TECHNICAL REPORT

# ISO/TR 13739

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# Petroleum products — Methods for specifying practical procedures for the transfer of bunker fuels to ships

*Produits pétroliers — Méthode pour spécifier les procédures pratiques de transfert dans les navires des combustibles de soute*

## Contents







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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 main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.



ISO/TR 13739, which is a Technical Report of type 2, was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants,* Subcommittee SC 6, *Bulk cargo transfer, accountability, inspection and reconciliation.*



This document is being issued in the Technical Report (type 2) series of publications (according to subclause G.3.2.2 of part 1 of the ISO/IEC Directives,1995) as a "prospective standard for provisional application" in the field of supplying bunkers to vessels because there is an urgent need for guidance on how standards in this field should be used to meet an identified need.

This document is not to be regarded as an "International Standard". It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to the ISO Central Secretariat.

A review of this Technical Report (type 2) will be carried out not later than three years after its publication with the options of: extension for another three years; conversion into an International Standard; or withdrawal.

It is envisaged that once ISO/TR 13739 has been reviewed after wider use, it will eventually be reissued as an International Standard.

Annexes A, B, C, D and E of this Technical Report are for information only.

## Introduction

This Technical Report was developed for the benefit of the ship-bunkering industry comprising shipowners, operators, charterers, bunker suppliers, bunker-tanker operators and surveyors. It sets out a series of guidelines which, if properly followed, will allow for the uniform and expeditious transfer of bunker fuel to ships.

# Petroleum products — Method for specifying practical procedures for the transfer of bunker fuels to ships

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

## 1 Scope

This Technical Report describes a method for specifying practical procedures for the transfer of bunker fuels to ships.

It is important to note that this Technical Report neither governs the legal rights of shipowners/buyers and bunker suppliers nor does it supersede applicable legislation.

## 2 Normative references



The following normative documents contain provisions which, through reference in this text, constitute provisions of this Technical Report. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this Technical Report are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.



ISO 91-1:1992, *Petroleum measurement tables — Part 1: Tables based on reference temperatures of* 15 °C *and* 60 °F*.*

ISO 91-2:1991, *Petroleum measurement tables — Part 2: Tables based on a reference temperature of* 20 °C*.*

ISO 2719:1988, *Petroleum products and lubricants — Determination of flash point — Pensky-Martens closed cup method.*

ISO 3104:1994, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity.*

ISO 3170:1988, *Petroleum liquids — Manual sampling.*

ISO 3171:1988, *Petroleum liquids — Automatic pipeline sampling.*

ISO 3675:1998, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method.*

ISO 4259:1992, *Petroleum products — Determination and application of precision data in relation to methods of test.*

ISO 8216-1:1996, *Petroleum products — Fuels (class F) — Classification — Part 1: Categories of marine fuels.*

ISO 8217:1996, *Petroleum products — Fuels (class F) — Specifications of marine fuels.*

ISO 8754:1992, *Petroleum products — Determination of sulfur content — Energy-dispersive X-ray fluorescence method.*

ISO 12185:1996, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method.*

*Institute of Petroleum — Petroleum Measurement Manual — Part XIV — Statistics for Static and Dynamic Measurement.*

## 3 Terms and definitions

For the purpose of this Technical Report, the following definitions apply.

**3.1**
**bunker(s)**
distillate fuel or residual fuel for a vessel's consumption

**3.2**
**bunker agreement**
contractual terms applying to a bunker transfer

**3.3**
**bunker tanker**
bunker barge or tanker supplying bunkers to the vessel

**3.4**
**cargo officer**
individual from the bunker tanker who is responsible for the delivery and documentation or, in the case of deliveries direct from the shore to the vessel, the person responsible for the delivery and documentation



**3.5**
**sample**
product specimen defined by time, location and method of sampling and retention

**3.6**
**specification**
negotiated, fixed set of product characteristics based on designated methods of test as defined in ISO 8217

**3.7**
**supplier**
persons involved in the provision or the delivery of the bunkers

**3.8**
**surveyor**
person engaged to survey the bunker operation

**3.9**
**vessel**
ship receiving bunker(s)

**3.10**
**vessel officer**
the officer of the vessel, or his representative, who is responsible for receiving bunkers and documentation

**3.11**
**bunker delivery receipt**
**BDR**
proprietary document of the supplier providing details of the quality and quantity of the bunker(s) received by the vessel

See annex A.

# 4 Documentation

Documents supporting a bunker delivery will vary according to local legal and supplier's requirements. Therefore, it is not practical to recommend standardized formats. However, the major requirements for documentary support of a bunker custody transfer are reviewed in this Technical Report. Completion of proper documentation is the joint responsibility of all parties involved.

# 5 Pre-delivery requirements

## 5.1 Essential information

The information listed in 5.2.1 shall be exchanged by the vessel officer and the cargo officer.

## 5.2 Pre-delivery documentation

Except where dictated by local regulations, the following pre-delivery documentation, issued by the supplier, shall be signed by the vessel officer and the cargo officer when completed to their satisfaction. This pre-delivery documentation is intended to record an agreement on operational details of the transfer and ensure safe transfer of the product.

### 5.2.1 Delivery information

The documentation shall include the following minimum information:

a) name of vessel;

b) name of bunker tanker (where applicable);

c) name of supplier;

d) date and time of commencement of delivery;

e) nominated bunker quantity(ies);

f) grade(s) of bunker(s) required (see clause 7);

g) sequence of product transfer;

h) basic characteristics of bunker(s) to be supplied, including viscosity, density, flash point and sulfur (see clause 7);

i) requested maximum pumping rate;

j) agreed pumping rate;

k) rated pumping capacity;

l) location of delivery;

m) request and acceptance to witness delivery measurements.



NOTE An example of a pre-delivery document is given in annex B. A delivery checklist is given in annex C.

### 5.2.2 Responsibilities

**5.2.2.1** The cargo officer shall

a) provide, complete and sign the pre-delivery document;

b) confirm with the vessel officer the actual vessel requirements as stated on the pre-delivery document and shall obtain the vessel officer's signature and vessel's stamp;

c) confirm with the vessel officer the intent, as stated in the pre-delivery document, that the vessl officer or his representative will or will not witness delivery measurements.

**5.2.2.** The vessel officer shall

a) advise the requested pumping rate;

b) advise their intention in respect of witnessing supplier's measurements;

c) sign the pre-delivery document and delivery checklist (see annex C).

#### 5.2.3 Associated information

See clauses 7, 8, 9 and 10 for a detailed discussion of bunker specifications, transfer procedures, determination of quantity and sampling.

## 6 Post-delivery requirements

### 6.1 Essential information

The information listed in 6.2.1.1 to 6.2.1.4 and where applicable, in 6.2.1.5, shall be supplied by the cargo officer.

### 6.2 Bunker delivery receipt (BDR)

A bunker delivery receipt shall be used for each bunker delivery.

NOTE An example of a bunker delivery receipt form is included in annex A. This form may be simplified if deliveries are measured by meter as opposed to tank gauges.

One prime feature relating to the collection of delivery data is the source of density information. This will vary from location to location and, therefore, the format of the BDR will need to be compiled accordingly.



#### 6.2.1 Content of the BDR

The BDR shall include at least the information given in 6.2.1.1 to 6.2.1.4.



##### 6.2.1.1 All deliveries

a) name of supplier;

b) name of vessel being bunkered;

c) method of delivery;

d) name of bunker tanker (if applicable);

e) location of delivery;

f) date and time of commencement of delivery;

g) the ISO fuel grade, designated in accordance with ISO 8216-1, of the product delivered;

h) observed volume delivered;

i) time:

   1) pumping commenced;

   2) pumping completed;

j) sample seal numbers:

   1) vessel;

   2) bunker tanker;

   3) surveyor (if applicable);

   4) others;

k) space shall be provided for remarks; it is not intended that any remarks will alter existing contractual obligations of either party;

l) signatures:

1) vessel officer;

2) cargo officer;

m) stamps:

1) vessel;

2) supplier.

#### 6.2.1.2 Deliveries from bunker tankers or shore tanks

a) times:

1) bunker tanker alongside;

2) bunker tanker departure;

b) record of tank readings at opening and closing gauges;

c) tank number(s);

d) product tank temperature(s).

#### 6.2.1.3 Deliveries via a meter



a) opening and closing meter readings;

b) product temperature(s) taken from pipeline near meter or delivery tank.

#### 6.2.1.4 Quantity data



If the agreement between buyer and seller requires the standard volume and/or apparent mass in air or mass (tonnes) to be reported on the bunker receipt form, the following data shall be included:

a) density at a specified standard temperature (in accordance with ISO 3675 or ISO 12185);

NOTE Often there will not be time, or proper facilities, to physically determine the density from the delivery samples taken. In such circumstances, data derived from shore tanks or another interim source may be used. The bunker agreement should clearly outline the status of the density measurement and the grounds, if any, for subsequent adjustment.

b) location point for determining density;

c) volume correction factor (in accordance with ISO 91-1 or 91-2);

d) volume delivered at a specified standard temperature;

e) the factor for conversion to apparent mass in air or *in vacuo*, as given in table 56 referenced in ISO 1-1:1992.

f) tonnes (apparent mass in air).

The reported data shall represent actual measurements according to agreed procedures. Any predetermined data shall be amended accordingly.

#### 6.2.1.5 Quality data

Where applicable, the following information shall be included in the bunker delivery receipt (BDR):

a) kinematic viscosity (in accordance with ISO 3104) in:

— square millimetres per second ($mm^2/s$) at 40 °C for distillates;

— square millimetres per second ($mm^2/s$) at 50 °C or 100 °C for residuals;