



**BUREAU
VERITAS**

Fast Oil Recovery System (FORS)

January 2010

**Rule Note
NR 553 DT R00 E**

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**BUREAU
VERITAS**

ARTICLE 1

1.1. - BUREAU VERITAS is a Society the purpose of whose Marine Division (the "Society") is the classification ("Classification") of any ship or vessel or structure of any type or part of it or system therein collectively hereinafter referred to as a "Unit" 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.

The Society:

- prepares and publishes Rules for classification, Guidance Notes and other documents ("Rules");
- issues Certificates, Attestations and Reports following its interventions ("Certificates");
- publishes Registers.

1.2. - The Society also participates in the application of National and International Regulations or Standards, in particular by delegation from different Governments. Those activities are hereafter collectively referred to as "Certification".

1.3. - The Society can also provide services related to Classification and Certification such as 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.

1.4. - The interventions mentioned in 1.1., 1.2. and 1.3. are referred to as "Services". The party and/or its representative requesting the services is hereinafter referred to as the "Client". **The Services are prepared and carried out on the assumption that the Clients are aware of the International Maritime and/or Offshore Industry (the "Industry") practices.**

1.5. - The Society is neither and may not be considered as an Underwriter, Broker in ship's sale or chartering, Expert in Unit's valuation, Consulting Engineer, Controller, Naval Architect, Manufacturer, Shipbuilder, Repair yard, Charterer or Shipowner who are not relieved of any of their expressed or implied obligations by the interventions of the Society.

ARTICLE 2

2.1. - Classification is the appraisal given by the Society for its Client, at a certain date, following surveys by its Surveyors along the lines specified in Articles 3 and 4 hereafter on the level of compliance of a Unit to its Rules or part of them. This appraisal is represented by a class entered on the Certificates and periodically transcribed in the Society's Register.

2.2. - Certification is carried out by the Society along the same lines as set out in Articles 3 and 4 hereafter and with reference to the applicable National and International Regulations or Standards.

2.3. - **It is incumbent upon the Client to maintain the condition of the Unit after surveys, to present the Unit for surveys and to inform the Society without delay of circumstances which may affect the given appraisal or cause to modify its scope.**

2.4. - The Client is to give to the Society all access and information necessary for the safe and efficient performance of the requested Services. The Client is 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.

ARTICLE 3

3.1. - **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 knowledge of the Industry. They 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.**

Committees consisting of personalities from the Industry contribute to the development of those documents.

3.2. - **The Society only is qualified to apply its Rules and to interpret them. Any reference to them has no effect unless it involves the Society's intervention.**

3.3. - The Services of the Society are carried out by professional Surveyors according to the applicable Rules and to the Code of Ethics of the Society. Surveyors have authority to decide locally on matters related to classification and certification of the Units, unless the Rules provide otherwise.

3.4. - **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.**

ARTICLE 4

4.1. - The Society, acting by reference to its Rules:

- reviews the construction arrangements of the Units as shown on the documents presented by the Client;
- conducts surveys at the place of their construction;
- classes Units and enters their class in its Register;
- surveys periodically the Units in service to note that the requirements for the maintenance of class are met.

The Client is to inform the Society without delay of circumstances which may cause the date or the extent of the surveys to be changed.

ARTICLE 5

5.1. - **The Society acts as a provider of services. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty.**

5.2. - **The certificates issued by the Society pursuant to 5.1. here above are a statement on the level of compliance of the Unit to its Rules or to the documents of reference for the Services provided for.**

In particular, the Society does not engage in any work relating to the design, building, production or repair checks, neither in the operation of the Units or in their trade, neither in any advisory services, and cannot be held liable on those accounts. Its certificates 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.

5.3. - **The Society does not declare the acceptance or commissioning of a Unit, nor of its construction in conformity with its design, that being the exclusive responsibility of its owner or builder, respectively.**

MARINE DIVISION GENERAL CONDITIONS

5.4. - The Services of the Society cannot create any obligation bearing on the Society or constitute any warranty of proper operation, beyond any representation set forth in the Rules, of any Unit, equipment or machinery, computer software of any sort or other comparable concepts that has been subject to any survey by the Society.

ARTICLE 6

6.1. - The Society accepts no responsibility for the use of information related to its Services which was not provided for the purpose by the Society or with its assistance.

6.2. - **If the Services of the Society cause to the Client a damage which is proved to be the direct and reasonably foreseeable consequence of an error or omission of the Society, its liability towards the Client is limited to ten times the amount of fee paid for the Service having caused the damage, provided however that this limit shall be subject to a minimum of eight thousand (8,000) Euro, and to a maximum which is the greater of eight hundred thousand (800,000) Euro and one and a half times the above mentioned fee.**

The Society bears no liability for indirect or consequential loss such as e.g. loss of revenue, loss of profit, loss of production, loss relative to other contracts and indemnities for termination of other agreements.

6.3. - All claims are to be presented to the Society in writing within three months of the date when the Services were supplied or (if later) the date when the events which are relied on were first known to the Client, and any claim which is not so presented shall be deemed waived and absolutely barred. Time is to be interrupted thereafter with the same periodicity.

ARTICLE 7

7.1. - Requests for Services are to be in writing.

7.2. - **Either the Client or the Society can terminate as of right the requested Services after giving the other party thirty days' written notice, for convenience, and without prejudice to the provisions in Article 8 hereunder.**

7.3. - The class granted to the concerned Units and the previously issued certificates remain valid until the date of effect of the notice issued according to 7.2. here above subject to compliance with 2.3. here above and Article 8 hereunder.

7.4. - The contract for classification and/or certification of a Unit cannot be transferred neither assigned.

ARTICLE 8

8.1. - The Services of the Society, whether completed or not, involve, for the part carried out, the payment of fee upon receipt of the invoice and the reimbursement of the expenses incurred.

8.2. **Overdue amounts are increased as of right by interest in accordance with the applicable legislation.**

8.3. - **The class of a Unit may be suspended in the event of non-payment of fee after a first unfruitful notification to pay.**

ARTICLE 9

9.1. - The documents and data provided to or prepared by the Society for its Services, and the information available to the Society, are treated as confidential. However:

- clients have access to the data they have provided to the Society and, during the period of classification of the Unit for them, to the classification file consisting of survey reports and certificates which have been prepared at any time by the Society for the classification of the Unit;
- copy of the documents made available for the classification of the Unit and of available survey reports can be handed over to another Classification Society, where appropriate, in case of the Unit's transfer of class;
- the data relative to the evolution of the Register, to the class suspension and to the survey status of the Units, as well as general technical information related to hull and equipment damages, are passed on to IACS (International Association of Classification Societies) according to the association working rules;
- the certificates, documents and information relative to the Units classed with the Society may be reviewed during certifying bodies audits and are disclosed upon order of the concerned governmental or inter-governmental authorities or of a Court having jurisdiction.

The documents and data are subject to a file management plan.

ARTICLE 10

10.1. - Any delay or shortcoming in the performance of its Services by the Society arising from an event not reasonably foreseeable by or beyond the control of the Society shall be deemed not to be a breach of contract.

ARTICLE 11

11.1. - In case of diverging opinions during surveys between the Client and the Society's surveyor, the Society may designate another of its surveyors at the request of the Client.

11.2. - Disagreements of a technical nature between the Client and the Society can be submitted by the Society to the advice of its Marine Advisory Committee.

ARTICLE 12

12.1. - Disputes over the Services carried out by delegation of Governments are assessed within the framework of the applicable agreements with the States, international Conventions and national rules.

12.2. - Disputes arising out of the payment of the Society's invoices by the Client are submitted to the Court of Nanterre, France.

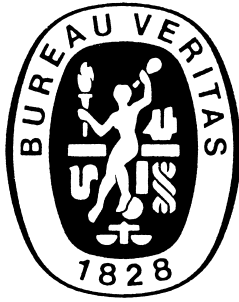
12.3. - **Other disputes over the present General Conditions or over the Services of the Society are exclusively submitted to arbitration, by three arbitrators, in London according to the Arbitration Act 1996 or any statutory modification or re-enactment thereof. The contract between the Society and the Client shall be governed by English law.**

ARTICLE 13

13.1. - **These General Conditions constitute the sole contractual obligations binding together the Society and the Client, to the exclusion of all other representation, statements, terms, conditions whether express or implied. They may be varied in writing by mutual agreement.**

13.2. - The invalidity of one or more stipulations of the present General Conditions does not affect the validity of the remaining provisions.

13.3. - The definitions herein take precedence over any definitions serving the same purpose which may appear in other documents issued by the Society.



RULE NOTE NR 553

NR 553 Fast Oil Recovery System (FORS)

SECTION 1 FAST OIL RECOVERY SYSTEM (FORS)

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1	General	3
1.1	Application of the additional class notation FORS	
1.2	Documents to be submitted	
1.3	Definitions	
2	Requirements for the design and installation of the connectors	3
2.1	General	
2.2	Number of connectors	
2.3	Design of the connectors	
2.4	Installation and access	
3	Additional requirements for -NS notation	5
3.1	General	
3.2	Requirements	

SECTION 1 FAST OIL RECOVERY SYSTEM (FORS)

1 General

1.1 Application of the additional class notation FORS

1.1.1 The additional class notation **FORS** may be assigned to ships with oil fuel tanks and cargo tanks, as applicable, fitted with two (or more) connectors allowing the recovery of the tank contents as follows:

- by injecting sea water through one connector, the tank contents being recovered through the other one, or
- by introducing a submersible pump into the tank through one of the connectors.

1.1.2 The additional class notation **FORS** may be completed by the notation **-NS** when the connectors are intended to be used during the normal service of the ship and, for that purpose, comply with the additional requirements given in Article [3].

1.1.3 For ships not assigned with the notation **-NS**, the connectors may be used only to facilitate the recovery of the tank contents when the ship is damaged or wrecked.

1.2 Documents to be submitted

1.2.1 The plans and documents to be submitted are listed in Tab 1.

1.2.2 The procedures for installation, use and maintenance of the connectors are to be submitted for information.

Table 1 : Documents to be submitted

Item n°	I/A (1)	Document
1	I	Exhaustive list of cargo tanks and oil fuel tanks, mentioning their capacity and whether they are fitted with connectors or, alternatively, capacity plan with same information
2	I	Ship layout drawing showing the location and the type of the connectors
3	A	Drawing of each type of connector with indication of wall thickness, material and coating
4	A	Calculation of the maximum allowable flow rate, when the additional notation -NS is assigned to the ship
(1)	I	: to be submitted for information
	A	: to be submitted for approval

1.3 Definitions

1.3.1 Oil fuel

“Oil fuel” means any oil used as fuel oil in connection with the propulsion and auxiliary machinery of the ship in which such oil is carried. For the purpose of this definition, oil residues (sludge) and oily bilge water are not to be considered as oil fuel.

1.3.2 Oil fuel tank

“Oil fuel tank” means a tank in which oil fuel is carried, but excludes those tanks which do not contain oil fuel in normal operation, such as overflow tanks.

1.3.3 Cargo

“Cargo” means a liquid cargo carried in bulk in an oil tanker as defined in SOLAS 74 (as amended), Regulation 2.12, or in a chemical tanker as defined in SOLAS 74 (as amended), Regulation 3.19.

1.3.4 Cargo tank

“Cargo tank” means a tank in which cargo as defined in [1.3.2] above is carried. It includes slop tanks.

1.3.5 Tank

For the purpose of the **FORS** notation, a tank means either an oil fuel tank or a cargo tank.

1.3.6 Connector

A connector means a pipe section fitted with a flange sealed by a blind flange. It may be:

- a “Tee” pipe section inserted in a piping system connected to the tank top and which cannot be isolated from the tank,
- a dedicated pipe section directly connected to the tank, which may extend or not below the tank top plating.

1.3.7 Fast oil recovery system

The fast oil recovery system is a set of connectors designed and arranged in compliance with the requirements below.

2 Requirements for the design and installation of the connectors

2.1 General

2.1.1 The following tanks are to be fitted with connectors:

- all cargo tanks, irrespective of their capacity,
- oil fuel tanks having a capacity of more than:
 - 30 m³ when the aggregate oil fuel capacity of the ship is less than 600 m³
 - 5% of the aggregate oil fuel capacity when that capacity is of 600 m³ or more

2.1.2 Unless otherwise specified, the design and installation of the connectors are to comply with the applicable provisions of the Rules.

2.1.3 The installation of the connectors is not to affect the safe operation of the piping systems connected to the tank nor to result in an increase of the pressure or vacuum in the tank during the normal pumping operations, likely to exceed its design pressure.

2.2 Number of connectors

2.2.1 The number of connectors is to be in accordance with the recommendations of the fast oil recovery system's designer.

2.2.2 Where tanks are required to be fitted with connectors in pursuance of [2.1.1], at least two connectors are to be provided.

Note 1: Where tanks are interconnected (e.g. through an overflow piping system) common connectors may be used.

2.3 Design of the connectors

2.3.1 Materials

Materials used for the connectors and gaskets are to comply with the relevant provisions of NR467 Rules for Steel Ships (in particular Part C, Chapter 1, Sec 10) and are to be suitable for the characteristics of the concerned fluids.

2.3.2 Thickness

The thickness of the connectors is not to be less than:

- the minimum value indicated in NR467 Rules for Steel Ships, Part C, Chapter 1, Sec 10, Table 6, column 2, if the connector is fitted to the tank
- that of the adjacent pipe if the connector is fitted to a pipe.

2.3.3 Flanges

The connector flange and blind counter-flange intended for the hose connection are to have a nominal diameter of 200 mm and to be designed in accordance with a recognised standard.

2.4 Installation and access

2.4.1 Fitting of the connectors to a piping system

The following piping systems may be used for the installation of the connectors:

- venting pipe
- sounding pipe
- overflow pipe
- drop line
- pressure / vacuum valve header
- sampling pipe.

2.4.2 Fitting of the connectors to the tank top

Connectors fitted to the tank top are to be welded:

- to the tank plating, or
- to an access cover (such as man hole cover, tank cleaning hatch cover, etc.).

2.4.3 Inclination angle and height of the connectors

The connectors may be installed vertically, horizontally or in inclined position.

The height of the connector flange above the deck is not to be less than 200 mm.

2.4.4 Free passage area

The installation of a connector is not to reduce the free passage area of the concerned pipe line.

2.4.5 Bending radius

Where the connectors are intended for the introduction of a submersible pump into the tank, the bending radius of the concerned pipe line is not to be less than 1 meter.

2.4.6 Prevention of progressive flooding

Connector pipes are to satisfy the criteria for the prevention of progressive flooding given in NR467 Rules for Steel Ships, Part C, Chapter 1, Sec 10, [5.5].

2.4.7 Supporting of the connectors

Where necessary, brackets or alternative means of support are to be provided. Refer to NR467 Rules for Steel Ships, Part C, Chapter 1, Sec 10, [9.1.9].

2.4.8 Name plates and warning plates

Each connector is to be fitted with:

- a) a name plate giving the following information:
 - 1) identification of the tank
 - 2) nature of the tank content (oil fuel or cargo)
 - 3) volume of the tank
 - 4) purpose of the connector (water injection, oil recovery, introduction of a submersible pump, as applicable)
 - 5) distance between the connector flange and the lowest allowable position of the submersible pump, where applicable
- b) a warning plate indicating that the connector is not to be used during the normal operation of the ship, except if the notation **-NS** is assigned to the ship.

2.4.9 Access

A free zone is to be arranged in way of each connector to ensure easy access. This zone is to include at least the volume defined as follows:

- 200 mm from the flange circumference
- between 100 and 2500 mm from the connector flange plane.

3 Additional requirements for -NS notation

3.1 General

3.1.1 The provisions of this Article apply to the ships having the additional notation **-NS**, i.e. where the connectors are intended to be used during the normal service of the ship.

3.2 Requirements

3.2.1 Principle

The use of the connectors may not under any circumstances cause:

- an excessive vacuum or pressure in the tank likely to affect the tank structure
- a damage of any component of the piping systems connected to the tank, in particular the air pipe automatic closing devices.

3.2.2 Maximum allowable flow rate

The maximum allowable flow rate is to be indicated and justified for each connector, taking into account:

- the pressure losses in the air pipe
- the design static head of the tank
- the characteristics of the air pipe automatic closing device, if any.

Note 1: The air pipe automatic closing devices are to be of a type approved by BV for the worst expected conditions. Refer to NR467 Rules for Steel Ships, Part C, Chapter 1, Sec 10, [9.6.1] and [20.2.2].

3.2.3 Name plate

The name plate referred to in [2.4.8] a) above is also to include the value of the maximum flow rate allowed for the connector.

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