

# INTERNATIONAL STANDARD

**ISO**  
**8216-1**

Third edition  
2005-11-01

---

---

## **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*



Reference number  
ISO 8216-1:2005(E)



## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 8216-1 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 4, *Classification and specifications*.

This third edition cancels and replaces the second edition (ISO 8216-1:1996), subclause 3.2 and Table 1 of which have been revised.

ISO 8216 consists of the following parts, under the general title *Petroleum products — Fuels (class F) classification*:

- *Part 1: Categories of marine fuels*
- *Part 2: Categories of gas turbine fuels for industrial and marine applications*
- *Part 3: Family L (Liquefied petroleum gases)*
- *Part 99: General*

## Introduction

This classification was prepared in co-operation with the marine and petroleum industries to meet requirements for marine fuels supplied on a world-wide basis for consumption on board ships. Crude oil supplies, refining methods, ships' machinery and local conditions vary considerably. This had led historically to a large number of categories of residual fuels being available internationally, even though locally or nationally there may be relatively few categories. Consequently it has not been possible to find sufficient common characteristics in order to limit the number of categories. Several of the residual fuel categories are unique in origin to one country or area but are nevertheless included because of their importance in the international marine fuel market.

The subcategories (M) and (H) of ISO–F–D categories, as described in ISO 8216-99, have not been used in this International Standard since the distillate categories described may fall into either or both of these sub categories.

# Petroleum products — Fuels (class F) classification —

## Part 1: Categories of marine fuels

### 1 Scope

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

All fuels for marine applications may be used for many similar but differing purposes in ships. Many marine fuels, being based on crude oil residue, defy specific definition but nevertheless can be categorized within the scope of this part of ISO 8216.

### 2 Normative references

The following referenced documents are indispensable for the application 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 8216-99:2002, *Petroleum products — Fuels (class F) — Classification — Part 99: General*

ISO 8217:—<sup>1</sup>, *Petroleum products — Fuels (class F) — Specifications of marine fuels*

### 3 Explanation of symbols used

**3.1** 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 (D and R) defined in the general classification (D for distillate fuels or mainly distillate fuels and R for residual fuels).

**3.2** 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:

- the initials ISO;
- the letter F (for the class of fuel);

---

1) To be published. (Revision of ISO 8217:1996)

- the category of fuel, consisting of three letters:
  - the first letter of this category is always the family letter (D for distillate or R for residual);
  - the second letter, M, designates the application “Marine”, for which the family of fuels is to be used;
  - the third letter, X, A, B, C, ..., K, taken separately has no significance, but has meaning only in relation to the particular properties in the product specification (ISO 8217);
- a number which corresponds to the maximum kinematic viscosity, in millimetres squared per second at 50 °C, for the category of product within the family of residual fuels.

**3.3** In this classification system, products are designated in a uniform manner.

EXAMPLE A product may be designated in the complete form, e.g. ISO-F-RMA 30, or in abbreviated form, e.g. F-RMA 30.

## 4 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	
Marine distillate fuel	DMX	—	Emergency purposes external to the machinery spaces
	DMA	—	General purpose, shall contain no residuum
	DMB	—	General purpose, may contain a trace of residuum
	DMC	—	General purpose, may contain some residuum
Marine residual fuel	RMA	30	See ISO 8217 for maximum limits of density specified for all categories
	RMB	30	
	RMD	80	
	RME	180	
	RMF	180	
	RMG	380	
	RMH	380	
	RMK	380	
	RMH	700	
	RMK	700	