



---

NEWBUILDINGS  
SPECIAL SERVICE AND TYPE – ADDITIONAL CLASS

# Slop Reception and Processing Facilities

JANUARY 2011

*This chapter has been amended since the main revision (January 2011), most recently in July 2011.  
See "Changes" on page 3.*

---

The content of this service document is the subject of intellectual property rights reserved by Det Norske Veritas AS (DNV). The user accepts that it is prohibited by anyone else but DNV and/or its licensees to offer and/or perform classification, certification and/or verification services, including the issuance of certificates and/or declarations of conformity, wholly or partly, on the basis of and/or pursuant to this document whether free of charge or chargeable, without DNV's prior written consent. DNV is not responsible for the consequences arising from any use of this document by others.

---

## FOREWORD

DET NORSKE VERITAS (DNV) is an autonomous and independent foundation with the objectives of safeguarding life, property and the environment, at sea and onshore. DNV undertakes classification, certification, and other verification and consultancy services relating to quality of ships, offshore units and installations, and onshore industries worldwide, and carries out research in relation to these functions.

The Rules lay down technical and procedural requirements related to obtaining and retaining a Class Certificate. It is used as a contractual document and includes both requirements and acceptance criteria.

The electronic pdf version of this document found through <http://www.dnv.com> is the officially binding version  
© Det Norske Veritas AS January 2011

Any comments may be sent by e-mail to [rules@dnv.com](mailto:rules@dnv.com)  
For subscription orders or information about subscription terms, please use [distribution@dnv.com](mailto:distribution@dnv.com)  
Computer Typesetting (Adobe Frame Maker) by Det Norske Veritas

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million.  
In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

## CHANGES

### General

As of October 2010 all DNV service documents are primarily published electronically.

In order to ensure a practical transition from the “print” scheme to the “electronic” scheme, all rule chapters having incorporated amendments and corrections more recent than the date of the latest printed issue, have been given the date January 2011.

An overview of DNV service documents, their update status and historical “amendments and corrections” may be found through [http://www.dnv.com/resources/rules\\_standards/](http://www.dnv.com/resources/rules_standards/).

### Amendments July 2011

- **General**

— The restricted use legal clause found in Pt.1 Ch.1 Sec.5 has been added also on the front page.

### Main changes

Since the previous edition (January 2003), this chapter has been amended, most recently in January 2004. All changes previously found in Pt.0 Ch.1 Sec.3 have been incorporated and a new date (January 2011) has been given as explained under “General”.

In addition, the layout has been changed to one column in order to improve electronic readability.

## CONTENTS

<b>Sec. 1</b>	<b>General Requirements</b>	<b>5</b>
<b>A.</b>	<b>Classification</b>	<b>5</b>
A 100	Application	5
A 200	Class notation	5
A 300	Documentation	5
A 400	Certification control and monitoring system	5
<b>B.</b>	<b>Assumptions</b>	<b>5</b>
B 100	Operational conditions	5
<b>Sec. 2</b>	<b>Hull Structures, Piping Arrangement, Separating System and Fire Protection</b>	<b>7</b>
<b>A.</b>	<b>Hull Strength and Arrangement</b>	<b>7</b>
A 100	General	7
A 200	Fender arrangement	7
<b>B.</b>	<b>Arrangement for Transfer of Oily Water and Oil Residues</b>	<b>7</b>
B 100	Hose and transfer arrangement	7
B 200	Lighting	7
<b>C.</b>	<b>Separating System</b>	<b>7</b>
C 100	General	7
<b>D.</b>	<b>Oil Content Monitoring</b>	<b>8</b>
D 100	General	8
<b>E.</b>	<b>Protection against Fire and Explosion</b>	<b>8</b>
E 100	General	8
E 200	Fire protection, extinguishing and detecting systems	8
E 300	Foam system	8
E 400	Inert gas system	8
E 500	Electrical installations in gas dangerous spaces and zones	8
E 600	Miscellaneous	8
<b>Sec. 3</b>	<b>Operational Instructions and Log Book</b>	<b>9</b>
<b>A.</b>	<b>Instruction Materials</b>	<b>9</b>
A 100	Equipment and systems	9
A 200	Procedures	9
<b>B.</b>	<b>Safety and Oily Water/Oil Residues Log Book</b>	<b>9</b>
B 100	Log book contents and entries	9

## SECTION 1 GENERAL REQUIREMENTS

### A. Classification

#### A 100 Application

**101** The rules in this chapter apply to newbuildings as well as to conversions of existing vessels to serve as floating facilities for reception and processing of oily water and oil residues. The subsequent requirements are to be regarded as supplementary to the requirements for main class and relevant requirements as given in Pt.5 Ch.3 for ships intended for carriage of oil with flashpoint below 60°C.

#### A 200 Class notation

**201** Facilities designed and built, surveyed and tested in compliance with the requirements in this chapter and other relevant requirements may be assigned the following additional class with the Society:

##### **Slop Reception and Processing Facility**

**202** The classification is aimed at safety against hazards to the personnel, the facility and the environment.

**203** The assignment of class will be based upon:

- approval of documentation, i.e. specifications, plans, calculations, etc.,
- approval of the instruction manuals for the facility,
- inspection during manufacturing of materials and equipment,
- inspection during construction, installation and testing of the facility,
- inspection upon completion, including testing of the separating system for proper function.

##### **Guidance note:**

In addition to the requirements of the Society, relevant requirements in the Regulations of National Authorities will have to be complied with in connection with the registration and or location of the facility.

---e-n-d---of---G-u-i-d-a-n-c-e---n-o-t-e---

#### A 300 Documentation

**301** In addition to the relevant parts of the documentation as required for oil tankers in Ch.3 Sec.1 C, the following is to be submitted for approval:

- Drawings and specification for the separating system.
- Drawings of the fendering arrangement.
- Specification of transfer hoses.
- Drawings of deck lighting arrangement.
- Instruction manuals for the facility.

**302** The following control and monitoring systems shall be approved by the Society:

- oil separating system
- fire extinguishing system
- fire detection system
- inert gas system.

For requirements to documentation, see Pt.4 Ch.9.

#### A 400 Certification control and monitoring system

**401** The following control and monitoring system shall be certified according to Pt.4 Ch.9:

- oil separating system
- fire detection system
- inert gas system.

### B. Assumptions

#### B 100 Operational conditions

**101** The classification of the facility will be based upon the following basic assumptions:

- that oily water and oil residues originating from oil with flash point below 60°C are considered to maintain

- a flash point below 60°C and that such liquids are not transferred to the facility's engine room,
- that transfer of oily water and oil residues between delivery vessel and the facility is only done under favourable weather conditions,
- that the facility is operated by qualified personnel,
- that a two-way communication system is provided between the delivery vessel and the facility during the transfer operation, ensuring reliable and direct contact with the personnel controlling the transfer pump.

**102** The above basic assumptions will be stated in the Appendix to the Classification Certificate for the facility.

## SECTION 2

### HULL STRUCTURES, PIPING ARRANGEMENT, SEPARATING SYSTEM AND FIRE PROTECTION

#### A. Hull Strength and Arrangement

##### A 100 General

**101** In addition to the hull strength requirements of the rules for main class, the following shall be given special consideration:

- Additional openings in strength members. The local strength shall be considered in connection with openings and cut-outs in deck, bulkheads, etc.
- Loading conditions. The longitudinal strength shall be satisfactory for all relevant loading conditions and conditions during transfer to new location. In addition to a loading manual the facility is to be equipped with a loading instrument.
- Tank pressure. The local strength shall be considered for increased internal pressure in the tanks caused by the separating process.

##### A 200 Fender arrangement

**201** An efficient fender arrangement, effectively supported by hull strength members, is to be fitted. The fenders are to be able to keep the hulls of the delivery vessel and the reception facility apart at a safe distance, at least 3 metres. The fenders shall efficiently prevent steel to steel contact, in order to avoid risk for sparks.

#### B. Arrangement for Transfer of Oily Water and Oil Residues

##### B 100 Hose and transfer arrangement

**101** The minimum bursting pressure for the hose assembly shall be 20 bar. The maximum allowable working pressure shall be at least 8 bar.

**102** Hose diameters shall be sufficient for the maximum specified transfer rate for the facility in order to avoid excessive pressure drop. Hoses shall be suspended by suitable equipment. Excessive bending of the hoses shall be avoided.

**103** A pressure gauge shall be fitted in the transfer line, before the reception tanks.

**104** It shall be possible to drain or close mechanical loading arms or hoses before disconnection. Coamings of suitable height shall be arranged below manifolds and hose connections in order to minimize spill.

##### B 200 Lighting

**201** Deck lighting shall be arranged. Adequate illumination shall be provided:

- for the transfer area to facilitate control and handling of the equipment,
- for the fire extinguishing equipment, and
- for visual observation of possible oil in the processed water being discharged to the sea (see C104).

#### C. Separating System

##### C 100 General

**101** The separating system shall be designed to reduce the oil content in the water being discharged into the sea to a concentration not exceeding 15 parts per million or any other lower value specified by the builder/owner. The actual design performance will be stated in the Appendix to the Classification Certificate for the facility.

**102** Precautions shall be taken to avoid overpressuring of the process tanks. When the separating system is arranged for pumping oil/water into a tank or series of tanks which by the design of the process piping arrangement will operate in the full condition, an overflow pipe with sectional area at least 25% greater than the area of the filling pipe shall be arranged from the first tank to another tank with surplus capacity.

**103** Means for locating the oil/water interface in the tanks shall be provided.

**104** Visual control of oil content in the processed water being discharged into the sea shall be possible by observing the sea surface at the outlet. Visual inspection of the surface in the last separating tank may

alternatively be accepted.

**105** Discharges of processed water from the separating process shall take place above waterline.

**106** The maximum flow rate through the separating tanks shall be specified in the instruction manuals for the types of oil in question (different gravities, etc.).

**107** Arrangements for handling and storage of sediments and separated oil residues shall comply with applicable requirements for cargo systems on oil tankers as given in Pt.5 Ch.3 of the rules.

## **D. Oil Content Monitoring**

### **D 100 General**

**101** Automatic monitoring of oil content in the processed water shall be arranged. When the specified limit is exceeded, automatic stop of the discharge and an alarm shall be activated.

**102** The oil content meter shall be type tested in accordance with relevant IMO specifications and guidelines (Res. A 393 (X) or revised version of same).

**103** The oil content monitor shall be located outside gas dangerous spaces or zones unless the monitor is “certified safe”.

## **E. Protection against Fire and Explosion**

### **E 100 General**

**101** Precautions shall be taken to prevent hydrocarbon gas from the delivery vessel to enter gas-safe spaces or zones on the facility and vice versa. The location and the periodical closing of doors and air intakes for ventilating systems, etc., shall be considered as well as the provision of “air locks”.

**102** Means for preventing sparks from the funnel of the facility to reach gas dangerous spaces or zones (i.e. spark arrester) shall be provided.

### **E 200 Fire protection, extinguishing and detecting systems**

**201** The fire protection, extinguishing and detection arrangements shall in general comply with the relevant requirements of SOLAS 74 for oil tankers.

### **E 300 Foam system**

**301** A fixed deck foam system in accordance with Reg. 61 of Ch. II-2 of the 1981 Amendments to SOLAS 1974 shall be installed.

### **E 400 Inert gas system**

**401** An inert gas system complying with the rules for the class notation **INERT** shall be arranged for supplying inert gas to all tanks which may contain hydrocarbon gases under normal operating conditions.

**402** The capacity of the inert gas plant shall be at least 25% greater than the maximum discharge rate for processed water.

### **E 500 Electrical installations in gas dangerous spaces and zones**

**501** Electrical installations shall comply with applicable requirements in Pt.5 Ch.3.

### **E 600 Miscellaneous**

**601** Oil residues with flash point above 60°C originating from engine rooms may be transferred to tanks within the facility's engine room, and may be burnt or incinerated within the engine room.

## SECTION 3 OPERATIONAL INSTRUCTIONS AND LOG BOOK

### A. Instruction Materials

#### A 100 Equipment and systems

**101** Instruction manuals for the facility shall be prepared and kept onboard. The manuals are subject to approval by the Society. The manuals shall contain necessary information on:

- operation,
- maintenance,
- testing,
- identification of faults and
- repairs

for the following equipment and systems:

- fire detection and extinguishing equipment,
- inert gas system,
- O<sub>2</sub>-content analyzer,
- oily water and oil residues transfer arrangement,
- oil content monitoring system,
- other equipment onboard necessary for a safe and pollution-free operation,
- the complete separating system, including possible limitations (pumping rates, types of oil, etc.).

#### A 200 Procedures

**201** The instruction manuals shall also contain relevant information about the operational procedures to be applied onboard, such as:

- mooring,
- safety actions (required closing of doors and ventilating intakes, etc.) to be carried out before commencing the transfer between the delivery vessel and the facility,
- general procedures for operation of the separating system and the inert gas system.

**202** The operational procedures shall include the following:

- The O<sub>2</sub>-content of storage and separating tanks which are not completely filled, shall be checked upon discharge, and in any case at least twice a week.
- Two-way communication between the reception facility and the delivery vessel shall be established before the transfer commences.
- Before discharge into the sea is begun, visual inspection of the surface (see Sec.2 C104) shall be carried out and the automatic oil content monitor checked and started.

**203** The maintenance procedures shall include:

- Intervals for checking and maintenance of the exhaust spark arresters.

### B. Safety and Oily Water/Oil Residues Log Book

#### B 100 Log book contents and entries

**Guidance note:**

For the purpose of record keeping and for documentation versus local/national authorities it is recommended that the following guidelines are complied with:

1) General.

The facility should be provided with a safety and oily water/oil residues log book.

The officer in charge of the operations concerned should be responsible for the entries in the log book.

The log book should be kept onboard available for inspection.

The log book entries should be kept onboard for a period of at least three years.

2) Entries in the log book.

The log book should be arranged for entries of the following which should be recorded without delay:

- Before the transfer operations are commenced:

- What will be transferred.

- 
- Stipulated pumping rate.
  - Total volume to be transferred.
  - Safety actions carried out.
  - Rate of transfer.
  - Total volume to be transferred.
  - Weather conditions during transfer.
  - Volume and the exact time when processed water is dis-charged into the sea.
  - Exact time when the oil content in the processed water being discharged into the sea exceeds the specified limit.
  - Internal transfer of oily water and oil residues.
  - Use of the inert gas plant.
  - Result and the exact time of checking O<sub>2</sub>-content in the tanks.
  - Inspection and testing of fire detection and extinguishing equipment.
  - Inspection and maintenance of the inert gas plant.
  - Inspection and maintenance of the exhaust spark arrester.
  - Inspection and maintenance of the transfer arrangement.
  - Inspection and maintenance of the oil content monitor.

---e-n-d---of---G-u-i-d-a-n-c-e---n-o-t-e---