BS ISO 13739:2020

BSI Standards Publication

Petroleum products — Procedures for the transfer of bunkers to vessels

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National foreword

This British Standard is the UK implementation of ISO 13739:2020. It supersedes BS ISO 13739:2010, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/12, Petroleum Measurement and Sampling.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Published by BSI Standards Limited 2020

ISBN 978 0 580 94495 6

ICS 75.180.30; 75.200

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 February 2020.

Amendments/corrigenda issued since publication

Date	Text affected

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INTERNATIONAL STANDARD

ISO 13739

Second edition
2020-02

Petroleum products — Procedures for the transfer of bunkers to vessels

Produits pétroliers — Procédures de transfert des soutes dans les navires

Reference number
ISO 13739:2020(E)

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Contents

Page

Foreword ..... **v**
Introduction ..... **vii**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Responsibilities **3**
5 Documentation **4**
6 Bunker specifications **5**
7 Pre-delivery **5**
7.1 Safety, health and environment 5
7.2 Pre-delivery documentation 5
7.3 Bunkering pre-delivery safety checklist 6
7.4 Bunker requisition 6
7.5 Non-cargo tanks inspection for bunker tanker delivery 6
7.6 Cargo tank measurement/calculation 6
8 During delivery **7**
8.1 General 7
8.2 Bunker tanker delivery requirements 8
9 Sampling **8**
9.1 General 8
9.2 Sampling procedure and equipment 9
10 Quantity measurements **9**
11 Post-delivery **10**
11.1 Post-delivery documentation 10
11.2 Cargo tanks measurement/calculation form 10
11.3 Non-cargo tanks inspection form for bunker tanker delivery 10
11.4 Sample labels 10
11.5 Bunker delivery note 11
11.6 Delivery time log form 11
12 Other requirements **12**
12.1 Stock movement logbook 12
12.2 Plan of bunker tanker and diagram 13
12.3 Blending of products 13
12.4 Letter of protest 13
Annex A (normative) **Health, safety and the environment** **14**
Annex B (informative) **Examples of hand signals for bunkering protocol** **17**
Annex C (informative) **Example of a bunker tanker pre-delivery safety checklist** **18**
Annex D (informative) **Example of a shore pipeline pre-delivery safety checklist** **20**
Annex E (informative) **Example of a road tanker pre-delivery safety checklist** **22**
Annex F (informative) **Example of a bunker requisition form** **24**
Annex G (informative) **Example of a non-cargo tanks inspection form for bunker tanker delivery** **26**
Annex H (informative) **Example of a cargo tanks measurement/calculation form for bunker tanker delivery** **28**
Annex I (informative) **Example of a sample label** **30**

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Annex J (normative) **Manual tank gauging procedure for bunker tanker delivery** **31**
Annex K (normative) **Sampling equipment** **33**
Annex L (normative) **Sampling procedure** **34**
Annex M (informative) **Diagrams of manual valve-setting continuous-drip sampler equipment** **36**
Annex N (informative) **Example of a design of the sample bottle neck and cap** **39**
Annex O (informative) **Example of a stock movement logbook for a bunker tanker** **40**
Annex P (informative) **Example of a letter of protest** **42**
Annex Q (informative) **Example of a delivery time log** **43**
Bibliography **44**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 2, *Measurement of petroleum and related products*.

This second edition cancels and replaces the first edition (ISO 13739:2010), which has been technically revised. The main changes compared with the previous edition are as follows:

— definitions of the verbal forms "shall", "should", "may" and "can" have been included in the Introduction;

— definitions of "list", "list correction", "supplier's representative", "trim" and "trim correction" have been added in Clause 3;

— the following terms have been replaced throughout the document:

  — "SHE" has been replaced by "HSE";

  — "cargo officer" has been replaced by "supplier's representative";

  — "note of protest" has been replaced by "letter of protest";

— 7.6 and Annex Q have been revised to include delivery by shore pipeline and road tankers;

— 11.5 has been updated to include a reference to MARPOL, Annex VI, Regulations 14.1, 14.4 and 18.3[31];

— a requirement to check for any leakages for filling lines has been included in A.5.4;

— units of measurements have been included in Annex H;

— a requirement to drain bunker tanker lines and hoses before opening and closing measurements has been included in J.3;

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— the recording of secondary measurement has been included and the requirement on gauging and zero dip have been revised in J.4;

— a sample of a delivery time log has been included as a new Annex Q.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document was developed for the benefit of the marine industry, including ship owners, operators, charterers, bunker suppliers, bunker tanker operators and surveyors. It sets out a series of procedures to promote the uniform and expeditious transfer of bunkers to vessels meeting the latest health, safety and environmental (HSE) standards.

Local and international regulations, such as the International Maritime Organization (IMO) regulation *International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), Annex VI: Prevention of Air Pollution from Ships*[31], apply to all parties involved in the transfer of bunkers.

In this document, the following verbal forms are used:

— "shall" indicates a requirement;

— "should" indicates a recommendation;

— "may" indicates a permission;

— "can" indicates a possibility or capability.

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WARNING — The use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

1 Scope

This document specifies procedures and requirements for the transfer of bunkers to vessels involving bunker tankers, road tankers and shore pipelines. It is applicable to pre-delivery, delivery and post-delivery checks and documentation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4268, *Petroleum and liquid petroleum products — Temperature measurements — Manual methods*

ISO 8217, *Petroleum products — Fuels (class F) — Specifications of marine fuels*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
bunker
marine fuels comprising distillate fuels and/or residual fuels for a *vessel's* (3.23) consumption

3.2
bunker agreement
contractual terms applying to a *bunker* (3.1) transfer

3.3
bunker delivery note
BDN
official document from the *supplier* (3.19) providing information on the quantity of the *bunker(s)* (3.1) delivered to the *vessel* (3.23) and limited information on the quality

3.4
bunker surveyor
person engaged to survey the *bunker* (3.1) operation

3.5
bunker tanker
bunker barge or tanker used for the supply of *bunkers* (3.1) to the *vessel* (3.23)

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3.6
bunker tanker operator
company that operates the *bunker tanker* (3.5)

3.7
cargo tank
tank containing *bunkers* (3.1)

3.8
chief engineer
person authorized to receive *bunkers* (3.1) and sign the associated documentation

3.9
list
inclination of a *vessel* (3.23) expressed in degrees port or starboard away from the vertical

3.10
list correction
correction to the observed tank measurement or observed quantity when a *vessel* (3.23) is *listing* (3.9), which can be applied provided that liquid is in contact with all bulkheads in the tank

Note 1 to entry: Correction for list may be made by reference to the vessel's list correction tables for each tank or by mathematical calculations.

3.11
nominated tank
tank from which *bunkers* (3.1) are delivered

3.12
non-cargo tank
tank not containing *bunkers* (3.1)

3.13
non-nominated tank
tank not nominated for current delivery

3.14
reference height
vertical distance that is noted on the tank capacity table, between the reference gauge point on the gauge hatch and the datum strike point on the tank floor or the gauge datum plate

3.15
road tanker
truck used for the supply of *bunkers* (3.1) to the *vessel* (3.23)

3.16
sample
bunker (3.1) specimen defined by time, location and method of sampling

3.17
sample seal
tamper-evident device that uniquely identifies the origin of the *sample* (3.16) and prevents the unauthorized loosening or removal of the sample container closure

3.18
shore pipeline
shore connection point for the supply of *bunkers* (3.1) to a *vessel* (3.23)

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3.19
supplier
company whose name appears on the *bunker delivery note* (3.3)

Note 1 to entry: It is possible that the supplier is not the actual seller of the *bunkers* (3.1).

3.20
supplier's representative
individual who is appointed by the *supplier* (3.19) to be responsible for the delivery of *bunkers* (3.1) to the *vessel* (3.23) and for the completion of the documentation

3.21
trim
difference between the fore and aft draught of the *vessel* (3.23)

Note 1 to entry: When the aft draught is greater than the forward draught, the vessel is said to be trimmed by the stern. When the aft draught is less than the forward draught, the vessel is said to be trimmed by the head.

3.22
trim correction
correction applied to the observed gauge or observed quantity when a *vessel* (3.23) is not on an even keel, provided that the liquid is in contact with all bulkheads in the tank

Note 1 to entry: Correction for the *trim* (3.21) may be made by referencing trim tables for each tank or by mathematical calculation.

3.23
vessel
ship receiving *bunkers* (3.1)

4 Responsibilities

4.1 The supplier's representative shall:

a) provide an appropriate bunkering pre-delivery safety checklist depending on the mode of delivery (see Annexes C, D or E);

b) prepare the bunker requisition form (see Annex F) and confirm with the chief engineer the actual vessel requirements as stated on the requisition form;

c) prepare the non-cargo tank inspection form (see Annex G), as applicable;

d) prepare the cargo tanks measurement/calculation form (see Annex H), as applicable;

e) take samples in accordance with Annex L and prepare the sample labels (see Annex I);

f) prepare the BDN;

g) verify, sign and stamp the documents mentioned in a) to f).

4.2 The chief engineer shall:

a) prepare the vessel to receive bunkers;

b) confirm that the actual precautions and actions, as stated in the bunkering pre-delivery safety checklist (see Annexes C, D and E), have been taken by the vessel;

c) inspect and verify the non-cargo tank inspection form (see Annex G), as applicable;

d) inspect the measuring and sampling equipment for good service condition;

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e) witness the opening and closing of tank gauges or flow meter readings and confirm the cargo tanks measurement/calculation form (see Annex H);

f) check the sample labels (see Annex I) upon completion of sampling (see Annex L);

g) check the BDN;

h) verify, sign and stamp the documents mentioned in b), c), e), f) and g).

4.3 The bunker surveyor(s), when engaged, shall:

a) identify themselves to the chief engineer and the master/supplier's representative;

b) conform to this document and, where applicable, any additional procedures set out by the authorities;

c) notify the supplier's representative and the chief engineer of any nonconformity to this document for immediate corrective action. Any nonconformity or irregularity found shall be reported to his/her principal in writing.

4.4 The master of the bunker tanker shall allow the bunker surveyor to board the bunker tanker.

4.5 The supplier's representative, the chief engineer and the bunker surveyor (when engaged) shall work closely together to ensure the procedures are conformed to and carried out safely and diligently at all times during the bunkering operation.

4.6 Bunker suppliers, bunker tanker operators, supplier's representatives, chief engineers, bunker surveyors and any other parties that have an interest in the bunker transaction shall not engage in any unethical practices. Any inducement to participate in such activities should be immediately reported to the appropriate authority and/or party.

5 Documentation

5.1 Documents supporting a transfer of bunkers to vessels involving bunker tankers, road tankers and shore pipelines will vary according to the requirements of local authorities, the law, suppliers and the vessel. Therefore, it is not practical to recommend standardized forms. However, for the accountability of duties, the minimum documentation for a bunker delivery includes the following:

a) for the bunker tanker delivery:

   1) safety checklist (see Annex C);

   2) bunker requisition form (see Annex F);

   3) non-cargo tank inspection form (see Annex G);

   4) cargo tanks measurement/calculation form (see Annex H);

   5) BDN (see 11.5);

   6) delivery time log form (see 11.6 and Annex Q);

   7) sample labels (see Annex I);

b) for the road tanker and/or shore pipeline delivery:

   1) safety checklist (see Annex D and/or Annex E);

   2) bunker requisition form (see Annex F);

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3) bunker quantity measurement record;

4) BDN (see 11.5);

5) delivery time log form (see 11.6 and Annex Q);

6) sample labels (see Annex I).

5.2 Bunker suppliers shall have all these documents available. The documents shall bear the bunker supplier's name and, if applicable, a valid bunkering licence or registration number. Bunker suppliers shall issue documents for a bunker delivery that are consistent with this document and applicable international conventions. Bunker suppliers may have their own formats for these documents.

5.3 The completion of proper documentation is the joint responsibility of the supplier's representative, the chief engineer and the bunker surveyor (when engaged).

6 Bunker specifications

Unless otherwise agreed in the bunker agreement, the bunkers supplied shall be in accordance with ISO 8217.

7 Pre-delivery

7.1 Safety, health and environment

7.1.1 For the safe transfer of bunkers, the health, safety and environment (HSE) requirements given in Annex A shall be observed by all personnel involved in the delivery. Internationally accepted safety standards should also be observed.

7.1.2 The person in charge of the respective area(s) of bunker delivery operation shall remain at all times responsible for the safety of his/her crew, cargo and facilities, and should not allow safety to be prejudiced by the actions of others.

7.1.3 Methods for effective communication, emergency shutdown requirements given in A.3.5 and A.3.6, as well as hand signals shall be prearranged by the supplier's representative, the chief engineer and the bunker surveyor (when engaged) (see Annex B). A copy of the hand signal diagram shall be given to the chief engineer and the bunker surveyor (when engaged) prior to the commencement of the bunkering operation.

7.2 Pre-delivery documentation

The following pre-delivery documents, where applicable, shall be signed and stamped by the supplier's representative and the chief engineer when completed, except when otherwise stated by local regulations. These pre-delivery documents include:

a) bunkering pre-delivery safety checklist;

b) bunker requisition form;

c) non-cargo tanks inspection form for bunker tanker delivery;

d) cargo tanks measurement/calculation form.

These pre-delivery documents are intended to:

— record an agreement on operational details of the transfer;

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— ensure the safe transfer of the product.

7.3 Bunkering pre-delivery safety checklist

7.3.1 A pre-delivery conference shall be conducted between the supplier's representative, the chief engineer and the bunker surveyor (when engaged). Such a conference shall include HSE checks, a review of the pre-delivery safety checklist and the establishment of communication links. A bunker pre-delivery safety checklist (see Annexes C, D and E) shall be completed, signed and stamped by the supplier's representative and chief engineer, with their names clearly printed.

7.3.2 Any amendment to this checklist shall be signed by the supplier's representative and the chief engineer.

7.3.3 The original of the completed checklist shall be retained by the supplier's representative and the duplicate shall be given to the chief engineer.

7.4 Bunker requisition

7.4.1 The supplier's representative shall inform the chief engineer of:

a) nominated quantity and grade(s) to be supplied;

b) delivery sequence and pumping rate;

c) sampling equipment to be used (see Annex K);

d) witnessing of the measurement procedure and sampling procedure (see Annex L);

e) line clearing requirements.

7.4.2 The requirements listed in 7.4.1 are given in the bunker requisition form (see Annex F). Any amendment to this form shall be signed by the supplier's representative and the chief engineer.

7.4.3 The original of the completed form(s) shall be retained by the supplier's representative and the duplicate(s) shall be given to the chief engineer.

7.5 Non-cargo tanks inspection for bunker tanker delivery

7.5.1 The supplier's representative and the chief engineer shall witness the measurement of non-cargo tanks and shall inspect the void spaces (see Annex G). If the chief engineer does not attend the inspection, the supplier's representative shall record this on the form. This shall be endorsed by the chief engineer.

7.5.2 Any amendment to this form shall be signed by the supplier's representative and the chief engineer.

7.5.3 The original of the completed form(s) shall be retained by the supplier's representative and the duplicate(s) shall be given to the chief engineer.

7.6 Cargo tank measurement/calculation

7.6.1 For bunker tanker delivery, the tank measurement/calculation form is used to record tank gauging and/or meter readings, cargo temperature readings and quantity calculations. This form should contain the information given in Annex H and shall be used by the supplier's representative to record

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the calculation of the quantity in the tanks. The relevant API/ASTM/IP/ISO methods for gauging and measurement of petroleum and petroleum products should be used (see the Bibliography).

The supplier's representative shall invite the chief engineer to witness the opening gauge (or meter reading) and the taking of the cargo temperature of all cargo tanks. The chief engineer should witness the (remote) tank gauging of all the cargo tanks before the commencement of the pumping operation. If the chief engineer declines the invitation, the supplier's representative shall record this on the form and this shall be endorsed by the chief engineer.

The manual tank gauging procedure for bunker tanker deliveries shall be as given in Annex J.

If a flowmeter is used, it shall be calibrated, certified and sealed. The flow meter shall also be proven or verified, and this should be done in accordance with applicable industry standards (examples are included in Bibliography). A copy of the certificate shall be available for verification.

7.6.2 For shore pipeline delivery, the supplier's representative shall invite the chief engineer to witness the opening gauge (or meter reading) and the taking of the cargo temperature of all the cargo tanks. The chief engineer should witness the (remote) tank gauging of all the cargo tanks before the commencement of the pumping operation. If the chief engineer declines the invitation, the supplier's representative shall record this on the form. This shall be endorsed by the chief engineer.

7.6.3 For road tanker delivery, the supplier's representative shall invite the chief engineer to witness the opening gauge (or meter reading) or present the weighbridge ticket that shows the quantity that is delivered. Where applicable, the supplier's representative shall invite the chief engineer to witness the breaking of all the seals on the road tanker related to the certificate of delivery. Upon completion of the delivery, the supplier's representative shall invite the chief engineer to perform the tank empty inspection.

7.6.4 All documentation required by 7.6 shall be completed, signed and stamped by the supplier's representative and the chief engineer with their names, date and time of signing clearly printed (see Annex H).

7.6.5 Any amendment to this form shall be signed by the supplier's representative and the chief engineer.

7.6.6 The original of the completed form(s) shall be retained by the supplier's representative and the duplicate(s) shall be given to the chief engineer.

8 During delivery

8.1 General

8.1.1 Once the pre-delivery requirements have been completed and the bunker hose(s) has/have been properly connected, the bunkering operation shall commence after confirmation by the chief engineer.

8.1.2 The supplier's representative and the chief engineer are responsible for the entire bunkering operation, including the sampling process.

8.1.3 Communication between the supplier's representative and the vessel shall be maintained throughout the entire bunkering operation.

8.1.4 The supplier's representative and the chief engineer shall agree on the pumping rate, but in no case shall the agreed rate exceed the safe working pressure.

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