

---

---

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

*Navires et technologie maritime — Dragues — Vocabulaire*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 8384:2018](https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018)

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018>



**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

ISO 8384:2018

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword .....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
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 dredger .....	3
3.3.1 Types of dredgers depending on methods of soil extraction or treatment .....	3
3.3.2 Types of dredgers defined by power plant .....	6
3.3.3 Types of dredgers defined by their propulsion or manoeuvrability .....	6
3.3.4 Types of dredger 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 movement .....	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 .....	13
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

iteh STANDARD PREVIEW

(standards.iteh.ai)

ISO 8384:2018

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018>

## 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)).

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

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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). (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 7, *Inland navigation vessels*. ISO 8384:2018  
<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-c73152a37d10/iso-8384-2018>

This third edition cancels and replaces the second edition (ISO 8384:2000), which has been technically revised.

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

- terms on trailing suction hopper dredger, cutter suction dredger and bucket type dredgers have been added;
- terms on bucket chain dredger have been added under “Terms relating to bucket chain dredger and to bucket assembly”;
- terms for supervisory and control system have been added;
- the structure of the document has been revised in accordance with the ISO/IEC Directives, Part 2:2018.

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](http://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 and rocks.

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://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**

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

#### 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 sea/riverbed at the *dredging site* (3.1.4)

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

ISO 8384:2018

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a75152ca5ad7/iso-8384-2018>

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 dredger****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 pumps* (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 pumps* (3.6.2) for excavating, extracting and discharging the *dredged mixture* (3.6.1) of *soil* (3.1.3) 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/cutting wheel

### 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 a *dredge pump* (3.6.2)

### 3.3.1.1.6

#### **split trailing suction hopper dredger**

hull of a *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)

iTeh STANDARD PREVIEW

(standards.iteh.ai)

ISO 8384:2018

### 3.3.1.1.9

#### **deep suction dredger**

*dredger* (3.1.5) having a long suction pipe equipped with a submersible *dredge pump* (3.6.2)

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018>

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

### 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 unit for collecting and transporting the *dredged mixture* (3.6.1)



### 3.3.1.2 Mechanical excavating dredger

#### 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, 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 river/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 users

#### 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)

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

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

ISO 8384:2018

#### 3.3.2.7

##### **gas-turbine dredger**

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

<https://standards.iteh.ai/catalog/standards/sist/fb67dedd-d026-40d1-92d1-a73152ca33ad/iso-8384-2018>

#### 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 dredger 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 *discharge pipeline* (3.4.2)

#### 3.4.3

##### **discharge pipeline on board**

part of the *discharge pipe* (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 *delivery pipeline* (3.4.4)

#### 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

#### 3.4.7

##### **submersible pipeline**

part of the *delivery pipeline* (3.4.4) which is laid down under water

#### 3.4.8

##### **pipeline pontoon**

small square barge for supporting a *floating delivery pipeline* (3.4.5)

#### 3.4.9

##### **pipeline floater**

equipment for supporting a *floating delivery pipeline* (3.4.5)

Note 1 to entry: A typical design of a pipeline floater is a construction of two round barrels connected with steel members.