

BS ISO 8216-1:2017



BSI Standards Publication

# Petroleum products — Fuels (class F) classification

Part 1: Categories of marine fuels

**bsi.**

**National foreword**

This British Standard is the UK implementation of ISO 8216-1:2017. It supersedes BS ISO 8216-1:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/2, Liquid Fuels.

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

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**Petroleum products — Fuels (class F)  
classification —**

Part 1:  
**Categories of marine fuels**

*Produits pétroliers — Classification des combustibles (classe F) —  
Partie 1: Catégories des combustibles pour la marine*





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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](http://www.iso.org/directives)).

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For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

The committee responsible for this document is ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 4, *Classifications and specifications*.

This fifth edition cancels and replaces the fourth edition (ISO 8216-1:2010), of which [Clause 4](#) and [Table 1](#) have been technically revised. This edition reflects the following important change to the distillate fuel categories:

- ISO-F-DFA, ISO-F-DFZ and ISO-F-DFB have been added with a maximum fatty acid methyl ester(s) (FAME) content of 7,0 volume %.

A list of all parts in the ISO 8216 series can be found on the ISO website.

## Introduction

The classification in this document was prepared in cooperation with ship owners, ship operators, shipping associations, national standards bodies, classification societies, fuel testing services, engine designers, marine fuel suppliers, fuel additive suppliers and the petroleum industry to meet the requirements for marine fuels supplied on a world-wide basis for consumption on board ships.

The increasing demands of environmental legislation is leading to a transition in the nature of marine fuels supplied from traditional oil products derived from the processing of petroleum crude to the potential inclusion of oil products derived from renewable and/or alternative sources. The classification takes into consideration the diverse nature of these fuels and incorporates a number of categories of distillate and residual fuels, even though not all categories may be available in every supply location.

The subcategories (M) for middle distillate fuels and (H) for heavy distillate fuels of ISO-F-D originally described in ISO 8216-99 have not been used in this document, to avoid misunderstanding with M as used in [Clause 4](#).

Specifications of marine fuel categories are given in ISO 8217.





# Petroleum products — Fuels (class F) classification —

## Part 1: Categories of marine fuels

### 1 Scope

This document defines the detailed classification of marine fuels within class F (petroleum fuels). It is intended to be read in conjunction with ISO 8216-99.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

No terms and definitions are listed in this document.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 4 Explanation of symbols used

The detailed classification of marine fuels into categories of products has been established by defining the main applications and characteristics of the products from two families of fuels given in ISO 8216-99: “D” for distillate fuels and “R” for residual fuels.

In accordance with ISO 8216-99, the products are designated by a symbol consisting of a group of letters which together constitute a code.

This code consists of the following information:

- a) the initials “ISO”;
- b) the letter “F” for the class of fuel;
- c) the category of fuel, consisting of three letters:
  - 1) the family letter, “D” for distillate or “R” for residual,
  - 2) “M” designating the application “Marine”, where for fuels that contain FAME, “M” is replaced by “F”,
  - 3) a letter, e.g. “A”, “B”,..., “Z”, which taken separately has no significance, but has meaning in relation to the particular properties in accordance with ISO 8217;
- d) a number that corresponds to the maximum kinematic viscosity of the residual fuel, in millimetres squared per second ( $\text{mm}^2/\text{s}$ ) at 50 °C.

In this classification system, products, commonly referred to as grades, are designated in a standard format. A product or grade may be designated in the complete form or in abbreviated form.

EXAMPLE Complete form: ISO-F-RMG 380; Abbreviated form: RMG 380.

## 5 Detailed classification

The detailed classification of marine fuels is given in [Table 1](#).

**Table 1 — Classification of marine fuels**

Family Subdivision according to type of fuel	Designation code ISO-F-		Remarks
	Category Subdivision according to application and properties	Maximum kinematic viscosity at 50 °C mm <sup>2</sup> /s	
Distillate	DMX	—	Emergency purposes external to the machinery spaces
	DMA	—	General purpose, shall contain no residuum
	DMZ	—	General purpose, shall contain no residuum
	DMB	—	General purpose, may contain a trace of residuum from the supply chain
	DFA	—	DMA including up to 7 volume % FAME
	DFZ	—	DMZ including up to 7 volume % FAME
	DFB	—	DMB including up to 7 volume % FAME
Residual	RMA	10	General purpose residual fuels
	RMB	30	
	RMD	80	
	RME	180	
	RMG	180	
		380	
		500	
		700	
	RMK	380	
		500	
700			

## Bibliography

- [1] ISO 8216-99, *Petroleum products — Fuels (class F) — Classification — Part 99: General*
- [2] ISO 8217, *Petroleum products — Fuels (class F) — Specifications of marine fuels*





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