INTERNATIONAL STANDARD

ISO 8216-1

Fourth edition
2010-06-15

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 8216-1:2010(E)

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Published in Switzerland

Foreword

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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, *Classifications and specifications*.

This fourth edition cancels and replaces the third edition (ISO 8216-1:2005), which has been technically revised.

ISO 8216 consists of part 1, with the title *Petroleum products — Fuels (class F) classification — Part 1: Categories of marine fuels* together with the following parts under the general title *Petroleum products — Fuels (class F) — Classification*:

— *Part 2: Categories of gas turbine fuels for industrial and marine applications*

— *Part 3: Family L (Liquefied petroleum gases)*

— *Part 99: General*

Introduction

The classification in this part of ISO 8216 was prepared in co-operation with ship owners, ship operators, shipping associations, national standards bodies, classification societies, fuel testing services, engine designers, marine fuel suppliers and the petroleum industry to meet the requirements for marine fuels supplied on a world-wide basis for consumption on board ships. Crude oil supplies, refining methods, ships' machinery, environmental legislation and local conditions vary considerably. These factors have led historically to a large number of categories of residual fuels being available internationally, even though locally or nationally there can be relatively few categories available.

The subcategories (M) for middle distillate fuels and (H) for heavy distillate fuels of ISO-F-D described in ISO 8216-99 have not been used in this part of ISO 8216 to avoid misunderstanding with M as used in 3.2 of this part of ISO 8216.

Specifications of marine fuel categories are given in ISO 8217. This fourth edition of this part of ISO 8216 reflects the following important changes to the rationalization of categories of both Distillate and Residual fuels:

a) Changes to distillate fuel categories include the following.

— ISO-F-DMZ has been added with a minimum viscosity of 3,000 mm^2/s at 40 °C, but is otherwise identical in its characteristics to the DMA.

— ISO-F-DMC of ISO 8217:2010, which is a blend of residuum and distillate, has been reclassified as a residual fuel. It has been given the new designation ISO-F-RMA 10, with a maximum viscosity of 10,00 mm^2/s at 50 °C.

b) Changes to residual fuel categories include the following.

— The previous ISO-F-RMA 30 and ISO-F-RMB 30 have been consolidated into a new ISO-F-RMB 30 principally reflecting the characteristics of the previous ISO-F-RMA 30.

— The previous ISO-F-RMF 180 has been deleted.

— ISO-F-RMG has been expanded to include ISO-F-RMG 180, ISO-F-RMG 500 and ISO-F-RMG 700.

— The previous ISO-F-RMH 380 and ISO-F-RMH 700 have been deleted.

— ISO-F-RMK has been expanded to include ISO-F-RMK 500.

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.

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 8217:2010, *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 given in ISO 8216-99: “D” for distillate fuels and “R” for residual fuels.

3.2 In accordance with ISO 8216-99:2002, the products are designated by a symbol consisting of a group of letters which together constitute a code.

This code consists of the following:

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”, for which the family of fuels is being used,

   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 the product specification, ISO 8217:2010;

d) a number that corresponds to the maximum kinematic viscosity of the residual fuel, in square millimetres per second (mm^2/s) at 50 °C.

3.3 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.

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^2/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
Residual	RMA	10	
	RMB	30	
	RMD	80	
	RME	180	
	RMG	180	
	RMG	380	General purpose residual fuels
	RMG	500	
	RMG	700	
	RMK	380	
	RMK	500	
	RMK	700	

ICS 75.160.20

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