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Foreword

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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).

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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.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 7, *Inland navigation vessels*.

This third edition cancels and replaces the second edition (ISO 8385:1999), which has been technically revised.

The main changes compared to the previous edition are as follows:

— two new categories of criteria: 3 “Main performance parameters” and 5 “Energy source” have been added;

— Liquefied Natural Gas (LNG) has been added to category of criteria 5 “Energy source”;

— category of criteria 9 “Method of soil extraction” has been revised and new items have been added;

— category of criteria 13 “Disposal/transport of dredged material” has been revised;

— the original classification table has been separated into three tables respectively on the basis of the engineering condition, dredger parameters and operating method;

— the order of the classification has been adjusted.

Ships and marine technology — Dredgers — Classification

1 Scope

This document provides a single classification for all types of dredgers designed for loosening, raising, transporting and disposing of dredged material.

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 8384, *Ships and marine technology — Dredgers — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8384 apply.

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 Classification

Dredgers are classified on the basis of the criteria: engineering condition, dredger parameters and operating method as specified in Tables 1, 2 and 3.

Table 1 — Classification on basis of engineering condition

Category of engineering condition	Engineering condition	
1 Area of operation	**1.1** Inland waterways, inland ports and sites for soil extraction	
	1.2 Seagoing	**1.2.1** Harbours and coastal zone
		1.2.2 Offshore
		1.2.3 Ocean-going
	1.3 Special environments	**1.3.1** Tropical
		1.3.2 Arctic
		1.3.3 Other special environments
2 Soil characteristics	**2.1** Silts	
	2.2 Peats and organic soils	
	2.3 Sands	
	2.4 Gravels	
	2.5 Clays	
	2.6 Boulders and cobbles	
	2.7 Rocks	
	2.8 Mixed soils	
	2.9 Fine sediments	

Table 2 — Classification on basis of dredger parameters

Category of dredger parameters	Dredger parameters	
3 Main performance parameters	**3.1** Trailing suction hopper dredger	**3.1.1** Hopper capacity
		3.1.2 Dredging depth
		3.1.3 Total installed power
	3.2 Cutter suction dredger	**3.2.1** Cutter head power
		3.2.2 Dimension of discharge pipeline
		3.2.3 Dredging depth
		3.2.4 Total installed power
	3.3 Grab dredger	**3.3.1** Grab capacity
		3.3.2 Dredging depth
		3.3.3 Total installed power
	3.4 Dipper/Backhoe dredger	**3.4.1** Backhoe capacity
		3.4.2 Dredging depth
		3.4.3 Total installed power
	3.5 Bucket chain dredger	**3.5.1** Bucket capacity
		3.5.2 Dredging depth
		3.5.3 Total installed power
4 Power plant	**4.1** Diesel	
	4.2 Electric	
	4.3 Diesel-electric	
	4.4 Diesel-hydraulic	
	4.5 Electric hydraulic	
	4.6 Combinations	
5 Energy source	**5.1** Fuels	**5.1.1** Oil fuel
		5.1.2 LNG (Liquefied Natural Gas) and CNG (Compressed Natural Gas)
		5.1.3 Other burnable fuels
	5.2 Clean energy	**5.2.1** Electric, (onboard, outboard or onshore)
		5.2.2 Solar
		5.2.3 Wind
	5.3 Nuclear	
6 Mobility	**6.1** Non-propelled	
	6.2 Self-propelled	
	6.3 With limited propulsive capabilities	
7 Transportability	**7.1** Non-dismountable	
	7.2 Partly dismountable	
	7.3 Dismountable	
8 Crew quarters	**8.1** Without crew accommodation	
	8.2 With day accommodation	
	8.3 With sleeping accommodation	

Table 3 — Classification on basis of operating method

Category of operating method	Operating method		
9 Method of soil extraction	**9.1** Single bucket dredgers		**9.1.1** Dipper dredgers
			9.1.2 Backhoe dredgers
	9.2 Grab dredgers		**9.2.1** Single grab dredgers
			9.2.2 Multi-grab dredgers
			9.2.3 Dragline dredgers
			9.2.4 Grab hopper dredgers
	9.3 Bucket dredgers		
	9.4 Rockbreakers		**9.4.1** With freely falling chisel
			9.4.2 With powered chisel
			9.4.3 With drilling for blasting
	9.5 Bed levellers		
	9.6 Agitation dredgers		
	9.7 Suction dredgers	**9.7.1** Type of dredge pump	**9.7.1.1** Centrifugal pump
			9.7.1.2 Ejector jet pump
			9.7.1.3 Air lift pump
			9.7.1.4 Pneumatic suction pump
			9.7.1.5 Axial flow pump
			9.7.1.6 Combinations and special
		9.7.2 Method of loosening soil	**9.7.2.1** Cutter head
			9.7.2.2 Bucket wheel/cutting wheel
			9.7.2.3 Hydraulic agitator
			9.7.2.4 Combinations and special
		9.7.3 Type of suction head	**9.7.3.1** Forward suction head
			9.7.3.2 Draghead
			9.7.3.3 Combinations and special
10 Location of dredging apparatus	**10.1** At one side		
	10.2 At both sides		
	10.3 In a well		**10.3.1** Fore
			10.3.2 Aft
	10.4 On deck		**10.4.1** Fore
			10.4.2 Aft
11 Operating movements	**11.1** Longitudinal		**11.1.1** Ahead
			11.1.2 Astern
	11.2 Traversing or lateral/arc		
	11.3 Combinations and special		
12 Equipment for movement and propulsion	**12.1** Propellers or other propulsive devices		
	12.2 Anchors		
	12.3 Spuds		
	12.4 Combinations and special		

Table 3 *(continued)*

Category of operating method	Operating method	
13 Disposal/transport of dredged material	**13.1** Direct delivery	
	13.2 Hydraulic delivery	**13.2.1** Land pipeline
		13.2.2 Floating pipeline
		13.2.3 Submersible pipeline
	13.3 Hopper dredgers	**13.3.1** Bottom doors or valves
		13.3.2 Split hull
		13.3.3 Other means of disposal
		13.3.4 Shore discharging
		13.3.5 Rainbowing
	13.4 Vessel	
	13.5 Chute	
	13.6 Belt conveyor	
	13.7 Combinations	

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