)	
	3- Rolled products (plates, bars, sections, etc.)	DA (5) (9)	C (9)		(10)	
	4- Forged parts	DA (6) (9)	C (9)		(10)	
	5- Moulded parts	DA (7) (9)	C (9)		(10)	
	6- Welding consumables	DA (8) (9)	C (9)			

HULL AND STRUCTURE - ITEM XC						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XC5	Miscellaneous coatings, insulations and materials					(1) Non-specific for naval submarines, See NR266 item C1 (2) Design requirements: NR535, Pt E, Ch 1, Sec 2 (3) Qualification requirements: FTP Code (4) Fabrication requirements: works recognition, Audit (HBV); As per conditions set in the TA
	1- Miscellaneous insulations - Fire protection	TA (1) (2) (3)		X	W (4) (11)	(5) Non-specific for naval submarines, See NR266 item C6 (6) Fabrication requirements: As per conditions set in the TA (7) Design requirements: NR535, Pt C, Ch 1, Sec 4; NR535, Pt E, Ch 1, Sec 1
	2- Ceilings	TA (5)		X	C / W (6) (11)	(8) Non-specific for naval submarines, See NR266 item L4 (9) Design requirements: NR535, Pt C, Ch 1, Sec 4, [2.2] (10) Specific for naval submarines (not covered by Class Society) (11) Statutory / In the case of a discrepancy between the provisions of the applicable international and national regulations and those of the BV Classification Rules, normally the former take precedence. A valid certification to MED 2014/90/EU (or MED96/98/EC as amended for its Annex A1 items) is to be recognised for Classification purpose
	3- Internal coatings	TA (5)		X	C / W (6) (11)	(12) Corrosion protective coating (epoxy or equivalent): see NR266 item B23 (information)
	4- Ship inside painting (12)	TA (5) (7)		X	C / W (6) (11)	
	5- Anti-corrosion protection through galvanic anodes	DA (8) (9)	C (9)	X	C	
	6- Buoyancy material	(10)				

Table 4: Manoeuvre System - item XD

MANOEUVRE SYSTEM - ITEM XD						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XD1	Anchoring, mooring and towing, Boat, gangway, deck accessories					(1) Additional Class Notation ANCHORING (2) Non-specific for naval submarines, See NR266 item B3 , B4 and B5 (3) Design requirements: NR535, Pt C, Ch 6, Sec 2 (4) Approval as per NR216 and NR480 (5) Additionally the approval of manufacturing process is required for round bars in grades Q2 or Q3 (6) DA for ordinary anchors (7) TA for High holding power (HHP) and very high holding power (VHHP) anchors - ref. NR467, Pt B, Ch 9, Sec 4, [3] and NR216
	1- Anchor line, Anchor chain cable	DA (1) (2) (3) (4)	C (5)	X	C	
	2- Anchors	DA (6) or TA (7) (1) (2) (3)	C	X	C	
	3- Anchor chain cable accessories (shackles, kenter shackles and swivels)	DA (1) (2) (3) (4)	C	X	C	

Table 5: Diving System - item XE

DIVING SYSTEM - ITEM XE						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XE1	Lightening					(1) Specific for naval submarines, Certification by Class Society (BV) as per NR535, Pt A, Ch 1, Sec 2, [3.3] / Design requirements: NR535, Pt D, Ch 3, Sec 5, [7] / Qualification requirements: as per agreed program
	1- Ballast tank vent valve	(1)	(1)	(1)	(1)	(2) Specific for naval submarines, also see NR266 item G26
	2- Blowing NRV	DA (2) (3)	C / W (2)	X	C / W (2)	(3) Design requirements: NR535, Pt D, Ch 3, Sec 5, [7]
	3- HP air cylinders (without safety valve)	DA (4) (3)	C / W (4) (3)	X	C (4)	(4) Non-specific for naval submarines, See NR266 item G30

DIVING SYSTEM - ITEM XE						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XE2	Regulating and trim control systems					(1) Certification by Class Society (BV): not required if the equipment is already covered by the BV Certificate within the scope of construction survey at Shipyard (i.e. Shipyard holder of the BV Classification contract for the naval submarine); Specific for naval submarines
	1- Resistant regulating tanks	DA (1) (2)	C (3)	X (3)	C (3)	(2) Design requirements: NR535, Part C, Chapter 3
	2- Non-resistant regulating tanks	(4)				(3) Fabrication requirements: as per agreed survey program
	3- Compensating tanks	(4)				(4) Certification by Class Society (BV): NO
	4- Trim electric pump	(19)	(19)	X	W / C (19)	(5) Specific for naval submarines
	5- Trim electric pump starting unit	(4)				(6) Design requirements: NR535, Pt D, Ch 3, Sec 5, [9]
	6- Transfer electric pump	(19)	(19)	X	W / C (19)	(7) Qualification requirements: NR535, Pt D, Ch 3, Sec 5, [9] and [19]
	7- Transfer pump starting unit	(4)				(8) As per conditions set in the TA
	8- Regulating electric pump (connected to the sea)	TA (6) (7)	C (8)	X (8)	C (8)	(9) Design requirements: NR535, Pt D, Ch 3, Sec 5, [6]
	9- Stripping electric pump (connected to the sea)	TA (6) (7)	C (8)	X (8)	C (8)	(10) Qualification requirements: NR535, Pt D, Ch 3, Sec 5, [19] and Tab 32
	10- Regulating pump starting unit	(4)				(11) Fabrication requirements: NR535, Pt D, Ch 3, Sec 5, [19] and Tab 32
	11- External hull valve	DA (5) (9) (10)	C (11)	X (11)	C (11)	(12) Non-specific for naval submarines, See NR266 item G26
	12- Internal hull valve	DA (5) (9) (10)	C (11)	X (11)	C (11)	(13) Design requirements: NR535, Pt E, Ch 3, Sec 1, [3]; NR535, Pt D, Ch 3, Sec 5, [10]; NR535, Pt D, Ch 3, Sec 5 [6]
	13- Internal hull valve actuator (if pressurized piping technology)	DA or TA (12) (13)	C (12) (14)	X (14)	C (12) (14)	(14) Fabrication requirements: NR535, Pt D, Ch 3, Sec 3, Tab 2 and Tab 6; NR535, Pt D, Ch 3, Sec 5, Tab32
	14- Internal hull valve actuator (if non pressurized piping technology)	(4)				(15) Non-specific for naval submarines, See NR266 item G28
	15- HP seawater flexible hose	TA (15) (16) (17)	W	X (18)	C (18)	(16) Design requirements: NR535, Pt D, Ch 3, Sec 5, [2.6], [19] and [6.3.2], item b)
						(17) Qualification requirements: NR535, Pt D, Ch 3, Sec 5, [19], Tab 31 and [19.4.7]
						(18) Fabrication requirements: NR535, Pt D, Ch 3, Sec 5, [19], Tab 31
						(19) Requirements regarding pumps of class III (P ≤ 10 bar), see NR266 item G31

Table 6: Propulsion System - item XF

PROPULSION SYSTEM - ITEM XF						
No.	Item	Product certification				Remarks
		Design assessment / Approval	Raw material certificate	Examination and testing	Product certificate	
XF1	Shaft line stern sealing gland					(1) Certification by Class Society (BV): as per NR535, Pt A, Ch 1, Sec 2, [3.3]
	1- Shaft line stern sealing gland	(1)				
XF2	Shaft line Installation					(1) Non-specific for naval submarines, See NR266 item G9 (2) Design requirements: NR535, Pt D, Ch 2, Sec 1 (3) Non-specific for naval submarines, See NR266 item G5 (4) Design requirements: NR535, Pt D, Ch 2, Sec 2, [2.4] (5) Qualification requirements: NR535, Pt D, Ch 2, Sec 2, [5] (6) Design requirements: NR535, Pt D, Ch 2, Sec 2, [2.2] (7) Non-specific for naval submarines, See NR266 item G5-11 (8) Design requirements: NR535, Pt D, Ch 2, Sec 2, [2.5] (9) Non-specific for naval submarines, See NR266 item G5-10 (10) Design requirements: NR535, Pt D, Ch 2, Sec 2, [2.7]
	1- Propeller	DA or TA (1) (2)	C	X	C	
	2- Submerged aft bearing support	DA (3) (4) (5)	W	X	W	
	3- Submerged aft bearing	DA (3) (4) (5)	W	X	W	
	4- Propeller shaft	DA (3) (6) (5)	C	X	C	
	5- Removable section	DA (3) (6) (5)	C	X	C	
	6- Radial thrust block	DA (3) (4) (5)	W	X	W	
	7- Main thrust block	DA (7) (8) (5)	W	X	W	
XF3	Greasing of the turbo-gearbox unit and the EPM					(1) Non-specific for naval submarines, See NR266 item G26 (2) Design requirements: NR535, Pt D, Ch 3, Sec 5, [17]
	1- Greasing of the turbo-gearbox unit and the EPM	DA (1) (2)	C / W	X	C / W	
XF4	Greasing of the shaft line					(1) Non-specific for naval submarines, See NR266 item G26 (2) Design requirements: NR535, Pt D, Ch 3, Sec 5, [17]
	1- Greasing of the shaft line	DA (1) (2)	C / W	X	C / W	
XF5	Electric propulsion motors					(1) Non-specific for naval submarines, See NR266 item K1 (2) Design requirements: NR535, Pt D, Ch 4, Sec 13 (3) Non-specific for naval submarines, See NR266 item K7 (4) Fabrication requirements: As per conditions set in the TA
	1- Electric Propulsion Motor	DA or TA (1) (2)	C / W (4)	X	C / W (4)	
	2- Converter cabinets	DA or TA (3) (2)		X	C / W (4)	
XF6	Emergency electric motor					(1) Non-specific for naval submarines, See NR266 item K1 (2) Design requirements: NR535, Pt D, Ch 4, Sec 13 (3) Fabrication requirements: As per conditions set in the TA
	1- Emergency electric motor	DA or TA (1) (2)	C / W (3)	X	C / W (3)	
XF7	Auxiliary propulsion					(1) Certification by Class Society (BV): NO
	1- Auxiliary propulsion	(1)				