
Ships and marine technology — Dredgers — Vocabulary

Navires et technologie maritime — Dragues — Vocabulaire

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Terms relating to general concepts applicable to dredgers.....	1
3.2 Terms relating to basic parameters of dredgers.....	2
3.3 Terms relating to types of dredgers.....	4
3.3.1 Types of dredgers depending on methods of soil extraction or treatment.....	4
3.3.2 Types of dredgers defined by power plant.....	6
3.3.3 Types of dredgers defined by their propulsion or manoeuvrability.....	7
3.3.4 Types of dredgers defined by way of assembly.....	7
3.4 Terms relating to methods and equipment for removal of soil.....	7
3.5 Terms relating to methods and equipment for operating movements.....	10
3.6 Terms relating to dredging pump unit and to soil-loosening equipment.....	11
3.7 Terms relating to controls and to monitoring and measuring instruments.....	14
3.8 Terms relating to special types of dredgers.....	16
3.8.1 Terms relating to bucket chain dredger and to bucket assembly.....	16
3.8.2 Terms relating to trailing suction hopper dredger and its dredging equipment..	18
3.8.3 Terms relating to cutter suction dredger and its dredging equipment.....	19
3.8.4 Terms relating to grab/dipper/backhoe dredger and their dredging equipment.....	21

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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of 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 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 fourth edition cancels and replaces the third edition (ISO 8384:2018), of which it constitutes a minor revision.

The changes compared to the previous edition are as follows:

- a note for "seabed" was added,
- references were corrected,
- delivery pipeline was clarified,
- wording was improved for entries such as, e.g. [3.4.34](#), [3.7.5](#), [3.7.12](#), [3.7.29](#), and
- a note was added for swing winches.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Ships and marine technology — Dredgers — Vocabulary

1 Scope

This document specifies terms and definitions relating to dredgers, with the aim of giving clear enough definitions for every term for them to be understood by all specialists.

This document is applicable only to equipment which is used for the construction and maintenance of navigable waterways and the extraction of soil.

The terms specified in this document are intended to be used in documentation of all kinds. Certain standardized terms are also given with their abridged version; these can be used in cases where no possibility of misinterpretation can arise.

A combination of terms is allowed in application.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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 <https://standards.iteh.ai/catalog/standards/sist/157d7818-6e75-45dc-a869-742620242134/iso-8384-2019> or <https://www.iso.org/obp>

3.1 Terms relating to general concepts applicable to dredgers

3.1.1

dredging

loosening, collecting, transporting and disposing of *dredged mixture* (3.6.1)

3.1.2

hopper loading

process of the *dredged mixture* (3.6.1) filled into the *hopper hold* (3.4.18) of the *hopper barge* (3.4.13) or *hopper dredger* (3.3.1.1.1)

3.1.3

soil

seabed material, which may contain sludge, sand, rocks and other material

Note 1 to entry: In this term, “seabed” means the bottom of a river, channel, lake or ocean.

3.1.4

dredging site

geographical site where excavation or extraction of the *soil* (3.1.3) is carried out

3.1.5

dredger

vessel or piece of equipment intended for *dredging* (3.1.1)

3.1.6

dredging unit

dredger (3.1.5) and its service vessels, which is used for extraction, transportation and disposal of *soil* (3.1.3) for *dredging* (3.1.1)

3.1.7

dredging fleet

composition of related *dredging units* (3.1.6) for the accomplishment of *dredging* (3.1.1)

3.1.8

dredging equipment

devices, installation and systems of a *dredger* (3.1.5) for the accomplishment of *dredging* (3.1.1)

3.1.9

dredging apparatus

equipment, installation or tool for excavating the *soil* (3.1.3), separating it from the bottom of water and raising it

3.1.10

gantry

rigid steel structure used to suspend or support the *dredging equipment* (3.1.8)

3.1.11

soil discharge installation

installation for discharging the *soil* (3.1.3) from the *dredger* (3.1.5)

3.1.12

spud installation

equipment comprising *spuds* (3.5.4) and mechanisms for hoisting, lowering, locating and fixing the *spuds* (3.5.4)

3.1.13

swell compensator

device ensuring a *dredger's* (3.1.5) operation to cope with waves and uneven seabed at the *dredging site* (3.1.4)

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3.2 Terms relating to basic parameters of dredgers

3.2.1

total installed power

sum of the power of all the *prime movers* (3.3.2.1) installed in a *dredger* (3.1.5)

3.2.2

dredging output

volume/mass of *soil* (3.1.3) extracted by a *dredger* (3.1.5) per unit of time or per vessel

3.2.3

dredging production

accumulated quantity of the *soil* (3.1.3) dredged by a *dredger* (3.1.5) in a period of time

3.2.4

sailing speed

dredger (3.1.5) speed over ground at full load draught during free sailing

3.2.5

dredging speed

dredger (3.1.5) speed over ground during *dredging* (3.1.1)

3.2.6**dredging depth**

vertical distance from the water surface to the lower edge of the *dredging equipment* (3.1.8) of the *dredger* (3.1.5) which is operating

3.2.7**maximum dredging depth**

maximum depth at which a *dredger* (3.1.5) can operate

3.2.8**minimum dredging depth**

minimum depth at which a *dredger* (3.1.5) can operate

3.2.9**discharge distance**

straight line distance from the outlet of the *dredge pump* (3.6.2) to the outlet of the *delivery pipeline* (3.4.4)

3.2.10**hopper hold capacity**

maximum volume of the *hopper hold* (3.4.18) of a *dredger* (3.1.5) with a *hopper hold* (3.4.18) or a *hopper barge* (3.4.13)

3.2.11**effective hopper hold capacity**

volume of dredged material that can be placed and retained in the *hopper holds* (3.4.18) of a *hopper barge* (3.4.13) or a *hopper dredger* (3.3.1.1.1)

3.2.12**hopper content density**

mass per unit of volume of the *dredged mixture* (3.6.1) dredged and filled in the *hopper hold* (3.4.18)

3.2.13**hopper solid content**

volume of dry soil (3.1.3) loaded in the *hopper hold* (3.4.18) at the full load draught of the *hopper dredger* (3.3.1.1.1) or *hopper barge* (3.4.13)

3.2.14**hopper load**

mass of the *dredged mixture* (3.6.1) loaded in the *hopper hold* (3.4.18) at full load draught of a *hopper dredger* (3.3.1.1.1) or *hopper barge* (3.4.13)

3.2.15**hopper loading time**

time needed for the filling of the *dredged mixture* (3.6.1) into the *hopper hold* (3.4.18) up to full load draught of a *dredger* (3.1.5)

3.2.16**transportation distance**

distance from *dredging site* (3.1.4) to disposal area, when the dredged material is transported by a *hopper dredger* (3.3.1.1.1) or *hopper barge* (3.4.13)

3.3 Terms relating to types of dredgers

3.3.1 Types of dredgers depending on methods of soil extraction or treatment

3.3.1.1 Hydraulic suction dredgers

3.3.1.1.1

hopper dredger

self-propelled dredger (3.3.3.1) with its own integrated *hopper hold* (3.4.18)

Note 1 to entry: Hopper dredger can be trailing suction hopper dredger or grab hopper dredger.

3.3.1.1.2

plain suction dredger

dredger (3.1.5) using *suction mouth* (3.4.30) only and *dredge pump(s)* (3.6.2) for extracting and discharging the *dredged mixture* (3.6.1) through pipelines

3.3.1.1.3

cutter suction dredger

dredger (3.1.5) which uses *cutter head* (3.8.3.14) and *dredge pump(s)* (3.6.2) for excavating, extracting different kinds of *soil* (3.1.3) and discharging the *dredged mixture* (3.6.1) through pipelines

Note 1 to entry: Cutter suction dredgers can be non-propelled or self-propelled.

3.3.1.1.4

bucket/cutting wheel suction dredger

cutter suction dredger (3.3.1.1.3) that excavates *soil* (3.1.3) with a *bucket wheel* (3.8.3.16) or *cutting wheel* (3.8.3.17)

3.3.1.1.5

trailing suction hopper dredger

self-propelled dredger (3.3.3.1), which trails the *draghead* (3.8.2.4) on the ground to excavate, extract and fill the *soil* (3.1.3) into its own integrated hopper with *dredge pump(s)* (3.6.2)

3.3.1.1.6

split trailing suction hopper dredger

trailing suction hopper dredger (3.3.1.1.5) with a hull that can be opened along the longitudinal axis of the vessel to dump the *dredged mixture* (3.6.1) from the *hopper hold* (3.4.18)

3.3.1.1.7

trailing suction side-casting dredger

trailing suction hopper dredger (3.3.1.1.5) equipped with the *side casting installation* (3.4.36) for pumping the *dredged mixture* (3.6.1) over board directly

3.3.1.1.8

dustpan suction dredger

kind of *plain suction dredger* (3.3.1.1.2) which is equipped with a prolate box type *suction mouth* (3.4.30) with *jet water* (3.6.26) nozzle fitted in the front of the *suction mouth* (3.4.30)

3.3.1.1.9

deep suction dredger

dredger (3.1.5) having a long suction pipe equipped with a submersible *dredge pump* (3.6.4)

Note 1 to entry: Normally the *dredging depth* (3.2.6) of a deep suction dredger exceeds 30 m.

3.3.1.1.10

barge unloading suction dredger

kind of *plain suction dredger* (3.3.1.1.2) which extracts and pumps the *dredged mixture* (3.6.1) out of the *hopper hold* (3.4.18) to the shore with *dredge pump* (3.6.2) and suction pipe which is able to stick out and lower into the *hopper hold* (3.4.18) of the hopper barge

3.3.1.1.11**auger suction dredger**

dustpan suction dredger (3.3.1.1.8) with a rotary auger installed in the *dustpan* (3.6.8), the movement of which is a combination of moving ahead automatically plus swinging from right to left

3.3.1.1.12**jet ejector dredger**

dredger (3.1.5) using pressure water for loosening, extracting and transporting the *dredged mixture* (3.6.1)

3.3.1.1.13**air-lift dredger**

dredger (3.1.5) using *air-lift pump* (3.6.23) unit for collecting and transporting the *dredged mixture* (3.6.1)

3.3.1.2 Mechanical excavating dredgers**3.3.1.2.1****bucket chain dredger**

dredger (3.1.5) equipped with serial buckets forming a bucket chain moving along the *bucket ladder* (3.8.1.16), excavating the *soil* (3.1.3) underwater and loading into the alongside *hopper barge* (3.4.13) through a *chute* (3.8.1.17)

3.3.1.2.2**dipper dredger**

dredger (3.1.5) with a single *bucket* (3.8.1.3) on an arm which moves away from the *dredger* (3.1.5) while the *bucket* (3.8.1.3) excavates the *soil* (3.1.3)

3.3.1.2.3**backhoe dredger**

dredger (3.1.5) with a single *bucket* (3.8.1.3) on an arm which moves towards the *dredger* (3.1.5) while the *bucket* (3.8.1.3) excavates the *soil* (3.1.3)

3.3.1.2.4**grab dredger**

dredger (3.1.5) which excavates the *soil* (3.1.3) with one or more *grabs* (3.8.4.13)

3.3.1.2.5**dragline dredger**

dredger (3.1.5) which excavates the *soil* (3.1.3) with a single bucket moved by dragline

3.3.1.2.6**rock-breaker**

dredger (3.1.5) or other unit fitted with equipment for crushing and fragmenting rock under the water as a pre-treatment for *dredging* (3.1.1)

3.3.1.2.7**rock-breaker with freely falling chisel**

rock-breaker (3.3.1.2.6) with a chisel which falls under gravity only

3.3.1.2.8**rock-breaker with powered chisel**

rock-breaker (3.3.1.2.6) with a chisel activated by a power source

3.3.1.2.9**rock-drilling and blasting vessel**

vessel for drilling rocks under water and placing explosives into the drilling hole to smash the rocks into fragments

3.3.1.2.10

agitation dredger

vessel used for *dredging* (3.1.1) by loosening the *soil* (3.1.3) which is then washed away by the current in the basin so that loosened, suspended material is taken away by the current and settled in deeper areas

3.3.1.2.11

bed leveller

vessel used to level the seabed at the *dredging site* (3.1.4)

3.3.1.2.12

self-unloading bucket chain dredger

dredger (3.1.5) which uses the chained buckets to excavate the *soil* (3.1.3) underwater and dilutes the dredged material into *dredged mixture* (3.6.1) and pumps it out through the *discharge pipeline* (3.4.2).

Note 1 to entry: A self-unloading bucket chain dredger is an obsolete type of dredger.

3.3.2 Types of dredgers defined by power plant

3.3.2.1

prime mover

engine that produces the power to *dredging equipment* (3.1.8) for *dredging* (3.1.1) and discharging the *dredged mixture* (3.6.1), and to other consumers

3.3.2.2

diesel dredger

dredger (3.1.5) using diesel engine(s) as a *prime mover* (3.3.2.1)

3.3.2.3

dual-fuel dredger

dredger (3.1.5) using a dual-fuel engine as a *prime mover* (3.3.2.1)

3.3.2.4

diesel-electric dredger

dredger (3.1.5) using diesel engine(s) as *prime mover(s)* (3.3.2.1) driving electric generators to supply all the electric motors driving *dredging equipment* (3.1.8) and propulsion machinery where applicable

3.3.2.5

diesel-hydraulic dredger

dredger (3.1.5) using diesel engine(s) as *prime mover(s)* (3.3.2.1) to drive hydraulic pumps supplying all hydraulic motors which driving *dredging equipment* (3.1.8) and propulsion machinery where applicable

3.3.2.6

steam dredger

dredger (3.1.5) using a steam turbine or steam reciprocating engine as a *prime mover* (3.3.2.1)

Note 1 to entry: Steam dredgers are obsolete types of dredgers.

3.3.2.7

gas-turbine dredger

dredger (3.1.5) using a gas turbine as a *prime mover* (3.3.2.1)

3.3.2.8

electric dredger

dredger (3.1.5) using an electric power plant as a *prime mover* (3.3.2.1) or fed from external electric supply

3.3.2.9

electric-hydraulic dredger

dredger (3.1.5) using external electric supply to power electric motors which drive hydraulic pumps for hydraulic power transmission of the *dredging equipment* (3.1.8)

3.3.3 Types of dredgers defined by their propulsion or manoeuvrability

3.3.3.1

self-propelled dredger

dredger (3.1.5) having propelling devices to allow independent movement

3.3.3.2

non-self-propelled dredger

dredger (3.1.5) without propelling devices

3.3.3.3

self-maneuvrable dredger

non-self-propelled dredger (3.3.3.2) equipped with propulsor(s) for positioning at the *dredging site* (3.1.4)

3.3.4 Types of dredgers defined by way of assembly

3.3.4.1

non-dismountable dredger

dredger (3.1.5) readily assembled on the shipyard for full service use

3.3.4.2

partly dismountable dredger

dredger (3.1.5) partly assembled on the shipyard for final assembly at the place of operation

3.3.4.3

dismountable dredger

dredger (3.1.5) consisting of a number of pontoons with engine and *dredging equipment* (3.1.8) that can be assembled with bolts and hooks to form a complete dredger

3.4 Terms relating to methods and equipment for removal of soil

3.4.1

suction pipeline

pipeline through which the *dredged mixture* (3.6.1) passes from the *suction head* (3.6.7) to the inlet of *dredge pump* (3.6.2)

3.4.2

discharge pipeline

pipeline through which the *dredged mixture* (3.6.1) is transported from the outlet of the *dredge pump* (3.6.2) to the outlet of the *delivery pipeline* (3.4.4)

3.4.3

discharge pipeline on board

part of the *discharge pipeline* (3.4.2) located on the discharge side of the *dredge pump* (3.6.2), inside or on the hull of the *dredger* (3.1.5)

3.4.4

delivery pipeline

pipeline through which the *dredged mixture* (3.6.1) is transported from the aft end of the *dredger* (3.1.5) to the outlet of the *pipeline*

3.4.5

floating delivery pipeline

part of the *delivery pipeline* (3.4.4) which crosses the water and is supported either by its own inbuilt buoyancy or by use of *pipeline pontoons* (3.4.8) or *pipeline floaters* (3.4.9)

3.4.6

self-floating pipeline

pipeline covered by floatable material and protecting layer, which can float in the water without any other floater