BRITISH STANDARD

# Building and civil engineering – Vocabulary

## Part 5: Civil engineering – Water engineering, environmental engineering and pipelines

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## Publishing and copyright information



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# Contents





**Summary of pages**

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 74, an inside back cover and a back cover.

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# Foreword

## Publishing information

This part of BS 6100 is published by BSI and came into effect on 1 January 2009. It was prepared by Technical Committee B/500, *Basic data*. A list of organizations represented on this committee can be obtained on request to its secretary.

## Supersession

This part of BS 6100 supersedes BS 6100-2.5:1991, BS 6100-2.6:1991 and BS 6100-2.7:1992, which are withdrawn.

## Relationship with other publications

BS 6100 consists of the following parts.

- *Part 0: Introduction and index.*
- *Part 1: General.*
- *Part 2: Spaces, building types, environment and physical planning.*
- *Part 3: Civil engineering – General.*
- *Part 4: Civil engineering – Transport.*
- *Part 5: Civil engineering – Water engineering, environmental engineering and pipelines.*
- *Part 6: Construction parts.*
- *Part 7: Services.*
- *Part 8: Work with timber and wood-based panels.*
- *Part 9: Work with concrete and plaster.*
- *Part 10: Contract terms.*
- *Part 11: Performance characteristics, measurement and joints.*
- *Part 12: Plant, equipment and persons.*

## Information about this document

BS 6100 has been completely restructured and compiled on different principles than previously. Consequently, this part of BS 6100 represents a full revision of the standard.

A general introduction to and explanation of the BS 6100 vocabulary is given in BS 6100-0, which provides an alphabetical index of all the terms in all parts of BS 6100. It is intended that individual parts of BS 6100 are used in conjunction with BS 6100-0 because they do not contain indexes themselves.

BS 6100-1 reproduces verbatim ISO 6707-1 and provides a vocabulary of general terms for the building and civil engineering industry. It is essential that individual parts of BS 6100 are read in conjunction with BS 6100-1.

BS 6100 does not repeat (or provide alternatives for) terms defined in other standards or in other parts of BS 6100. However, it does refer to where definitions can be found and includes a bibliography of all referenced standards.

## Presentational conventions

Details of the structure, layout and presentational conventions used in this part of BS 6100 are given in Clause **2**.

## Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

# 1 Scope

This part of BS 6100 defines terms for civil engineering that relate to:

a) water engineering;

b) inland waters, coastal and maritime engineering;

c) public health and environmental engineering;

d) pipelines and ducts.

# 2 Vocabulary structure

This part of BS 6100 does not contain its own index. Instead, a comprehensive index of terms is given in BS 6100-0. As a result, it is intended that this part of BS 6100 is used in conjunction with BS 6100-0.

The layout of this vocabulary is designed in accordance with ISO 10241 with terms arranged in a classified order and numbered in accordance with ISO 2145.

Each term has an individual number consisting of seven digits in two parts, the first of two digits, the second of five. Each number tells the following information about the term.

a) The first two digits represent which part of BS 6100 the term belongs to.

b) The third digit represents which group of terms it belongs to within the part.

c) The fourth digit represents which subgroup of terms it belongs to within the group, as follows

   1) Works

   2) Parts

   3) Materials

   4) Activities

   5) Processes

   6) Plant, equipment and documentation

   7) Properties

   8) Spaces

   9) Miscellaneous.

d) The fifth to seventh digits determine the location of the term within the subgroup.

Bold words within a definition indicate terms that are defined elsewhere in this part of BS 6100, other parts of BS 6100 or other standards. Reference to where the term is defined is given in parenthesis after the bold word.

*NOTE 1 References to terms defined in BS 6100-1 are shown giving only the part number, e.g. (01); references to terms defined in all other parts of BS 6100 are shown using their full reference number, e.g. (07 59005).*

*NOTE 2 Where more than one definition source could be referred to, the reference containing the definition of most general applicability is given.*

Alternative terms are given in medium type below preferred terms which are given in bold type. All alternative terms have the status of being deprecated. Abbreviations are given in bold type below the terms to which they relate.

In the vocabulary, terms of more than one word are written in their natural word order, e.g. pedestal elbow, and the word order is not inverted, e.g. elbow, pedestal. However, inverted forms of a term are included in the index in BS 6100-0.

Terms are only given in the singular form, even when the plural form is more common (unless the term is only found in the plural form).

# 3 Water engineering (05 1xxxx)

## 3.1 Works (05 11xxx)

**05 11001 impounding reservoir**
**reservoir** (01) that collects **surface water** (01) from an open area of **land** (01)

*NOTE Usually in the upper **reaches** (BS EN ISO 772) of a **watercourse** (01).*

**05 11002 pumped storage reservoir**
high **level** (01) **reservoir** (01) in a **pumped storage** (05 11034) system

**05 11003 millpond**
**impounding reservoir** (05 11001) that serves a watermill

**05 11004 embankment dam**
**dam** (01) formed as an **embankment** (01)

**05 11005 earth dam**
earth fill dam
**embankment dam** (05 11004) constructed with **soil** (01)

**05 11006 gravity dam**
**dam** (01) that relies on its **weight** (11 27002) for stability

**05 11007 arch dam**
**dam** (01) arched horizontally to resist the thrust of the water, the **force** (01) being transmitted to **abutments** (01)

**05 11008 gravity arch dam**
**dam** (01) arched horizontally to resist the thrust of the water, but also relying on its own **weight** (11 27002) for stability

**05 11009 buttress dam**
**dam** (01) that consists of a watertight **wall** (01), supported by **buttresses** (01) at intervals on the downstream side

**05 11010 rock fill dam**
**embankment dam** (05 11004) constructed mainly of **rock** (03 23027)

**05 11011 hydraulic fill dam**
**embankment dam** (05 11004) constructed of **hydraulic fill** (05 12032)

**05 11012 mine tailings dam**
**dam** (01) constructed with **waste** (01) from mining operations

**05 11013 constant radius arch dam**
**arch dam** (05 11007) that, in every horizontal cross-section, has approximately the same radius of curvature

**05 11014 constant angle arch dam**
**arch dam** (05 11007) in which the angle subtended by any horizontal cross-section is constant throughout the **height** (01)

**05 11015 double curvature arch dam**
**arch dam** (05 11007) that is curved both horizontally and vertically

**05 11016 arch buttress dam**
multiple arch dam
**buttress dam** (05 11009) in which the upstream part consists of a series of **arches** (01)

**05 11017 flat slab buttress dam**
**buttress dam** (05 11009) in which the upstream part is a relatively thin inclined **flat slab** (01)

*NOTE The **flat slab** (01) is usually of **reinforced concrete** (09 33032).*

**05 11018 solid head buttress dam**
**buttress dam** (05 11009) in which the upstream ends of all the **buttresses** (01) are enlarged symmetrically to meet those adjacent, thereby forming a continuous **structure** (01)

**05 11019 prestressed dam**
**dam** (01) the stability of which depends in part on the **tension** (03 15002) in vertical steel wires, **cables** (01) or **rods** (01) that pass through the **dam** (01) and are anchored into the **foundation** (01) **rock** (03 23027)

**05 11020 fabridam**
**dam** (01) made of flexible membrane anchored to a **river** (BS EN ISO 772) **bed** (05 22001) that can be inflated with water or air, or both, and is completely collapsible

**05 11021 gabion dam**
**gravity dam** (05 11006) constructed with **gabions** (05 21079)

**05 11022 crib dam**
**gravity dam** (05 11006) constructed with crossed pieces of **timber** (01) and **fill** (01)

**05 11023 bellmouth spillway**
morning glory spillway
**spillway** (01) that consists of a vertical **shaft** (01) with a **bellmouth** (05 32059) inlet

**05 11024 ski jump spillway**
**spillway** (01) with a **chute** (05 12154), at the bottom of which is a **flip bucket** (05 12061) that throws water up into the air to dissipate **energy** (01) at a safe distance from the bottom of the **spillway** (01)

**05 11025 siphon spillway**
**spillway** (01) that operates on the **siphon** (05 19008) principle

**05 11026 air regulated siphon spillway**
**siphon spillway** (05 11025) in which automatic regulation of **liquid flow** (BS EN ISO 772) to match the **discharge** (BS EN ISO 772) without appreciable change in the upstream water **level** (01) is achieved through admission of air at the inlet

**05 11027 side channel spillway**
**spillway** (01), the **crest** (05 12067) of which is roughly parallel to the **channel** (01) immediately downstream of the **spillway** (01)

**05 11028 auxiliary spillway**
emergency spillway
secondary **spillway** (01) that operates only during exceptional **flooding** (05 25012)

**05 11029 fuse plug spillway**
**embankment** (01) that when over-topped erodes in a controlled manner to form an **auxiliary spillway** (05 11028)

**05 11030 bye channel**
byewash
**channel** (01) constructed to divert **run-off** (01) around and not into a **reservoir** (01)

**05 11031 energy dissipator**
device constructed in a **watercourse** (01) to reduce substantially the kinetic **energy** (01) of fast flowing water

**05 11033 hydroelectric power station**
**power station** (02 21061) in which the **energy** (01) of falling water is used to drive **water turbines** (05 12002) coupled to **generators** (07 12034)

**05 11034 pumped storage**
means of storing **energy** (01) by pumping water up to a high **level** (01) **reservoir** (01) and releasing it at suitable times to a **hydroelectric power station** (05 11033)

**05 11035 power tunnel**
**tunnel** (01) that carries water to a **hydroelectric power station** (05 11033)

**05 11036 headrace**
**liquid flow** (BS EN ISO 772) **conduit** (01) from a **forebay** (05 11057) to a **water turbine** (05 12002) or **waterwheel** (05 11039)

**05 11037 tailrace**
**conduit** (01) that conveys the discharge from a **waterwheel** (05 11039) or **water turbine** (05 12002)

**05 11038 millrace**
**channel** (01) that carries water from a **river** (BS EN ISO 772), **stream** (BS EN ISO 772) or **millpond** (05 11003) to a **waterwheel** (05 11039)

**05 11039 waterwheel**
wheel, with buckets or paddles on the rim, that is rotated by water around a horizontal axis to provide **energy** (01)

**05 11040 undershot waterwheel**
**waterwheel** (05 11039) in which the water strikes the paddles at the bottom

**05 11041 overshot waterwheel**
**waterwheel** (05 11039) in which the water strikes the buckets at the top and passes over the wheel

**05 11042 breast waterwheel**
**waterwheel** (05 11039) in which the water strikes the buckets about half way up and passes underneath the wheel

**05 11043 surge shaft**
**shaft** (01) in **rock** (03 23027) that reduces transient pressure fluctuations in a **tunnel** (01)

**05 11044 headwall**
**retaining wall** (01) at the end of a **culvert** (01) or **pipe** (01)

**05 11045 diversion weir**
**weir** (01) to divert water from a **watercourse** (01) into another **channel** (01)

**05 11052 barrage**
**structure** (01) constructed across a **river** (BS EN ISO 772) that comprises a series of **gates** (05 12001) that when fully open allow flood water to pass without raising appreciably the **head water level** (05 17017)

**05 11053 cross regulator**
**barrage** (05 11052) across an artificial **channel** (01)

**05 11054 barrier**
**structure** (01) in a tidal **waterway** (05 22131) with **gates** (05 12001) that can be closed to prevent exceptionally **high water** (BS EN ISO 772) reaching inland areas liable to **flooding** (05 25012)

**05 11055 intake**
**structure** (01) through which water is drawn from a **river** (BS EN ISO 772) or other body of water

**05 11056 outfall**
**structure** (01) through which water is discharged into a **watercourse** (01) or body of water

**05 11057 forebay**
**structure** (01) that forms a transition from a **reservoir** (01), **river** (BS EN ISO 772) or other body of water to the upstream end of a **conduit** (01)

### 3.2 Parts (05 12xxx)

**05 12001 gate**
leaf or **structure** (01) moved to stop or control **liquid flow** (BS EN ISO 772) in a **channel** (01) or through an opening

**05 12002 water turbine**
prime mover rotated by water to generate power

**05 12003 valve tower**
**tower** (03 51005) within a **reservoir** (01) that houses **pipes** (01) with **draw-off valves** (05 12109) at various **levels** (01)

**05 12004 scour outlet**
**structure** (01) in the **bed** (05 22001) of a **reservoir** (01) at the upstream end of a **scour pipe** (05 12005) or **scour tunnel** (05 12006)

**05 12005 scour pipe**
outlet **pipe** (01) from a **reservoir** (01) at the lowest possible **level** (01) for discharging water

**05 12006 scour tunnel**
outlet **tunnel** (01) for discharging water and **sediment** (BS EN 772) from a **reservoir** (01) at the lowest possible **level** (01)

**05 12007 scour sluice**
**sluice gate** (05 12077) that controls **liquid flow** (BS EN ISO 772) through a **scour outlet** (05 12004)

**05 12008 top of dam**
uppermost surface of a **dam** (01), excluding **parapets** (01) and **railings** (06 12023)

**05 12009 heel of dam**
junction of the upstream face of a **gravity dam** (05 11006) with the **ground** (01) surface

**05 12010 toe of dam**
junction of the downstream face of a **gravity dam** (05 11006) or of the face of a **shoulder** (05 12013) with the **ground** (01) surface

**05 12011 core**
zone of **material** (01) of low **permeability** (01) in an **embankment dam** (05 11004) that extends from the **foundation** (01) to near the **top of dam** (05 12008) and that inhibits **seepage** (05 19004)

**05 12012 core wall**
**wall** (01) of **material** (01) of low **permeability** (01) in an **embankment dam** (05 11004)

**05 12013 shoulder**
part of **embankment dam** (05 11004), on the upstream or downstream side of the **core** (05 12011), that supports the **core** (05 12011)

**05 12014 cut-off trench**
**trench** (01) excavated below the general **foundation** (01) **level** (01) to a layer of low **permeability** (01) and then filled with a **material** (01) of low **permeability** (01)

**05 12015 cut-off wall**
**wall** (01) of **material** (01) of low **permeability** (01) built into a **foundation** (01) to reduce **seepage** (05 19004)

**05 12016 grout cut-off**
grout curtain
thin vertical zone in a **foundation** (01) into which **grout** (01) is injected to reduce **seepage** (05 19004) under a **dam** (01)

**05 12017 grout cap**
**concrete** (01) pad constructed to facilitate subsequent pressure grouting of the **grout cut-off** (05 12016) below

**05 12018 grout blanket**
area of **foundation** (01) of an **embankment dam** (05 11004) grouted to a uniform **depth** (01)

**05 12019 upstream blanket**
layer of impervious **material** (01) placed on a **reservoir** (01) **bed** (05 22001) or under an upstream **shoulder** (05 12013)

**05 12020 clay blanket**
layer of **clay** (BS EN 12670) placed on the **bed** (05 22001) of a **reservoir** (01) or the upstream face of an **embankment dam** (05 11004)

**05 12021 finger drain**
one of a series of narrow parallel **trenches** (01) filled with pervious **material (**01) constructed in the **foundation** (01) **material** (01) of the downstream **shoulder** (05 12013) to relieve **pore water pressure** (03 27011)

**05 12022 filter zone**
band of granular **material** (01) in an **embankment dam** (05 11004) graded to allow **seepage** (05 19004) causing migration of material within the **embankment dam** (05 11004) itself

**05 12023 transition zone**
semi-pervious zone
part of an **embankment dam** (05 11004) between a **filter zone** (05 12022) and a less permeable zone, whose **particle size distribution** (03 27009) is intermediate between the two

**05 12024 drainage curtain**
line of **relief wells** (05 12030)

**05 12025 dam membrane**
**sheet** (01) or thin zone of a flexible impervious **material** (01) on the upstream face of an **embankment dam** (05 11004)

**05 12026 slope protection**
layer of **material** (01) on the **slope** (01) of an **embankment** (01) to protect it against **wave** (05 29002) **action** (01) and other sources of damage

**05 12027 weighting of a slope**
additional **material** (01) placed on the **slope** (01) of an **embankment** (01) so as to form a **berm** (03 22001) to improve stability

**05 12029 toe weight**
additional **material** (01) placed at the toe of an **embankment dam** (05 11004) to increase its stability

**05 12030 relief well**
vertical **well (**05 21002) or **borehole** (01) downstream of, or in downstream **shoulder** (05 12013) of, a **dam** (01) to collect **seepage** (05 19004) water passing through or under the **dam** (01) and so reduce **pore water pressure** (03 27011)

**05 12031 toe filter**
graded **filter medium** (05 33003) forming the downstream toe of an **earth dam** (05 11005)

**05 12032 hydraulic fill**
**material** (01) for an **embankment** (01) conveyed in suspension and allowed to settle in place

**05 12033 inspection gallery**
passage in a **gravity dam** (05 11006) that gives access for observation of measuring instrument **readings** (BS 6953) to monitor **performance** (01) of the **structure** (01)

**05 12034 drainage gallery**
passage in a **gravity dam** (05 11006) to collect **seepage** (05 19004)

**05 12035 fish pass**
artificial passage down which water flows to enable migratory fish to surmount an obstruction

*NOTE Examples of obstructions are **weirs** (01) and **dams** (01).*

**05 12036 fish ladder**
**fish pass** (05 12035) in the form of an ascending series of pools

**05 12037 seepage collar**
projecting collar of **concrete** (01) built around the outside of a **conduit** (01) under an **embankment dam** (05 11004) to reduce **seepage** (05 19004) through a material adjacent to the **conduit** (01)

**05 12038 toe loading**
**material (**01) deposited at the foot of a **soil** (01) or **rock** (03 23027) **fill** (01) **slope** (01) to improve **soil** (01) stability

**05 12039 settlement gauge**
**gauge (**12 86029) for **measuring** (01) **settlement** (01) within **fill** (01) comprising nominally vertical telescopic **tube** (01) with protruding crossarms; the vertical movement at the **joints** (01) in the **tube** (01) is measured by lowering a torpedo with spring-loaded pawls

**05 12040 magnetic settlement gauge**
**gauge** (12 86029) for **measuring** (01) **settlement** (01) within **fill** (01) comprising vertical non-magnetic **tube** (01) with magnetic **plates** (01) at various levels; vertical movement is **measured** (01) by lowering a probe that responds to the local magnetic field at each **plate** (01)

**05 12041 settlement plate**
horizontal **plate** (01) connected to **risers** (05 42030) for **measuring** (01) **settlement** (01) within **fill** (01)

**05 12042 inverted plumb line**
vertical wire strung between a fixed base in stable **ground** (01) and a floating top, for **measuring** (01) the horizontal movement of a **structure** (01)

**05 12043 borehole extensometer**
set of **rods** (01), each of a different **length** (01) and individually anchored within a **borehole** (01), terminating at a **measuring instrument** (BS 6953) at the surface, for determining displacements

**05 12044 slip rod**
one of a series of **rods** (01) of variable **length** (01) indicating magnitude and position of **deflection** (03 15001) of a buried vertical **tube** (01) by whether the **rod** (01) will pass down the **tube** (01); this will show horizontal displacement of surrounding **soil** (01)

**05 12045 hydraulic piezometer**
**piezometer** (03 26053) by which **pore water pressure** (03 27011) is relayed to the **ground** (01) surface for **measurement** (01)

**05 12046 pneumatic piezometer**
**piezometer** (03 26053) read by **measuring** (01) the pressure of a **gas** (BS 1179) required to balance a **diaphragm valve** (05 12105) near a porous tip

**05 12047 electrical piezometer**
**piezometer** (03 26053) read by **measuring** (01) the **deflection** (03 15001) of a diaphragm near a porous tip, using an **electrical** (07 17003) transducer

**05 12048 Casagrande pot**
porous **tube** (01) attached to the base of a **pipe** (01) embedded in **soil** (01) to **measure** (01) **pore water pressure** (03 27011)

**05 12049 total pressure cell**
device for **measuring** (01) total **soil** (01) pressure normal to its face

**05 12050 strain gauge**
**gauge** (12 86029) for **measuring** (01) small displacements from which **strains** (01) can be calculated

**05 12051 vibrating wire strain gauge**
**strain gauge** (05 12050) in which changes of frequency of a vibrating wire are related to **strain** (01)

**05 12052 electrical resistance strain gauge**
**strain gauge** (05 12050) in which changes of frequency of an **electrical** (07 17003) element are related to **strain** (01)

**05 12053 mechanical strain gauge**
**strain gauge** (05 12050) that gives a direct **measure** (01) of changes in distance between two or more reference points

**05 12054 optical strain gauge**
**strain gauge** (05 12050) that employs optical means of **measurement** (01)

**05 12055 stand pipe**
vertical **pipe** (01) installed in the **ground** (01) so that **ground water** (BS ISO 6107-1) **level** (01) may be determined

**05 12056 tell tale**
**strip** (01) of **glass** (01) or other brittle **material** (01), firmly anchored over a crack; it will itself crack if the original crack continues to widen, and hence provide a coarse indication of movement

**05 12057 spillway crest**
**crest** (05 12067) of a **spillway** (01)

**05 12058 training wall**
**wall** (01) that directs the **liquid flow** (BS EN ISO 772) in a **watercourse** (01)

**05 12059 siphon hood**
**structural member** (01) that provides the upper surface containing the **liquid flow** (BS EN ISO 772) in a **siphon spillway** (05 11025)

**05 12060 nappe deflector**
projection downstream of the **spillway crest** (05 12057) of a **siphon spillway** (05 11025) to deflect the **liquid flow** (BS EN ISO 772) against the **siphon hood** (05 12059) to **prime** (05 14003) the **siphon** (05 19008)

**05 12061 flip bucket**
**structure** (01) that deflects high velocity water into an upward trajectory

**05 12062 spillway channel**
**channel** (01) that conveys water from a **spillway crest** (05 12057) to the **river** (BS EN ISO 772) downstream

**05 12063 flashboard**
length of **timber** (01), **concrete** (01) or steel placed on a **spillway crest** (05 12057) to raise the **retention water level** (05 17001); it may be removed quickly should **flooding** (05 25012) occur

**05 12065 chute block**
**baffle** (BS EN ISO 772) block in the **chute** (05 12154) of a **spillway** (01)

**05 12066 plunge pool**
deep water-filled **basin** (01) for dissipating the **energy** (01) of a free-trajectory jet entering it from a **spillway** (01)

**05 12067 crest**
top, controlling surface of a **weir** (01), **spillway** (01) or similar hydraulic **structure** (01)

**05 12068 end contraction**
contraction at the edges of the water area flowing over a **weir** (01) calibrated for **measurement** (01) of **discharge** (BS EN ISO 772)

**05 12069 trash rack**
row of parallel **bars** (01) across an **intake** (05 11055) to catch waterborne **solid waste** (01)

**05 12070 stop log**
**component** (01), the ends of which are placed in grooves in **walls** (01) or **piers** (01) on either side of a water passage to close it

**05 12071 fish screen**
**barrier** (01) that prevents fish entering a **conduit** (01)

**05 12072 silt trap**
sand trap
basin-shaped enlargement in a **stream** (BS EN ISO 772) or **channel** (01) where the **sediment** (BS EN 772) is deposited due to the drop in velocity

**05 12073 flow meter**
**measuring instrument** (BS 6953) for **flow** (01) in a **conduit** (01)

**05 12074 orifice meter**
**measuring instrument** (BS 6953) for fluid flow in a **pipe** (01) that consists of an opening in a **plate** (01) fixed within the **pipe** (01) and with **pressure tappings** (BS EN 1487) on the upstream and downstream sides

**05 12075 Venturi meter**
**flow meter** (05 12073) in a **pipe** (01) with a short tapered constriction followed by a cylindrical **throat** (BS EN ISO 772) and a longer tapered expansion, so proportioned as to minimize **energy loss** (4), with **pressure tappings** (BS EN 1487) before the inlet and in the **throat** (BS EN ISO 772)

**05 12076 water meter**
device that **measures** (01) and indicates **flow** (01) of water without interruption

*NOTE May maintain a record of **measurements** (01).*

**05 12077 sluice gate**
penning gate
**gate** (05 12001) that moves vertically between guides

*NOTE Usually rectangular.*

**05 12078 vertical lift gate**
large, mechanically operated, **gate** (05 12001) that moves vertically within guides

**05 12079 fixed wheel gate**
**gate** (05 12001) with wheels, mounted on its end posts, that bear against **rails (**04 22051)

**05 12080 flap gate**
**gate** (05 12001) with hinges along its top or bottom edge

**05 12081 radial gate**
segmental sluice gate
**gate** (05 12001) with a curved upstream **plate** (01) supported by radial arms

**05 12082 sector gate**
**gate** (05 12001) with a curved upstream **plate** (01) supported by several radial arms pivoted at the downstream rim of a recess into which the **gate** (05 12001) retracts

**05 12083 sector gate**
**spillway gate** (05 12084), similar to a roller **drum gate** (05 12085), in which the roller is not cylindrical but a sector of a circle

**05 12084 spillway gate**
crest gate
**gate** (05 12001) on the **crest** (05 12067) of a **spillway** (01) to control overflow or **reservoir** (01) water **level** (01)

**05 12085 drum gate**
**spillway gate** (05 12084) or **barrage** (05 11052) **gate** (05 12001) that consists of a long hollow drum held in its raised position by the water pressure in a flotation chamber; it rises with the **reservoir** (01) water **level** (01) and lowers when overtopped by floods

**05 12086 roller drum gate**
**spillway gate** (05 12084) in the form of a hollow cylinder for regulating **liquid flow** (BS EN ISO 772) at a **dam** (01) **spillway** (01) carried each side on large toothed wheels that mesh with steeply inclined racks up which the **gate** (05 12001) moves

**05 12087 tilting gate**
bottom hinged **flap gate** (05 12080)

**05 12088 guard gate**
**gate** (05 12001) that shuts off the **liquid flow** (BS EN ISO 772) for **maintenance** (01) or in emergencies

**05 12089 wicket**
small **gate** (05 12001) that forms part of a larger **gate** (05 12001) in a hydraulic **structure** (01)

**05 12090 stop valve**
**valve** (01) that turns a supply completely on or off

**05 12091 discharge valve**
**valve** (01) in a **pipeline** (01) for increasing or decreasing **discharge** (BS EN ISO 772)

**05 12092 non-return valve**
**valve** (01) that prevents reversal of fluid flow

**05 12093 pressure relief valve**
spring or weight-loaded **valve** (01) that discharges automatically to a safe place fluid that has built up to excessive pressure

**05 12094 pressure reducing valve**
**valve** (01) that reduces the pressure of a fluid immediately downstream of its position in a **pipe** (01) to a pre-selected value or by a predetermined ratio

**05 12095 pressure sustaining valve**
**valve** (01) that maintains a predetermined pressure immediately upstream of its position in a **pipe** (01)

**05 12096 outlet valve**
**valve** (01) at the outlet of a **pipe** (01)

**05 12097 sluice valve**
**stop valve** (05 12090) that closes or regulates **liquid flow** (BS EN ISO 772) in a **pipe** (01) by a **plate** (01) sliding at right angles to the flow

**05 12098 gate valve**
small **sluice valve** (05 12097)

**05 12099 wedge gate valve**
**sluice valve** (05 12097) with a **plate** (01) in the form of a **wedge** (06 32230) that fits into tapered guides

**05 12100 screwdown valve**
**valve** (01) in which a **plate** (01) is moved by rotation of a screwed spindle to close or open the orifice

**05 12101 butterfly valve**
**valve** (01) in which a streamlined disc pivots about a diametric axis

**05 12102 Howell-Bunger valve**
**valve** (01) for regulating high pressure outlets and ensuring good energy dissipation, in which a fixed cone pointed upstream causes dispersion of the jet and a cylindrical sleeve moves longitudinally to regulate fluid flow

**05 12103 hollow jet valve**
**valve** (01) for regulating high pressure outlets in which air is admitted to prevent jet instability and from which fluid flow emerges in the form of a hollow cylinder segmented by **splitter walls** (05 12152)

**05 12104 needle valve**
**valve** (01) for regulating the **liquid flow** (BS EN ISO 772) in or from a **pipe** (01) in which a slender cone moves along the axis of **liquid flow** (BS EN ISO 772) to close against a fixed conical seat

**05 12105 diaphragm valve**
**valve** (01) with a **diaphragm seal** (BS EN 736-2)

**05 12106 automatically controlled valve**
**valve** (01) controlled by ultrasonic or electronic sensing

**05 12107 foot valve**
**non-return valve** (05 12092) at the bottom of the suction **pipe** (01) of a **pump** (01)

**05 12108 guard valve**
**valve** (01) that shuts off the **liquid flow** (BS EN ISO 772) for **maintenance** (01) or in emergencies

**05 12109 draw-off valve**
**valve** (01) controlling **discharge** (BS EN ISO 772) from a **reservoir** (01) or tank

**05 12110 valve chamber**
chamber that houses a **valve** (01)

**05 12111 positive displacement pump**
**pump** (01) in which fluid is alternatively drawn into and expelled from a chamber

**05 12112 axial flow pump**
propeller pump
**pump** (01) with an **impeller** (05 12128) that causes the fluid to enter and be discharged axially

**05 12113 mixed flow pump**
**pump** (01) with an **impeller** (05 12128) imparting both centrifugal and axial motion to water

**05 12114 reciprocating pump**
**positive displacement pump** (05 12111) in which the motive **force** (01) is applied to water by a reciprocating mechanism

**05 12115 bucket pump**
**reciprocating pump** (05 12114) in which a bucket with a **non-return valve** (05 12092) in it reciprocates within a vertical **pipe** (01)

*NOTE Usually in a **well** (05 21002) or **borehole** (01).*

**05 12116 ram pump**
**reciprocating pump** (05 12114) in which a piston reciprocating within a cylinder, that has inlet and outlet **valves** (01), alternately draws water into and forces water out of the cylinder on successive strokes of the piston

**05 12117 progressive cavity pump**
**pump** (01) with a helical rotor that revolves inside a suitably shaped resilient casing, forcing liquid from inlet to output

**05 12118 rotary lobe pump**
**pump** (01) in which two rotors with lobes counter-rotate within a chamber, propelling liquid in the advancing cavities formed between the lobes and the casing

**05 12119 peristaltic pump**
**pump** (01) in which a flexible **tube** (01) is compressed by rotating rollers offset from a common shaft, forcing fluid along the **tube** (01)

**05 12120 diaphragm pump**
**pump** (01) in which liquid is drawn into and discharged from a chamber through **non-return valves** (05 12092) by alternating the capacity of the chamber using a flexible diaphragm

**05 12121 hydraulic ram**
hydraulic mechanism using the **energy** (01) in a **stream** (BS EN ISO 772) to raise some of the water to a considerable **height** (01)

**05 12122 Archimedean screw**
mechanical device that raises liquid by a long helical screw rotating within a closely fitting inclined **channel** (01) or **tube** (01)

**05 12123 chain pump**
mechanical device that raises water by discs passing up a **pipe** (01) on a continuous chain

**05 12124 multi-stage pump**
**pump** (01) that has several **impellers** (05 12128) and **diffusers** (05 12130) connected in series on one drive shaft

**05 12125 submersible pump**
**pump** (01) with direct coupled motor that is operated when wholly submerged in the liquid

**05 12126 vertical spindle pump**
**pump** (01) that is connected to the motor by a long vertical drive shaft

**05 12127 wind pump**
**pump** (01) that obtains its motive **force** (01) from the wind

**05 12128 impeller**
circular assembly of curved blades that converts rotating mechanical power into linear fluid motion in a rotodynamic **pump** (01)

**05 12129 volute**
spiral case that encloses the **impeller** (05 12128) of a **centrifugal pump** (01)

**05 12130 diffuser**
gradually increasing cross-section at the outlet to a **centrifugal pump** (01) or **air compressor** (12 46009) that reduces the speed of the air or water and thus increases its pressure

**05 12131 pumping unit**
individual **pump** (01) and the means by which it is controlled

**05 12132 pumping station**
**building** (01) or place where **pumps** (01) are located and operated

**05 12133 pump house**
small **building** (01) within which **pumps** (01) are located and operated

**05 12134 pump sump**
**sump** (01) in which the suction **pipe** (01) of a **pump** (01) is located

**05 12135 reaction turbine**
**water turbine** (05 12002) in which both pressure and kinetic **energy** (01) are converted into rotary **energy** (01)

**05 12136 impulse turbine**
**water turbine** (05 12002) in which kinetic **energy (**01) alone is converted into rotary **energy** (01)

**05 12137 Francis turbine**
**reaction turbine** (05 12135) in which water enters the **turbine runner** (05 12143) radially inwards and exits axially

**05 12138 mixed flow turbine**
inward flow **reaction turbine** (05 12135) in which the water acts on the **turbine runners** (05 12143) both radially and axially

**05 12139 propeller turbine**
**reaction turbine** (05 12135) in which water enters and leaves axially

**05 12140 Kaplan turbine**
**propeller turbine** (05 12139) with vertical shaft and variable pitch blades

**05 12141 Pelton wheel**
**impulse turbine** (05 12136) with a **turbine runner** (05 12143) that comprises a set of double cup-shaped buckets rotated by the impact of a jet or jets of water on the buckets

**05 12142 pump turbine**
machine that can act as a **pump** (01) and at other times as a **water turbine** (05 12002)

**05 12143 turbine runner**
circular **assembly** (01) of blades or buckets in a **water turbine** (05 12002) that converts linear fluid motion into rotary mechanical power

**05 12144 draft tube**
**conduit** (01) that receives flow from the outlet of the **turbine runner** (05 12143) of a **reaction turbine** (05 12135) and tapers outward to reduce velocity and convert **velocity head** (BS EN ISO 772) into **pressure head** (05 17020)

**05 12145 gate seal**
**jointing section** (01) to prevent water leaking between a **gate** (05 12001) and the perimeter of the **waterway** (05 22131)

**05 12146 music note seal**
**gate seal** (05 12145) that has a cross-section similar to the symbol for a quaver

**05 12147 revolving screen**
**screen** (01), in the form of a cylinder or belt, turned mechanically or by the **force** (01) of the water passing through it

**05 12148 screen rake**
hand or powered rake for cleaning bar **screens** (05 32040)

**05 12149 float switch**
device that incorporates a **float** (BS EN ISO 772) that operates a switch in response to changes in the **level** (01) of the liquid

**05 12150 hydrocyclone**
devices that uses centrifugal **forces** (01) to separate **suspended solids** (BS ISO 6107-2)

**05 12151 air vessel**
air-containing vessel fitted to the delivery side of a **pump** (01) to smooth out the pulsating discharge

**05 12152 splitter wall**
**wall** (01) in a **channel** (01) serving as a **flow splitter** (05 32038)

**05 12153 sill**
**construction** (01) that provides a seating for a **gate** (05 12001)

**05 12154 chute**
steep **channel** (01)

### 3.3 Activities (05 14xxx)

**05 14001 draw down**
lower or reduce the water **level** (01) in a **reservoir** (01)

**05 14002 float tracking**
process of recording the movement of a **float** (BS EN ISO 772)

**05 14003 prime**
fill a **pump** (01) or **siphon** (05 19008) with water to ensure a full flow when operation begins

### 3.4 Processes (05 15xxx)

**05 15001 flood surcharge**
maximum rise of **still water level** (05 29102) above **top water level** (05 37001) during a **design flood** (05 29011)

**05 15002 rapid drawdown**
sudden drop in water **level** (01) that leads to a reduced **factor of safety** (01) of an **embankment** (01) or earth retaining **structure** (01)

### 3.5 Plant, equipment and documentation (05 16xxx)

**05 16001 hydrograph**
relationship or graph showing variation with time of **level** (01), **discharge** (BS EN ISO 772) or **velocity** (BS EN ISO 772) of water in a **watercourse** (01) or **channel** (01)

**05 16002 hydraulic model**
physical **model** (10 26005) of a hydraulic **structure** (01) or system from which **performance** (01) of a **prototype** (11 12002) can be deduced, using **criteria for similarity** (05 19028)

**05 16003 rocking tray hydraulic model**
**hydraulic model** (05 16002) in which **tides** (BS EN ISO 772) are simulated by rocking

**05 16004 mobile-bed hydraulic model**
**hydraulic model** (05 16002) in which the **bed** (05 22001) is formed of material suitable for studying **scour** (05 25011) and **accretion** (05 25002)

**05 16005 uplift**
upward **force** (01) due to **pore water pressure** (03 27011) acting on the base of a **structure** (01)

### 3.6 Properties (05 17xxx)

**05 17001 retention water level**
in **water engineering** (01), maximum **level** (01) that water rises under normal operating conditions, exclusive of any provision for **flood surcharge** (05 15001)

**05 17004 maximum water level**
highest **still water level** (05 29102) in a **reservoir** (01) during the probable maximum flood

**05 17005 reservoir capacity**
gross capacity of a **reservoir** (01) from the bottom up to **top water level** (05 37001)

**05 17006 active storage**
working storage
volume of water in a **reservoir** (01) available for its intended use

**05 17007 inactive storage**
volume of water in a **reservoir** (01) between **invert level** (05 17047) and minimum operating **level** (01)

**05 17008 live storage**
sum of **active storage** (05 17006) and **inactive storage** (05 17007)

**05 17009 dead storage**
volume of water in a **reservoir** (01) below the **invert level** (05 17047) of the lowest outlet

**05 17010 bank storage**
ground storage
water that has infiltrated from a **reservoir** (01) into the surrounding **ground** (01) where it remains until the water **level** (01) in the **reservoir** (01) is lowered

**05 17011 freeboard**
vertical distance between water **level** (01) and lowest **level** (01) of a water-retaining **structure** (01) at which uncontrolled overflow would occur

**05 17012 net freeboard**
dry freeboard
vertical distance between maximum water **level** (01) and the top of the water retaining **structure** (01)

**05 17013 dam freeboard**
gross freeboard
vertical distance between **top water level** (05 37001) and **top of dam** (05 12008)

**05 17014 capacity curve**
graph that shows the volume of water in a **reservoir** (01) or tank at any given water **level** (01)

**05 17015 drawdown range**
difference between **top water level** (05 37001) and the minimum operating **level** (01)

**05 17016 cut-off depth**
vertical distance from **foundation** (01) **level** (01) to the lowest **level** (01) of a **cut-off trench** (05 12014) or **cut-off wall** (05 12015)

**05 17017 head water level**
water **level** (01) upstream of a hydraulic **structure** (01)

**05 17018 tail water level**
water **level** (01) downstream of a hydraulic **structure** (01)

**05 17019 weir head**
**depth** (01) of water over a **weir** (01) from the **crest** (05 12067) or bottom of the notch to the **head water level** (05 17017)

**05 17020 pressure head**
**hydrostatic pressure** (05 47004) expressed as a **head** (01)

**05 17021 potential head**
**head** (01) at a **datum** (01) due to the elevation of the liquid above that **datum** (01)

**05 17022 static head**
**pressure head** (05 17020) of stationary liquid

**05 17025 suction head**
vacuum head
**head** (01) equal to the ratio of the amount by which the pressure falls short of atmospheric pressure to the **density** (01) of the liquid

**05 17026 static lift**
sum of **suction head** (05 17025) and **static head** (05 17022) at a **pump** (01)

**05 17027 manometric head**
gross **head** (01) imparted by a **pump** (01), being the sum of the **static lift** (05 17026), **velocity head** (BS EN ISO 772) and the total **friction loss** (05 17043) on suction and delivery sides

**05 17028 working pressure**
pressure at which a **pipe** (01), vessel, **pump** (01) or system is intended to work

**05 17029 centre of pressure**
position of point of application of the resultant hydrostatic **force** (01) on a submerged surface

**05 17030 buoyancy**
upward **force** (01) exerted on a body in a fluid equal to the **weight** (11 27002) of the fluid displaced

**05 17031 piezometric water level**
**level** (01) to which water would rise in a **pipe** (01) inserted into an **embankment** (01) or **foundation** (01)

**05 17032 centre of buoyancy**
centroid of the underwater volume of a vessel or floating body

**05 17033 metacentre**
point at the intersection of vertical lines through the **centre of buoyancy** (05 17032) in the initial and slightly inclined positions of a vessel

**05 17034 metacentric height**
distance between the centre of gravity of a floating body and its **metacentre** (05 17033)

**05 17035 coefficient of velocity**
ratio of the actual **discharge** (BS EN ISO 772) **velocity** (BS EN ISO 772) to the theoretical **discharge** (BS EN ISO 772) **velocity** (BS EN ISO 772)

**05 17036 coefficient of contraction**
ratio of the **vena contracta** (05 17042) of a jet discharged under pressure to the area of the orifice

**05 17037 coefficient of permeability**
ratio of **velocity** (BS EN ISO 772) of water flowing through **soil** (01) to the **hydraulic gradient** (01) causing the flow

**05 17038 effective area of orifice**
actual area of an orifice multiplied by its **discharge coefficient** (BS EN ISO 772)

**05 17039 bulk modulus**
elastic modulus
ratio of change in pressure to volumetric **strain** (01)

**05 17040 cavitation number**
ratio of difference between the absolute pressure in the undisturbed flow and the vapour pressure of the liquid to the product of the **velocity head** (BS EN ISO 772) in the undisturbed liquid and its **density** (01)

**05 17041 discharge curve**
curve that reflects the relationship between **head** (01) and flow in a **conduit** (01)

**05 17042 vena contracta**
minimum cross-sectional area of a jet of water beyond the orifice or notch through which it emerges

**05 17043 friction loss**
**energy loss** (BS EN ISO 772) due to **friction** (BS EN ISO 772)

**05 17044 entrance loss**
**energy loss** (BS EN ISO 772) at the inlet to a **conduit** (01) or hydraulic **structure** (01) due to **friction** (BS EN ISO 772) and turbulence

**05 17045 exit loss**
**energy loss** (BS EN ISO 772) at the exit from a **conduit** (01) or hydraulic **structure** (01) due to **friction** (BS EN ISO 772) and turbulence

**05 17046 eddy loss**
**energy loss** (BS EN ISO 772) due to eddies, swirls and impact

**05 17047 invert level**
**level** (01) of the lowest internal part of the cross-section of a **conduit** (01)

**05 17048 soffit level**
**level** (01) of the highest internal part of the cross-section of a closed **conduit** (01)

**05 17049 self-cleansing gradient**
minimum **gradient** (01) of a **conduit** (01) of a particular **size** (01) at which the **liquid flow** (BS EN ISO 772) will transport the solids that the liquid normally contains

**05 17050 surface tension**
**tension** (03 15002) displayed by the open surface of a liquid as if it were covered by a tight elastic skin

### 3.7 Spaces (05 18xxx)

**05 18001 drawdown zone**
area of the **bank** (05 28001) of a **reservoir** (01) or **dam** (01) uncovered by **draw down** (05 14001)

**05 18002 submerged orifice**
orifice with a **liquid flow** (BS EN ISO 772) that discharges completely under water

### 3.8 Miscellaneous (05 19xxx)

**05 19001 streamline**
imaginary line in the direction of flow of a fluid across which, at any instant, there is no flow

**05 19002 streamline flow**
fluid flow that is steady and continuous, and in which the **streamlines** (05 19001) are more or less parallel

**05 19004 seepage**
percolation of small quantities of liquid through **soil** (01), **rock** (03 23027) or a **wall** (01) or the material that has percolated in this manner

**05 19005 flow net**
**network** (01) of curvilinear elements, approximately square in **shape** (11 27004), formed by **equipotential lines** (05 19006) and **streamlines** (05 19001) to represent fluid flow conditions in **ground** (01)

**05 19006 equipotential line**
line that connects points of equal **total head** (BS EN ISO 772)

**05 19008 siphon**
closed **conduit** (01), part of which rises above the **hydraulic gradient** (01), and the flow through which can be started only by the removal of **gases** (BS 1179) and maintained only by their exclusion

**05 19009 self-cleansing velocity**
**velocity** (BS EN ISO 772) of **liquid flow** (BS EN ISO 772) in a **conduit** (01) below which deposition of **suspended solids** (BS ISO 6107-2) takes place

**05 19010 laminar flow**
fluid flow in which layers of fluid move smoothly past each other and **forces** (01) due to **viscosity** (11 27038) are significant in comparison with **forces** (01) due to inertia

**05 19011 transitional flow**
fluid flow at a **velocity** (BS EN ISO 772) between the **lower critical velocity** (05 19013) and **upper critical velocity** (05 19014) intermediate between **laminar flow** (05 19010) and **turbulent flow** (05 19012)

**05 19012 turbulent flow**
sinuous flow
fluid flow that is unsteady and in which the **velocity** (BS EN ISO 772) at a point is not constant and the inertial **forces** (01) predominate over **forces** (01) due to **viscosity** (11 27038)

**05 19013 lower critical velocity**
**velocity** (BS EN ISO 772) of a fluid in a **pipe** (01) below which **laminar flow** (05 19010) always exists and above which there may be **turbulent flow** (05 19012)

**05 19014 upper critical velocity**
**velocity** (BS EN ISO 772) of a fluid in a **pipe** (01) above which **turbulent flow** (05 19012) always exists

**05 19015 surge**
transient change in pressure in a **conduit** (01) due to stopping and starting the flow suddenly

*NOTE Typically occurs when **valves** (01) are closed and opened.*

**05 19016 water hammer**
shock pressure waves due to sudden change in the **velocity** (BS EN ISO 772) of water in a **pipe** (01) or **tunnel** (01)

**05 19017 surge vessel**
closed chamber that utilizes compressibility of contained air to reduce transient pressure fluctuations in a **pipe** (01)

**05 19018 surge chamber**
large chamber that feeds water or receives water from a **conduit** (01) at the onset of **surge** (05 19015) to reduce pressure fluctuations

**05 19019 surge pipe**
open-topped vertical **pipe** (01) to reduce transient pressure fluctuations

**05 19020 surge tank**
open tank connected to the top of a **surge pipe** (05 19019) or **surge shaft** (05 11043) to avoid loss of water

**05 19021 cavitation**
formation and implosive collapse of water vapour bubbles in flowing water as a result of a sharp drop in pressure; it may cause **erosion** (05 25010) of containing surfaces

**05 19022 critical gradient**
**gradient** (01) of a **channel** (01) that produces **critical flow** (BS EN ISO 772)

**05 19023 rating**
relationship between **discharge** (BS EN ISO 772) and other variables

**05 19024 non-uniform flow**
**liquid flow** (BS EN ISO 772) in a **channel** (01) in which the water surface is not parallel to the **bed** (05 22001), due to change in **slope** (01) or **width** (01) of **channel** (01) or some other discontinuity

**05 19025 velocity of whirl**
tangential component of **velocity** (BS EN ISO 772) in a vortex

**05 19026 free vortex**
vortex in which the **velocity of whirl** (05 19025) is inversely proportional to the radius from the centre of the vortex

**05 19027 forced vortex**
vortex in which the **velocity of whirl** (05 19025) is directly proportional to the radius from the centre of the vortex

**05 19028 criterion for similarity**
dimensionless ratio of physical quantities, the terms depending on the types of **forces** (01) acting, that has the same absolute value in two hydrodynamically similar systems

**05 19029 Euler number**
dimensionless parameter that represents the ratio between the inertia and pressure **forces** (01) in a fluid

**05 19030 equivalent sand roughness**
grain **size** (01) of **sand** (BS EN 12670) that, placed in a single layer as artificial roughening of the surface of a **hydraulic model** (05 16002), has the same hydraulic resistance in **turbulent flow** (05 19012) as the actual surface in question

**05 19031 compensation water**
water that has to be released by law or custom from a **reservoir** (01) or diversion **structure** (01) to meet the requirements of downstream users

**05 19032 dam break wave**
**wave** (05 29002) released down a valley by a **dam** (01) that fails

# 4 Inland waters, coastal and maritime engineering (05 2xxxx)

## 4.1 Works (05 21xxx)

**05 21001 harbour**
natural or artificially sheltered area of water where ships can lie

**05 21002 well**
hole excavated or drilled into the **ground** (01) for the extraction or observation of water, oil or **gas** (BS 1179)

**05 21003 shallow well**
**well** (05 21002) less than 15 m deep

**05 21004 feeder**
**stream** (BS EN ISO 772) or **conduit** (01) that supplies water to a **canal** (01), **reservoir** (01) or **pond** (BS ISO 6107-6)

**05 21005 leat**
artificial **channel** (01) that takes water from a natural **watercourse** (01) and conveys it at a shallower **gradient** (01)

**05 21006 cut**
excavated **channel** (01) that forms part of a **river** (BS EN ISO 772) or **navigation** (05 21007)

**05 21007 navigation**
part of a **river** (BS EN ISO 772) over which there is a legal right to navigate

*NOTE Usually canalized.*

**05 21008 slack-water navigation**
still-water navigation
**navigation** (05 21007) with no **current** (BS EN ISO 772) or a very slight one; water **level** (01) is maintained by **weirs** (01)

**05 21009 entrance lock**
guard lock
**lock** (01) that provides access to a **dock** (01) or **canal** (01) from a **tidal waterway** (BS EN ISO 772)

**05 21010 double lock**
arrangement of two parallel adjacent **lock chambers** (05 22044) in a **canal** (01)

*NOTE Sometimes interconnected to reduce **lockage** (05 27002).*

**05 21011 flight of locks**
series of connected **locks** (01) in which each **lock chamber** (05 22044) is followed immediately by another, the **head gate** (05 22017) of the lower forming the **tail gate** (05 22018) of the one above

**05 21012 roving bridge**
**bridge** (01) over **canal** (01) to enable a horse to change from one side of a **canal** (01) to the other without being released from the tow rope

**05 21013 flexible dam**
**dam** (01) that consists of a flexible membrane supported by **frames** (01) at close centres, held down to the **bed** (05 22001) by water pressure

**05 21014 irrigation canal**
**canal** (01) for **irrigation** (01)

**05 21015 main canal**
**irrigation canal** (05 21014) that takes water from a **headworks** (01) and delivers it to subsidiary **irrigation canals** (05 21014)

**05 21016 primary canal**
branch canal
**irrigation canal** (05 21014) that takes water from a **main canal** (05 21015) to lesser feeder **irrigation canals** (05 21014)

**05 21017 secondary canal**
**irrigation canal** (05 21014) that takes water from a **primary canal** (05 21016) for distribution

**05 21018 tertiary canal**
minor canal
**irrigation canal** (05 21014) that takes water from a **secondary canal** (05 21017) for distribution

**05 21019 quaternary canal**
sub-minor canal
**irrigation canal** (05 21014) that takes water from a **tertiary canal** (05 21018) for final distribution

**05 21020 field drainage**
system of **drains** (01) to control the **water table** (BS ISO 6107-3) in a field or series of fields

**05 21021 land drain**
agricultural drain
**land** (01) used in agriculture to lower the **water table** (BS ISO 6107-3)

**05 21022 wet dock**
**dock** (01) in which water is retained at a **level** (01) by **gates** (05 12001)

**05 21023 tidal dock**
**dock** (01) without **gates** (05 12001)

**05 21024 dockyard**
naval establishment with **docks** (01), **slipways** (05 21048), **stores** (01) and associated facilities

**05 21025 port**
group of **berths** (01) or **docks** (01), or the town or city in which they are situated

**05 21026 quay**
**platform** (06 52012), provided alongside a **berth** (01)

*NOTE Usually backing onto **land** (01).*

**05 21027 wharf**
riverside **quay** (05 21026) for commercial purposes

**05 21028 jetty**
**structure** (01) that provides access to one or more **berths** (01) at some distance from the **shore** (05 29150)

**05 21029 lead-in jetty**
framed **structure** (01) that guides vessels into the entrance of a confined area such as a **lock** (01) or **dock** (01)

**05 21030 staithe**
elevated waterside **structure** (01) for loading vessels

**05 21031 island berth**
**berth** (01) at which a vessel is moored to an isolated **structure** (01) that is not structurally connected to the **shore** (05 29150)

**05 21032 impounded basin**
**basin** (01) connected to a **tidal waterway** (BS EN ISO 772) by a **lock** (01) and in which the water **level** (01) is approximately constant

**05 21033 tidal basin**
**basin** (01) directly connected to a **tidal waterway** (BS EN ISO 772)

**05 21034 yacht basin**
area of water within a **harbour** (05 21001) that is specifically for berthing yachts

**05 21035 marina**
**basin** (01) with berthing facilities and ancillary services for pleasure craft

**05 21036 rubble mound breakwater**
**breakwater** (01) that consists primarily of **rocks** (03 23027) dumped or placed on the **sea** (BS ISO 6107-2) **bed** (05 22001)

**05 21037 vertical face breakwater**
**breakwater** (01) in which **wave** (05 29002) attack is resisted primarily by a vertically faced **structure** (01) that extends directly from the **sea** (BS ISO 6107-2) **bed** (05 22001)

**05 21038 composite breakwater**
**breakwater** (01) that consists of a submerged **rock** (03 23027) mound surmounted by a vertically faced **structure** (01) projecting above **sea** (BS ISO 6107-2) **level** (01)

**05 21039 main breakwater**
**breakwater** (01) that forms the side of a **harbour** (05 21001) from which the prevailing wind blows

**05 21040 lee breakwater**
**breakwater** (01) that forms the side of a **harbour** (05 21001) remote from the prevailing wind

**05 21041 island breakwater**
**breakwater** (01) not connected to the **shore** (05 29150)

**05 21042 mooring dolphin**
**dolphin** (01) with **mooring bollards** (05 21052) or hooks for securing a vessel with mooring lines

**05 21043 flexible dolphin**
**dolphin** (01) constructed of vertical **piles** (01) cantilevered from the **bed** (05 22001) of a **river** (BS EN ISO 772) or the **sea** (BS ISO 6107-2) that absorbs the **energy** (01) of impact during berthing by **deflection** (03 15001) of the **piles** (01)

**05 21044 warping dolphin**
**dolphin** (01) provided at one end of a **structure** (01) or at a change in direction of a **berth** (01) to support vessels being manoeuvred between two adjacent positions by the use of mooring lines

**05 21045 breasting dolphin**
**dolphin** (01) designed to take the impact of a berthing vessel or to prevent a moored vessel being pivoted by wind and **current** (BS EN ISO 772) about a short **jetty head** (05 22079)

**05 21046 bell dolphin**
**dolphin** (01) surmounted by a heavy bell-shaped **fender** (05 22081) that is free to rock under impact from a vessel and whose centre of gravity is thereby raised to absorb berthing **energy** (01)

**05 21047 berthing beam**
isolated piled **structure** (01) with a continuous **pile cap** (01) situated parallel to a **berth** (01), that has a similar function to two or more **breasting dolphins** (05 21045)

**05 21048 slipway**
drawdock
inclined **structure** (01) constructed partly under water, on which vessels are launched and hauled out of water

**05 21049 shipbuilding berth**
inclined **structure** (01) on which vessels are built and launched

**05 21050 launchway**
track on which a ship on a **shipbuilding berth** (05 21049) is launched

**05 21051 traversing slipway**
**slipway** (05 21048) at the top of which a ship can be moved laterally, leaving the **slipway** (05 21048) clear

**05 21052 mooring bollard**
strong shaped **post** (01) or pair of **posts** (01) fixed to a waterside **structure** (01) for attachment of mooring lines

*NOTE Usually made of cast iron.*

**05 21054 offshore structure**
**structure** (01) in the **sea** (BS ISO 6107-2) beyond the **low water** (BS EN ISO 772) line and not connected structurally to the **shore** (05 29150)

**05 21055 fixed offshore structure**
**offshore structure** (05 21054) intended to remain in one location and supported by the **sea** (BS ISO 6107-2) **bed** (05 22001)

**05 21056 mobile offshore structure**
**offshore structure** (05 21054) intended to be moved between locations; it may be supported by the **sea** (BS ISO 6107-2) **bed** (05 22001) or by **buoyancy** (05 17030) and retained in position by mooring lines

**05 21057 compliant offshore structure**
**fixed offshore structure** (05 21055) connected to, or supported on, the **sea** (BS ISO 6107-2) **bed** (05 22001) by an articulated **structure** (01) or system of tethers, in such a manner that it moves in sympathy with the action of **waves** (05 29002) and **wind loads** (01)

**05 21058 jack-up structure**
**mobile offshore structure** (05 21056) with **spuds** (05 22103) that enable the hull of the **structure** (01) to be raised above the surface of the water

**05 21059 semi-submersible structure**
floating **mobile offshore structure** (05 21056) that is supported by submerged **buoyancy** (05 17030) tanks that are below the influence of **waves** (05 29002)

**05 21060 gravity platform**
**fixed offshore structure** (05 21055) that is held in position by its **weight** (11 27002)

**05 21061 drilling platform**
**offshore structure** (05 21054) to support a drilling rig and house support facilities

**05 21062 production platform**
**offshore structure** (05 21054) from which development **wells** (05 21002) are drilled on an oil or **gas** (BS 1179) field and that houses the equipment to process the oil and **gas** (BS 1179)

**05 21063 tethered leg platform**
floating **production platform** (05 21062) held in position by vertical legs that are kept in **tension** (03 15002) by the **buoyancy** (05 17030) of the platform

**05 21064 hybrid platform**
**offshore structure** (05 21054) constructed in a combination of steel and **concrete** (01)

**05 21065 coast protection works**
**civil engineering works** (01) to protect **land** (01) against **erosion** (05 25010) or encroachment from the **sea** (BS ISO 6107-2)

**05 21066 sea defence works**
**civil engineering works** (01) to prevent or alleviate **flooding** (05 25012) by the **sea** (BS ISO 6107-2)

**05 21067 sea wall**
**wall** (01) parallel to the **shore** (05 29150) that forms part of **sea defence works** (05 21066) or **coast protection works** (05 21065)

**05 21068 flood defence works**
**civil engineering works** (01) to prevent or alleviate **flooding** (05 25012) from **rivers** (BS EN ISO 772)

**05 21069 bank protection**
**civil engineering works** (01) to protect a **bank** (05 28001) from **erosion** (05 25010)

**05 21070 rip-rap**
**bank protection** (05 21069) formed of large uncoursed **stones** (01), broken **rock** (03 23027) or precast **concrete** (01) units placed in random fashion

**05 21071 pitching**
**bank protection** (05 21069) of hand-placed **stones** (01) of similar **size** (01) or precast **concrete** (01) units

**05 21072 pole-wharfing**
**bank protection** (05 21069) of longitudinal **timber** (01) poles and short **piles** (01) providing toe support at the bottom of the **banks** (05 28001) of tidal lengths of **river** (BS EN ISO 772)

**05 21073 revetment**
**construction** (01) that compises one or more layers of material to protect a **slope** (01) against **erosion** (05 25010)

**05 21074 flexible revetment**
**revetment** (05 21073) that has an **armour layer** (05 22111) with sufficient flexibility to accommodate moderate **deformation** (01) while maintaining contact with the underlying **formation** (03 22043)

**05 21075 faggoting**
**fascine** (03 22016) **revetment** (05 21073) of **river** (BS EN ISO 772) **banks** (05 28001)

**05 21076 mattress**
layer of **material** (01) secured to a **bed** (05 22001) or **bank** (05 28001) to protect it from **scour** (05 25011)

**05 21077 dutch mattress**
**mattress** (05 21076) formed mainly of reeds

**05 21078 reno mattress**
**mattress** (05 21076) formed of **stones** (01) in a cage

**05 21079 gabion**
rectangular container made of wire or plastics mesh, filled with **stones** (01) and placed to form a retaining **wall** (01) or provide protection against **erosion** (05 25010)

**05 21080 groyne**
**wall** (01) or **embankment** (01) built out from the **shore** (05 29150) to reduce **littoral drift** (05 29162)

**05 21081 permeable groyne**
**groyne** (05 21080) with small gaps to allow some **beach** (05 29151) material to pass through

**05 21082 lighthouse**
**tower** (03 51005) that supports and protects a recognizable light signal at a known elevation that is radiated to serve as a guide and warning to ships at night

### 4.2 Parts (05 22xxx)

**05 22001 bed**
nominally horizontal or slightly sloping portion of a **watercourse** (01) or area of **ground** (01) under a body of water that is for most, or all, of the time covered by water

**05 22002 low flow channel**
part of a multistage **channel** (01) that carries **base flow** (05 29009)

**05 22003 two stage channel**
**channel** (01) in which normal flow is contained in the lower part of a wider main **channel** (01)

**05 22004 flood channel**
**channel** (01) that carries excess water during floods

**05 22005 flood channel**
**channel** (01) made in an **estuary** (BS EN ISO 772) by the rising **tide** (BS EN ISO 772)

**05 22006 ebb channel**
**channel** (01) made in an **estuary** (BS EN ISO 772) by the falling **tide** (BS EN ISO 772)

**05 22007 navigation channel**
**channel** (01) for **navigation** (05 29138)

**05 22008 training works**
**structure** (01) to direct or lead the flow along a **river** (BS EN ISO 772), or correct or improve the configuration of the **bed** (05 22001)

**05 22009 cutwater**
streamlined end of a **bridge pier** (01) that minimizes **turbulent flow** (05 19012) in passing water

**05 22010 retention board**
board used as a **weir** (01) in a small **watercourse** (01)

**05 22011 tidal sluice**
**structure** (01) to prevent tidal flow in an upstream direction whilst allowing flow in the downstream direction at **low water** (BS EN ISO 772)

**05 22012 tidal door**
hinged **gate** (05 12001) in a **tidal sluice** (05 22011) operated by flow of water

**05 22013 pointing door**
one of a pair of **mitre gates** (05 22020) in a **tidal sluice** (05 22011) operated by the flow of water

**05 22014 winding hole**
short section of **canal** (01) widened to allow **barges** (05 29144) to turn

**05 22015 canal lining**
impervious lining to a **canal** (01) to reduce leakage

**05 22016 lock gate**
**gate** (05 12001) to separate water in a **lock** (01) from that outside or to divide the **lock chamber** (05 22044) into two compartments

**05 22017 head gate**
upstream **gate** (05 12001) of a **lock** (01) or **conduit** (01)

**05 22018 tail gate**
downstream **gate** (05 12001) of a **lock** (01) or **conduit** (01)

**05 22019 sector gate**
one of a pair of **lock gates** (05 22016) consisting of a quarter section of a circle in **plan** (BS ISO 10209-1), that rotates about its centre and can withstand water pressure from either side

**05 22020 mitre gate**
one of a pair of **lock gates** (05 22016) that, when closed, meet at an obtuse angle so that the upstream water pressure assists in sealing the gate contact faces

**05 22021 lift gate**
**lock gate** (05 22016) that opens by rising vertically

**05 22022 lock paddle**
wicket
**sluice gate** (05 12077) that enables a **lock** (01) to be filled or emptied

**05 22023 gate paddle**
**lock paddle** (05 22022) installed in a **lock gate** (05 22016)

**05 22024 heel post**
vertical **frame** (01) member of a **lock gate** (05 22016) nearest to the **lock** (01) **wall** (01) and fitting into a **hollow quoin** (05 22038)

**05 22025 mitre post**
meeting vertical **frame** (01) member on a pair of **mitre gates** (05 22020)

**05 22026 spear post**
**post** (01) attached near the **mitre post** (05 22025) of a large **lock gate** (05 22016) with a wheel at the bottom running on curved track on the **gate platform** (05 22030)

**05 22027 balance beam**
horizontal **structural member** (01) that extends from the top edge of a **lock gate** (05 22016) to lever it open when water **levels** (01) are balanced

**05 22028 anchor and collar**
top hinge for **lock gate** (05 22016) that comprises a **plate** (01), with a hole to accommodate the **pintle** (05 22042), that is anchored into the **lock** (01) side

**05 22029 collar strap and anchor**
top hinge for **lock gate** (05 22016) that comprises a strap around the **heel post** (05 22024) that is anchored into the **lock** (01) side

**05 22030 gate platform**
floor of **gate chamber** (05 22045)

**05 22031 lock sill**
clap sill
raised part of the floor of a **lock** (01) next to the **head gates** (05 22017)

**05 22032 mitre sill**
**gate sill** (05 22135) for a **mitre gate** (05 22020)

**05 22033 gate recess**
recess provided in a side **wall** (01) of a **gate chamber** (05 22045) to receive a **lock gate** (05 22016) when it is opened

**05 22034 gate cylinder**
hydraulic cylinder used to open and close a **lock gate** (05 22016)

**05 22035 cylinder pit**
ram pit
**pit** (03 22011) at the side of a **lock** (01) that contains a **gate cylinder** (05 22034)

**05 22036 capstan pit**
**pit** (03 22011) at the side of a **lock** (01) that contains a **capstan** (05 22098) operating an underwater chain to open or close a **lock gate** (05 22016)

*NOTE Two are required per **lock gate** (05 22016).*

**05 22037 chain culvert**
underwater passage that connects a **lock** (01) and a **capstan pit** (05 22036) and contains a chain to open or close the **lock gate** (05 22016)

**05 22038 hollow quoin**
vertical groove in corner of a **gate recess** (05 22033) within which the **lock gate** (05 22016) rotates

**05 22039 paddle hole**
orifice, allowing water to pass into or out of a **lock** (01), where flow is controlled by **lock paddle** (05 22022)

**05 22040 paddle frame**
sluice frame
guide for a **lock paddle** (05 22022)

**05 22041 ground paddle**
**lock paddle** (05 22022) installed in a **culvert** (01) that bypasses the **lock gates** (05 22016)

**05 22042 pintle**
vertical pin mounting for a **lock gate** (05 22016)

**05 22043 pintle pot**
recessed bearing to receive a **pintle** (05 22042)

**05 22044 lock chamber**
lock bay
**space** (01) enclosed between the **gate chambers** (05 22045) of a **lock** (01)

**05 22045 gate chamber**
part of a **lock** (01) within which a **lock gate** (05 22016) or pair of **lock gates** (05 22016) operates

**05 22046 head bay**
part of a **lock** (01) upstream of the **gate chamber** (05 22045) of the **head gate** (05 22017)

**05 22047 tail bay**
part of a **lock** (01) downstream of the **gate chamber** (05 22045) of the **tail gate** (05 22018)

**05 22048 side pond**
storage **pond** (BS ISO 6107-6) connected to a **lock chamber** (05 22044) to reduce **lockage** (05 27002)

**05 22049 cope**
top edge of a **dock** (01) **wall** (01)

**05 22052 lock ladder**
**ladder** (BS EN 131-1) for boat crews in **lock chamber** (05 22044)

**05 22053 mooring ring**
ring on a **bank** (05 28001) or on **lock** (01) side to which craft are moored

**05 22054 clough**
**sluice gate** (05 12077) in a **culvert** (01)

**05 22055 sanitary station**
facility into which the **chemical closets** (07 42040) from a **canal** (01) boat are emptied

**05 22056 check**
**structure** (01) to control water **level** (01) in an **irrigation canal** (05 21014)

**05 22057 main line**
**pipe** (01) in **sprinkler irrigation** (05 29071) that conveys water under pressure from a source of supply to feed subsidiary **pipes** (01) or **sprinkler laterals** (05 22059)

**05 22058 lateral**
subsidiary **conduit** (01) that branches off a larger **conduit** (01)

**05 22059 sprinkler lateral**
**pipe** (01) that feeds **sprinklers** (01)

**05 22060 drain tile**
small diameter short earthenware **pipe** (01) with plain ends

**05 22061 tile drain**
length of **drain tiles** (05 22060) laid with **open joints** (11 42015) that forms a **land drain** (05 21021)

**05 22062 mole drain**
small circular **land drain** (05 21021) formed in **cohesive soil** (03 23005) by a **mole plough** (12 26029)

**05 22063 box drain**
small square or rectangular **drain** (01)

**05 22064 delph ditch**
**ditch** (05 22067), landward of **sea defence works** (05 21066), in which **overtopping** (05 29116) or **seepage** (05 19004) is collected

**05 22065 soak ditch**
**ditch** (05 22067) at toe of an **embankment** (01) or raised **river** (BS EN ISO 772) **bank** (05 28001) to collect **seepage** (05 19004) water and lower the **water table** (BS EN ISO 772) in the **embankment** (01)

**05 22066 counter drain**
**drain** (01) constructed along the **toe of dam** (05 12010) or **embankment** (01) to collect and remove **seepage** (05 19004) and so stabilize the **embankment** (01)

**05 22067 ditch**
**trench** (01) for **surface water** (01) **drainage** (01)

**05 22068 wet fence**
water-filled **ditch** (05 22067) used to confine animals

**05 22069 catchwater**
small **channel** (01) cut into the **ground** (01) on the uphill side of an **excavation** (01) to lead **run-off** (01) clear of it

**05 22070 catchwater**
**conduit** (01) to intercept water from an adjacent **catchment area** (BS ISO 6107-3) and divert it into an **impounding reservoir** (05 11001)

**05 22071 arterial drain**
large **watercourse** (01) in a **drainage system** (01) that takes water from subsidiary **watercourses** (01)

*NOTE Usually an artificial **watercourse** (01).*

**05 22072 rill way**
**channel** (01) in **foreshore** (05 29153) that carries flow from an **outfall** (05 11056)

**05 22073 cascade**
series of steps in the **invert** (05 32036) of a **drain** (01), **sewer** (01) or **channel** (01) to prevent excessive velocity

**05 22074 docking block**
one of a number of blocks to support the underside of the hull of a ship in a **dry dock** (01)

**05 22075 altar**
step in **wall** (01) of **dry dock** (01) for holding the feet of the **shores** (01) that steady a vessel when there is no water in the **dry dock** (01)

**05 22076 ship caisson**
sinkable floating box that closes the entrance to a **lock** (01), **dry dock** (01) or wet **dock** (05 21022)

**05 22077 sliding caisson**
partially buoyant **ship caisson** (05 22076), moved on rollers from a housing chamber

**05 22078 limpet dam**
leech
transportable open-topped working chamber with one side open, shaped to fit a **dock** (01) **wall** (01) that **seals** (11 14007) against the **wall** (01) as water is pumped from the enclosed **space** (01) to provide a dry working area

**05 22079 jetty head**
**platform** (06 52012) at the offshore end of a **jetty** (05 21028)

**05 22080 berthing line**
line of face of undeflected **fender** (05 22081) at a defined water **level** (01) on a **quay** (05 21026) or, where no **fenders** (05 22081) are present, on the face of the **quay** (05 21026) **wall** (01)

**05 22081 fender**
**energy** (01) absorbing device on the side of a vessel, vehicle or **shore** (05 29150) **structure** (01) for protection from damage due to impact

**05 22082 elastomeric fender unit**
**fender** (05 22081) formed of elastomeric material that absorbs the **energy** (01) of impact of a ship during berthing by elastic **deformation** (01)

**05 22083 pneumatic fender unit**
**fender** (05 22081), comprising an elastomeric container filled with air under pressure, that absorbs the **energy** (01) of impact of ships during berthing

**05 22084 hydraulic fender**
**fender** (05 22081) in which the **energy** (01) of impact during berthing is absorbed by a hydraulic device

**05 22085 non-recoiling fender**
**hydraulic fender** (05 22084) with a series of horizontally mounted **hydraulic jacks** (12 56028) that exert a **force** (01) against the hull of a ship through a **fender** (05 22081) face, counteracted by the mooring lines

**05 22086 floating fender**
**fender** (05 22081) that consists of floating **baulks** (BS EN 844-12), cylindrical bundles of **timber** (01) or elastomeric cylinders

**05 22087 hanging fender**
**fender** (05 22081) that comprises a **timber** (01) **frame** (01) suspended from a marine **structure** (01)

**05 22088 gravity fender**
**fender** (05 22081) that absorbs the **energy** (01) of impact during berthing by raising a suspended weight

**05 22089 rotating fender**
**fender** (05 22081) that comprises one or more pneumatic tyres or pneumatic cylinders that rotate on a vertical axis to facilitate movement of a ship along a **quay** (05 21026) or into a **dock** (01)

**05 22090 collapsible steel fender**
**fender** (05 22081) that consists of a corrugated steel **tube** (01) that absorbs excessive **energy** (01) of impact during berthing by plastic **deformation** (01)

**05 22091 spring fender**
**fender** (05 22081) in which steel springs are used

*NOTE Usually as the top support for fender **piles** (05 22094) acting as propped **cantilevers** (01).*

**05 22092 brushwood fender**
**floating fender** (05 22086) of bundles of **brushwood** (06 12114)

**05 22093 buoyant fender**
**fender** (05 22081), anchored to the **sea** (BS ISO 6107-2) **bed** (05 22001), that floats in front of a **quay** (05 21026) face and that is forced backwards and downwards during berthing

**05 22094 fender pile**
**pile** (01) installed in front of a marine **structure** (01) to act as a **fender** (05 22081)

**05 22095 rubbing strip**
replaceable hardwearing abrasion-resistant facing **strip** (01) on the side of a vessel or **quay** (05 21026)

**05 22096 roundhead**
rounded enlargement at the end of a **breakwater** (01) or rounded end to a **dock** (01) entrance **wall** (01) to reduce adverse effects of flow past it

**05 22097 fairlead**
guide to change the direction of a **rope** (01) without causing damage

**05 22098 capstan**
machine that has a vertically mounted concave sided drum on which a **rope** (01) may be wound under power but not stored

**05 22099 jacket**
support **structure** (01) of a steel **production platform** (05 21062) below the **topsides** (05 22100)

**05 22100 topsides**
operating equipment and accommodation supported above the **sea** (BS ISO 6107-2) on an **offshore structure (**05 21054)

**05 22101 offshore module**
part of an offshore facility completed on **land** (01) and installed in an **offshore structure** (05 21054) in a single lift

**05 22102 drilling template**
steel **structure** (01) on the **sea** (BS ISO 6107-2) **bed** (05 22001) that enables a number of directional **wells** (05 21002) to be drilled from a **semi-submersible structure** (05 21059) or **jack-up structure** (05 21058)

**05 22103 spud**
one of a number of retractable vertical steel legs on a vessel that can be lowered to the **river** (BS EN ISO 772) or **sea** (BS ISO 6107-2) **bed** (05 22001) to serve as an anchorage or support

**05 22104 spud can**
**pad foundation** (03 32006) fixed to a **spud** (05 22103) at or near the bottom

**05 22105 wave protection**
**material (**01) applied to a **bank** (05 28001) or **shore** (05 29150) in the zone of **wave** (05 29002) **action** (01) to prevent **erosion** (05 25010)

**05 22106 armour unit**
large **stone** (01) or **concrete** (01) unit for primary **wave protection** (05 22105)

**05 22107 concrete armour unit**
**armour unit** (05 22106) of **concrete** (01) placed with others on a **slope** (01) to form a layer

**05 22108 wave screen**
pierced **wall** (01) on a **foreshore** (05 29153) to reduce **wave** (05 29002) activity on the protected side

**05 22109 wave wall**
**wall** (01) the face of which is curved in vertical cross-section to throw back water from **wave** (05 29002) **action** (01)

**05 22110 wave deflector**
**structure** (01) to deflect, reflect or suppress incoming **waves** (05 29002)

**05 22111 armour layer**
cover layer
hard outer layer in a **revetment** (05 21073)

**05 22113 apron**
hard surface or layer of **material** (01) placed adjacent to a **structure** (01) or on a **bank** (05 28001) or **bed** (05 22001), to prevent **scour** (05 25011)

**05 22114 falling apron**
**apron** (05 22113) of **rip-rap** (05 21070) that falls and continues to cover the **slope** (01) as **scour** (05 25011) takes place

**05 22115 ice apron**
ramp on the upstream side of a **bridge pier** (01) that **slopes** (01) up from below water **level** (01) to lift and break ice

**05 22116 breast work**
**wall** (01) parallel and close to the crest of a **shingle** (05 23001) **bank** (05 28001) to prevent **erosion** (05 25010)

**05 22117 kidding**
short, vertical **fascines** (03 22016) that encourage **accretion** (05 25002) of **sand** (BS EN 12670) on **sand dunes** (05 29156)

**05 22118 sand fence**
**cleft chestnut fence** (06 12015) supported on **posts** (01), erected in **sand dunes** (05 29156) to catch wind-borne **sand** (BS EN 12670)

**05 22119 bagwork**
**bank protection** (05 21069) in which sandbags filled with **concrete** (01) or **gravel** (03 23029) are placed by hand

**05 22120 back boarding**
camp sheeting
**timber** (01) planks behind **piles** (01) to support the bottom of **river** (BS EN ISO 772) **banks** (05 28001)

**05 22121 beach recharge**
granular **material** (01) taken from another location to refill a depleted **beach** (05 29151)

**05 22122 counter wall**
**wall** (01) or **embankment** (01) that provides a second line of sea defence some way inland from the main **sea defence works** (05 21066)

**05 22123 floodgate**
**gate** (05 12001) in a **channel** (01) to control **tidal water** (BS ISO 6107-7) or release flood water

**05 22124 floodgate**
**gate** (05 12001) in a **flood defence works** (05 21068) or **sea defence works** (05 21066) that closes an access opening

**05 22125 fairway**
main navigable **channel** (01) in or near a **port** (05 21025) or **harbour** (05 21001)

**05 22126 beacon**
warning cage or other marker mounted on a pole at the end of an obstruction on a coast

**05 22127 perch**
slender **stake** (BS EN 844-12) used to mark the navigable **channel** (01) through a creek

**05 22128 lift**
**hoist** (12 36026) for raising or lowering vessels between **waterways** (05 22131) at different **levels** (01)

**05 22129 shiplift**
**platform** (06 52012) **structure** (01) capable of being lowered under water and lifting a vessel out of the water by means of **winches** (12 36023) or **jacks** (12 36035)

**05 22130 inclined plane**
device whereby a vessel is raised or lowered on a **slope** (01) from one **waterway** (05 22131) to another

**05 22131 waterway**
**channel** (01) for **navigation** (05 29138)

**05 22132 halphyte**
**plant** (06 12001) that has adapted to saline conditions and is capable of colonizing **mud flats** (05 29154)

**05 22133 marram grass**
**grass** (06 12057) that thrives in a coastal **environment** (01) and binds **sand dunes** (05 29156) with its extensive **root** (06 12079) system

**05 22134 bywash channel**
**channel** (01) constructed to pass surplus water around a **lock** (01)

**05 22135 gate sill**
raised **beam** (01) or step on a **gate platform** (05 22030) against which **lock gates** (05 22016) seal

**05 22136 harbour resonance**
**wave** (05 29002) resonance that occurs in a **harbour** (05 21001) when reflections of certain **wave lengths** (BS 6349-1) reinforce and amplify the incident **wave** (BS 6349-1) pattern

### 4.3 Materials (05 23xxx)

**05 23001 shingle**
**stones** (01) of roughly uniform **size** (01) that have become smooth or rounded by **wave** (05 29002) **action** (01)

### 4.4 Activities (05 24xxx)

**05 24001 pen**
form a **pen** (05 29046)

**05 24002 brush**
cut and remove **weed** (06 14064) and **brushwood** (06 12114) growth in a **watercourse** (01)

**05 24003 canalization**
division of a **river** (BS EN ISO 772) into **reaches** (BS EN ISO 772) by the introduction of control **structures** (01) to enable it to function as a **canal** (01)

*NOTE Typical control **structures** (01) are **weirs** (01) or **locks** (01).*

**05 24004 wave forecasting**
estimation of future **wave** (05 29002) **characteristics** (01)

**05 24005 wave hindcasting**
calculation of **wave** (05 29002) **characteristics** (01) that probably occurred at some time in the past

**05 24006 shore protection**
**civil engineering works** (01) for the protection of **sea** (BS ISO 6107-2) **shore** (05 29150) against **scour** (05 25011)

**05 24007 beach bumping**
process of restoring the crest of a **shingle** (05 23001) **bank** (05 28001) using **materials** (01) from the **foreshore** (05 29153)

**05 24008 dredge**
**excavation** (01) below water **level** (01) in a **river** (BS EN ISO 772), **lake** (BS ISO 6107-2) or **sea** (BS ISO 6107-2)

**05 24009 agitation dredging**
process of lifting **sediment** (BS EN 772) from the **sea** (BS ISO 6107-2) **bed** (05 22001) and into suspension for dispersion by local **currents** (BS EN ISO 772)

**05 24010 step**
place a **lock gate** (05 22016) in position on its **pintle** (05 22042)

**05 24011 rack**
**seal** (11 14007) **joints** (01) between **stop logs** (05 12070) by introducing fine **material** (01) in suspension into the water immediately upstream

### 4.5 Processes (05 25xxx)

**05 25001 leaching**
removal of soluble constituents from **soil** (01) or other material by percolating liquid

**05 25002 accretion**
process of accumulation by flowing water of **sediment** (BS EN 772)

**05 25003 shoreline retrogression**
continuing landward movement of the **foreshore** (05 29153)

**05 25004 beach steepening**
increase in the **slope** (01) of a **beach** (05 29151) under the **action** (01) of storm **waves** (05 29002) that produce an onshore migration of material from the **surf zone** (05 29152)

*NOTE In the UK this usually occurs in summer.*

**05 25005 beach flattening**
decrease in the **slope** (01) of a **beach** (05 29151) under the **action** (01) of storm **waves** (05 29002) that produce an onshore migration of material from the **surf zone** (05 29152)

*NOTE In the UK this usually occurs in winter.*

**05 25006 storm ridge**
high ridge of **shingle** (05 23001) formed by storms

**05 25007 under run**
**shingle** (05 23001) or **sand** (BS EN 12670) that leaks under a **groyne** (05 21080) from the **updrift** (05 29165) side to the **downdrift** (05 29164) side

**05 25008 wash-out**
loss of fine material from behind a deteriorated **embankment** (01), **revetment** (05 21073), **sea wall** (05 21067) or **river** (BS EN ISO 772) **wall** (01) due to the **action** (01) of **currents** (BS EN ISO 772), **waves** (05 29002) or **tides** (BS EN ISO 772)

**05 25009 breach**
gap in an **embankment** (01) or **dam** (01), caused by **failure** (11 17012) that could allow water to flow through it

**05 25010 erosion**
removal of material by the **action** (01) of wind, flowing water or **waves** (05 29002)

**05 25011 scour**
**erosion** (05 25010) by flowing water

**05 25012 flooding**
intrusion of water on **land** (01) not intended (or not usually intended) to be covered with or subject to overflows of water

**05 25013 silting**
deposition of fine waterborne particles onto a **bed** (05 22001)

### 4.6 Plant, equipment and documentation (05 26xxx)

**05 26001 mass diagram**
graph that shows cumulative flow quantities such as the integration of a time-flow curve

**05 26002 wave energy spectrum**
graph that shows the distribution of **wave** (05 29002) **energy** (01) as a function of **wave period** (BS 6349-1) or frequency

### 4.7 Properties (05 27xxx)

**05 27001 lift**
vertical distance that a vessel is raised or lowered when passing through a **lock** (01)

**05 27002 lockage**
volume of water transferred from the upper to the lower level of a **canal** (01) or **river** (BS EN ISO 772) when lowering the water in a **lock** (01)

**05 27003 lift**
**height** (01) through which liquid is raised

### 4.8 Spaces (05 28xxx)

**05 28001 bank**
**strip** (01) of **land** (01) that forms the edge of a **river** (BS EN ISO 772), **canal** (01) or **reservoir** (01)

**05 28002 sewage catchment**
area of **land** (01) that drains to a single **sewage treatment works** (05 31001) or **outfall** (05 11056)

**05 28003 subcatchment area**
part of a **catchment area** (BS ISO 6107-3)

**05 28004 flood retention area**
area of **land** (01) to impound water from **river** (BS EN ISO 772) flood flow in excess of the downstream capacity

**05 28005 flood plain**
area of **land** (01) bordering a **river** (BS EN ISO 772) that is partly or wholly covered with water during floods

**05 28006 washland**
low **land** (01) adjacent to a **river** (BS EN ISO 772) or **drain** (01) for storage of flood water

**05 28007 salting**
outmarsh
area of **land** (01), supporting vegetation, periodically covered by saline water

**05 28008 barge bed**
place where **barges** (05 29144) can moor and rest on a soft **bed** (05 22001) at **low water** (BS EN ISO 772) near the **bank** (05 28001) of a **river** (BS EN ISO 772)

**05 28009 pound**
stretch of water between two successive **locks** (01) on a **canal** (01)

**05 28010 summit canal**
**pound** (05 28009) at a summit on a **canal** (01) that requires an artificial water supply

**05 28011 offside**
**bank** (05 28001) of **canal** (01) without a **towpath** (04 11031)

**05 28012 level**
**land drainage** (01) district, **drainage area** (BS ISO 6107-3) or lowland area in **river** (BS EN ISO 772) valley or **fen** (05 28013) capable of being managed as one unit

**05 28013 fen**
low **land** (01) that is below **high water** (BS EN ISO 772) or needs special **drainage** (01), and requires adjustment to water **levels** (01) on a seasonal basis

**05 28014 marsh**
low-lying flat **land** (01) formed by natural **accretion** (05 25002) that is either wet and soft or needs **land drainage** (01) for agricultural use

**05 28015 inning**
**land** (01) reclaimed from **sea** (BS ISO 6107-2) or **marsh** (05 28014)

**05 28016 swash zone**
area on which **swash** (05 29113) occurs

**05 28017 splash zone**
area of a **structure** (01) that is subject to intermittent wetting and drying due to **waves** (05 29002) and **tides** (BS EN ISO 772)

**05 28018 external submerged zone**
external part of an **offshore structure** (05 21054) below the **splash zone** (05 28017)

**05 28019 internal submerged zone**
internal part of an **offshore structure** (05 21054) in contact with oil or **sea** (BS ISO 6107-2) water

**05 28020 external atmospheric zone**
external part of an **offshore structure** (05 21054) above the **splash zone** (05 28017)

**05 28021 internal atmospheric zone**
internal part of an **offshore structure** (05 21054) above the **internal submerged zone** (05 28019)

### 4.9 Miscellaneous (05 29xxx)

**05 29001 precipitation**
water derived from atmospheric vapour and deposited on a surface

**05 29002 wave**
oscillation of water **level** (01) propagated along the surface

**05 29004 rainfall**
amount of **precipitation** (05 29001) expressed as a **depth** (01)

*NOTE Usually relates to a particular period, e.g. day.*

**05 29006 isohyet**
line on a map joining places with equal **rainfall** (05 29004)

**05 29007 interception**
process by which **precipitation** (05 29001) is retained by and later evaporated from a **structure** (01) or vegetation and is thus prevented from reaching the **ground** (01)

**05 29008 snow melt**
**run-off** (01) due to melting snow

**05 29009 base flow**
that part of the **discharge** (BS EN ISO 772) in a **watercourse** (01) not directly derived from **run-off** (01)

**05 29010 design storm**
rainstorm parameters adopted for the design of a hydraulic **structure** (01)

**05 29011 design flood**
flood parameters adopted for the design of a hydraulic **structure** (01)

**05 29012 spate**
freshet
sudden short-lived increase in **discharge** (BS EN ISO 772)

**05 29013 watershed**
boundary between **catchment areas** (BS ISO 6107-3)

**05 29014 coastal lagoon**
shallow body of water close to the **sea** (BS ISO 6107-2)

*NOTE Usually with a shallow restricted inlet from the **sea** (BS ISO 6107-2).*

**05 29015 unit hydrograph**
theoretical **hydrograph** (05 16001) that would result from a storm of unit **rainfall intensity** (BS EN 752-4)

**05 29017 soil water**
water present in a **soil belt** (05 29018)

**05 29018 soil belt**
upper **soil** (01) layer, constantly affected by **evapo-transpiration** (BS ISO 6107-8), that is partially saturated with percolating water

**05 29019 intermediate water**
water present in an **intermediate belt** (05 29020)

**05 29020 intermediate belt**
partially saturated **soil** (01) layer between **soil belt** (05 29018) and **capillary fringe** (05 29022)

**05 29021 capillary water**
water held in the **capillary fringe** (05 29022)

**05 29022 capillary fringe**
**soil** (01) layer above **water table** (BS ISO 6107-3) in which water is raised by **capillarity** (05 29166)

**05 29023 held water**
vadose water
**pellicular water** (05 29030), gravitational and **capillary water** (05 29021) suspended in partially sealed interstices in the **aeration zone** (05 29024)

**05 29024 aeration zone**
zone between **ground** (01) surface and **water table** (BS ISO 6107-3)

**05 29025 saturation zone**
zone below **water table** (BS ISO 6107-3) and above **rock flow zone** (05 29028) throughout which all **fissures** (BS EN 12670) are filled with water under **hydrostatic pressure** (05 47004)

**05 29026 free water**
**ground water** (BS ISO 6107-1) in interconnected interstices in **saturation zone** (05 29025), that extends down to the first impervious **barrier** (01) and moves under the influence of gravity in the direction of the **slope** (01) of the **water table** (BS ISO 6107-3)

**05 29027 internal water**
water present in **rock flow zone** (05 29028)

**05 29028 rock flow zone**
zone of the earth's crust into which water cannot permeate and below the upper limit of which water cannot exist in a free state since all interstices have been closed by plastic flow of the **rock** (03 23027)

**05 29029 hydroscopic water**
water in **soil** (01) that is in equilibrium with atmospheric water vapour pressure and that is essentially water in which attraction between water molecules can hold against evaporation

**05 29030 pellicular water**
adhesive water
water retained in **soil** (01) by attraction between water and **soil** (01) molecules and that form a **coat** (01) around the particles and that may move from one particle to another

**05 29031 phreatic water**
surface to which **ground water** (BS ISO 6107-1) would rise in an open ended **pipe** (01)

**05 29032 phreatic surface**
surface to which **ground water** (BS ISO 6107-1) would rise in an open ended **pipe** (01)

**05 29033 phreatic zone**
zone below the **phreatic surface** (05 29032)

**05 29034 recharge**
flow of water to **ground water** (BS ISO 6107-1) storage from **precipitation** (05 29001), **infiltration** (BS ISO 6107-5) from surface **streams** (BS ISO 6107-2) and other sources

**05 29035 underflow**
**ground water** (BS ISO 6107-1) movement in an **aquifer** (BS ISO 6107-3)

**05 29036 specific yield**
ratio of the volume of water yielded by unit volume of permeable **rock** (03 23027) or **soil** (01) when drained by gravity under specified conditions after being saturated to unit volume

**05 29037 specific retention**
ratio of the volume of water retained against gravity by unit volume of **rock** (03 23027) or **soil** (01) that has been saturated and allowed to drain completely to a remote body of mobile water by way of continuous **capillary interstices** (05 29167) to unit volume

**05 29038 specific storage**
ratio of the volume of water that unit volume of a vertical column of an **aquifer** (BS ISO 6107-3) releases from storage as the **head** (01) within the column declines unit distance to unit volume

**05 29039 storage coefficient**
ratio of the volume of water that the vertical column of an **aquifer** (BS ISO 6107-3) of unit cross-sectional area releases from storage as the **head** (01) within the column declines unit distance to unit volume

**05 29040 water cycle**
complete natural cycle of water circulation from the atmosphere to the earth and returns to the atmosphere through various stages or processes such as **precipitation** (05 29001), **run-off** (01) and evaporation

**05 29041 safe yield**
maximum rate at which water may be extracted from an **aquifer** (BS ISO 6107-3) over a period without depleting the supply or causing a deterioration in **quality** (01)

**05 29042 rain gauge**
**precipitation** (05 29001) **measuring instrument** (BS 6953)

**05 29043 route flood**
determine, at successive points along a **river** (BS EN ISO 772), the timing and form of the **hydrograph** (05 16001) of a flood

**05 29044 transmissivity**
rate of flow of **ground water** (BS ISO 6107-1) through a vertical **strip** (01) of unit **width** (01) of an **aquifer** (BS ISO 6107-3), the **strip** (01) extending the full saturated **depth** (01), under unit **hydraulic gradient** (01) at a fixed temperature

**05 29045 creek**
small inlet on a coast or **estuary** (BS EN ISO 772)

**05 29046 pen**
stretch of water between successive **weirs** (01) or **locks** (01)

**05 29047 headwater**
source of upper **reach** (BS EN ISO 772) of a **stream** (BS EN ISO 772) or **river** (BS EN ISO 772)

**05 29048 regime**
dynamic equilibrium between **accretion** (05 25002) and **erosion** (06 25010) in an **open channel** (BS EN ISO 772) system or a coastal **environment** (01) where the balance existing between the two may vary over a time span from days to tens or even hundreds of years

**05 29049 bar**
**silt** (03 23028), **sand** (BS EN 12670) or **shingle** (05 23001) deposit at a **river** (BS EN ISO 772) mouth

*NOTE Usually across the **channel** (01).*

**05 29050 riparian right**
legal right of a **riparian owner** (05 29051), concerning the **river** (BS EN ISO 772)

**05 29051 riparian owner**
person who owns at least part of one **river** (BS EN ISO 772) **bank** (05 28001)

**05 29052 main river**
length of **river** (BS EN ISO 772) so designated by statute

**05 29053 enmain**
adopt a length of **river** (BS EN ISO 772) as a **main river** (05 29052)

**05 29054 flow duration curve**
graph that shows the frequency with which the **discharge** (BS EN ISO 772) from a **watercourse** (01) is equalled or exceeded during a given period

**05 29055 headwater**
water from the upper **reaches** (BS EN ISO 772) of a **stream** (BS EN ISO 772) near its source

**05 29056 camp shedding**
protection on the **bed** (05 22001) of **tidal waterway** (BS EN ISO 772) to enable a vessel to rest safely at **low water** (BS EN ISO 772)

**05 29057 blockage factor**
proportion of water cross-section of a navigational **canal** (01) obstructed by the hull of a moving vessel

**05 29058 squat**
phenomenon whereby a moving vessel rises at the bow and goes down at the stern

**05 29059 continuous flow irrigation**
method of delivering **irrigation water** (BS ISO 6107-2) by which each piece of apparatus receives its allotted quantity of water at a continuous rate

**05 29060 supplemental irrigation**
**irrigation** (01) whereby **irrigation water** (BS ISO 6107-2) is supplied for comparatively short and irregular periods of drought during the **crop** (06 12094) growing season so as to overcome the shortage of **soil** (01) moisture

**05 29061 pumped irrigation**
**irrigation** (01) in which **irrigation water** (BS ISO 6107-2) is delivered by pumping through **pipes** (01)

**05 29062 gravity irrigation**
**irrigation** (01) in which the supply of **irrigation water** (BS ISO 6107-2) is sustained by gravity alone

**05 29063 lift irrigation**
**gravity irrigation** (05 29062) in which the **irrigation water** (BS ISO 6107-2) is lifted first

**05 29064 surface irrigation**
**irrigation** (01) in which **irrigation water** (BS ISO 6107-2) is directed across the **land** (01) surface

**05 29065 flood irrigation**
**irrigation** (01) in which **irrigation water** (BS ISO 6107-2) is made to cover the surface of the **land** (01) to such a **depth** (01) as to cause **saturation** (11 27057) for a considerable time

**05 29066 border irrigation**
**flood irrigation** (05 29065) in which **land** (01) is divided into **strips** (01) and **irrigation water** (BS ISO 6107-2) is delivered into each **strip** (01) from an **irrigation canal** (05 21014)

**05 29067 check irrigation**
**flood irrigation** (05 29065) in which fields are divided into rectangles by low **bunds** (01)

**05 29068 basin irrigation**
**surface irrigation** (05 29064) of orchards by which each area or group of **trees** (06 12036) is surrounded by a **bund** (01)

**05 29069 spate irrigation**
**surface irrigation** (05 29064) for which diversion **embankments** (01) are constructed across normally dry **watercourses** (01) to divert **spate** (05 29012) water into **canals** (01) leading to fields surrounded by **bunds** (01) where the water forms **ponds** (BS ISO 6107-6) until absorbed

**05 29070 furrow irrigation**
**surface irrigation** (05 29064) in which **irrigation water** (BS ISO 6107-2) is run in furrows between **crops** (06 12094)

**05 29071 sprinkler irrigation**
**irrigation** (01) in which **irrigation water** (BS ISO 6107-2) is carried in **pipes** (01) and distributed like rain by **sprinklers** (01)

**05 29072 sub-irrigation**
**irrigation** (01) in which **irrigation water** (BS ISO 6107-2) is applied below the surface of the **ground** (01)

**05 29073 gross irrigable area**
gross area to be irrigated less areas unsuitable for **irrigation** (01), either due to the nature of the **soil** (01) or because the **ground** (01) is too high

**05 29074 duty**
relation between area irrigated or to be irrigated and quantity of water used or required, expressed as a **depth** (01)

**05 29075 command**
**height** (01) of water **level** (01) in an **irrigation canal** (05 21014) at an outlet or turnout site above the general **level** (01) of the **land** (01) in the area to be irrigated from that outlet

**05 29076 field command**
difference in water **level** (01) in an **irrigation canal** (05 21014) and the **level** (01) of the highest point of the parcel of **land** (01) irrigated

**05 29077 farm losses**
losses of water on a farm due to uneven distribution, poor handling and percolation into the **subsoil** (06 13002) due to excessive **irrigation** (01)

**05 29078 irrigation efficiency**
ratio of **irrigation water** (BS ISO 6107-2) consumed by **crops** (06 12094) to water diverted from the source of supply

**05 29079 water requirement**
quantity of water from all sources required for **crop** (06 12094) production

**05 29080 irrigation requirement**
quantity of irrigated water required for **crop** (06 12094) production

**05 29081 consumptive use**
quantity of water that arises from **evapo-transpiration** (BS ISO 6107-8) from irrigated areas

**05 29082 land reclamation**
exclusion of the **sea** (BS ISO 6107-2), or other mass of water, from areas that were previously submerged, or subject to inundation, often by raising the **level** (01) of the **land** (01)

**05 29083 wastage**
lowering of **ground level** (01) that results from the **drainage** (01) of **peat** (03 23003)

**05 29084 tide locked**
situation where the outflow from a **pipe** (01) or **channel** (01) is prevented by the **level** (01) of the **tide** (BS EN ISO 772)

**05 29085 open channel flow**
water flow with a free surface through a **conduit** (01)

**05 29086 lead-in dolphin**
**dolphin** (01) to guide a vessel

**05 29087 wave amplitude**
half the **wave height** (BS 6349-1)

**05 29088 wave steepness**
ratio of **wave height** (BS 6349-1) to **wave length** (BS 6349-1)

**05 29089 incident wave**
incoming **wave** (05 29002) with reference to a **shore** (05 29150) or **structure** (01)

**05 29090 reflected wave**
**wave** (05 29002) that is returned seaward when an **incident wave** (05 29089) impinges on a steep or vertical surface

**05 29091 coefficient of reflection**
ratio of the **wave height** (BS 6349-1) of a **reflected wave** (05 29090) to the **wave height** (BS 6349-1) of the **incident wave** (05 29089)

**05 29092 wave group**
series of **waves** (05 29002) in which direction, **wave length** (BS 6349-1) and **wave height** (BS 6349-1) vary only slightly

**05 29093 monochromatic waves**
series of **waves** (05 29002), each of which has the same **wave length (**BS 6349-1) and **wave period** (BS 6349-1)

**05 29094 random waves**
**waves** (05 29002) of varying **wave height** (BS 6349-1) and **wave length** (BS 6349-1) as they occur in the **sea** (BS ISO 6107-2)

**05 29095 non-breaking wave**
stable **wave** (05 29002)

**05 29096 breaking wave**
**wave** (05 29002) that has reached a condition of instability

**05 29097 broken wave**
**wave** (05 29002) that has become unstable and has broken

**05 29098 swell**
**waves** (05 29002) generated by winds remote from a location

**05 29099 wake**
recurring eddies downstream of an obstacle or moving vessel

**05 29100 bore**
eagre
**wave** (05 29002) that has a nearly vertical front advancing upstream from in some **estuaries** (BS EN ISO 772) and that results from a rising **tide** (BS EN ISO 772)

**05 29101 tsunami**
**wave** (05 29002) caused by an earthquake or eruption of the **sea** (BS ISO 6107-2) **bed** (05 22001)

**05 29102 still water level**
**level** (01) that the surface of the water would assume if all wind and **wave** (05 29002) **action** (01) were absent at a pressure of 1 bar

**05 29103 relative depth**
ratio of water **depth** (01) to **wave length** (BS 6349-1)

**05 29104 shallow water**
water of **relative depth** (05 29103) below 0.05, in which **wave** (05 29002) **characteristics** (01) are determined by water **depth** (01)

**05 29105 intermediate water**
water of **relative depth** (05 29103) between 0.05 and 0.5

**05 29106 deep water**
water of **relative depth** (05 29103) greater than 0.5, in which **depth** (01) has no effect on **wave** (05 29002) **characteristics** (01)

**05 29107 fetch length**
distance, uninterrupted by **land** (01), over which wind-generated **waves** (05 29002) are formed

**05 29108 fetch**
area in which **wave**s (05 29002) are generated

**05 29111 interference peak**
**wave** (05 29002) peak caused when two **waves** (05 29002) meet each other obliquely

**05 29112 wave shoaling**
change in **wave length** (BS 6349-1) in **shallow water** (05 29104) due to variations of **depth** (01)

**05 29113 swash**
up-rush
rush of water up a **beach** (05 29151) or other sloping **structure** (01) as a result of **wave** (05 29002) **action** (01)

**05 29114 swash run-up**
difference between **swash height** (05 29115) and **still water level** (05 29102)

**05 29115 swash height**
maximum **height** (01) of **swash** (05 29113)

**05 29116 overtopping**
water that passes over the top of a **structure** (01) as a result of **wave** (05 29002) **action** (01) or an abnormally **high water** (BS EN ISO 772) **level** (01)

**05 29117 tidal stream**
**current** (BS EN ISO 772) in the **sea** (BS ISO 6107-2) caused by **tides** (BS EN ISO 772)

**05 29118 non-tidal current**
**current** (BS EN ISO 772) in the **sea** (BS ISO 6107-2) other than **tidal stream** (05 29117)

**05 29119 wind stress current**
**non-tidal current** (05 29118) generated by wind

**05 29120 surge current**
**non-tidal current** (05 29118) resulting from **storm surge** (05 29127)

**05 29121 predicted tide**
**tide** (BS EN ISO 772) conditions or **characteristics** (01) predicted to occur under average meteorological conditions

**05 29122 equinoctial tides**
highest **tides** (BS EN ISO 772) of the year occurring at the spring or autumn equinox

**05 29123 set**
direction of **tidal stream (**05 29117) at a particular time, commonly related to **high water** (BS EN ISO 772) in coastal areas

**05 29124 mean tide level**
**level** (01) midway between mean **low water** (BS EN ISO 772) **level** (01) and mean **high water** (BS EN ISO 772) **level** (01)

**05 29125 chart datum**
**level** (01) to which soundings or elevation of **tides** (BS EN ISO 772) are referred, on a stated chart or group of charts

*NOTE Usually the lowest **astronomical tide** (BS 6349-1).*

**05 29126 forecast tide**
water **level** (01) in a **tidal cycle** (BS EN ISO 772) that is forecast to occur under predicted meteorological conditions

**05 29127 storm surge**
difference between actual and predicted water **levels** (01) due to meteorological effects

**05 29128 surge residual**
**storm surge** (05 29127) at **high water** (BS EN ISO 772)

**05 29129 wave setup**
superelevation of water surface over its normal elevation due to **wave** (05 29002) **action** (01) alone

**05 29130 wind setup**
superelevation of water surface over its normal elevation due to wind **action** (01) alone

**05 29131 sea fastening**
means of restraining **structures** (01), **offshore modules** (05 22101) or packages on a **barge** (05 29144) or **pontoon** (05 29149) during transportation

**05 29132 wave recorder**
device for recording physical **characteristics** (01) of **waves** (05 29002)

*NOTE* ***Characteristics*** *(01) recorded include* ***wave height*** *(BS 6349-1) and* ***wave period*** *(BS 6349-1).*

**05 29133 spending beach**
**beach** (05 29151) for absorbing **wave** (05 29002) **energy** (01)

**05 29134 saturation pH**
calculated **pH** (05 29168) that would be obtained if water were in equilibrium with solid calcium carbonate

**05 29138 navigation**
act or art of directing the movement of vehicles or vessels

**05 29139 draught**
**depth** (01) from the water line to the deepest point on a vessel

**05 29140 air draught**
**height** (01) from the water line to the highest point on a vessel

**05 29141 sea mark**
prominent **structure** (01) or **sign** (01) on **land** (01) provided solely to assist **navigation** (05 29138)

**05 29142 land mark**
conspicuous **structure** (01) on **land** (01) that is of assistance to **navigation** (05 29138)

**05 29143 lead line**
flexible line attached to a lead or steel weight and marked into divisions or lengths

**05 29144 barge**
vessel of shallow **draught** (05 29139) for carrying cargo on **waterways** (05 22131)

**05 29145 dumb barge**
**barge** (05 29144) without an engine

**05 29146 butty**
**dumb barge** (05 29145) towed on a **canal** (01) by a **barge** (05 29144) with an engine

**05 29147 narrow boat**
vessel for use on narrow **canals** (01)

**05 29148 flat**
shallow **pontoon** (05 29149) for carrying out **maintenance** (01) on inland waters

**05 29149 pontoon**
vessel for carrying **plant** (01) or **materials** (01) or the parts of a **floating bridge** (01)

*NOTE Usually flat-bottomed.*

**05 29150 shore**
**strip** (01) of **land** (01) at the edge of a body of water

**05 29151 beach**
**shore** (05 29150) of **sand** (BS EN 12670) or **shingle** (05 23001)

**05 29152 surf zone**
area between the outermost **breaking wave** (05 29096) and the **swash height** (05 29115)

**05 29153 foreshore**
part of the **shore** (05 29150) between **low water** (BS EN ISO 772) and **high water** (BS EN ISO 772)

**05 29154 mud flat**
**foreshore** (05 29153) of mud

**05 29155 wrack line**
line of debris following **flooding** (05 25012) or **high water** (BS EN ISO 772) that indicates the highest water **levels** (01) reached

**05 29156 sand dune**
hillock of wind-blown **sand** (BS EN 12670)

**05 29157 on-bed sediment transport**
**sediment transport** (BS EN ISO 772) in which particles remain in contact with the **bed** (05 22001) and are rolled along

**05 29158 saltation**
**sediment transport** (BS EN ISO 772) in which particles remain close to the **bed** (05 22001) and are bounced along

**05 29159 transport in suspension**
**sediment transport** (BS EN ISO 772) in which particles have been carried away from the **bed** (05 22001) into suspension

**05 29160 competence of stream**
ability of a **watercourse** (01) to carry material

**05 29162 littoral drift**
**sediment transport (**BS EN ISO 772) by **waves** (05 29002) and **currents** (BS EN ISO 772) in a direction parallel to the **shore** (05 29150)

**05 29163 longshore transport**
**sediment transport** (BS EN ISO 772) due to **waves** (05 29002) breaking obliquely to the **shore** (05 29150)

**05 29164 downdrift**
**littoral drift** (05 29162) in the direction of predominant movement

**05 29165 updrift**
**littoral drift** (05 29162) in the direction opposite to the predominant movement

**05 29166 capillarity**
ability of fine bore tubes or channels within or between **materials** (01) to raise a liquid within them by surface tension

**05 29167 capillary interstice**
opening small enough to have the ability to raise a liquid by **capillarity** (05 29166)

**05 29168 pH**
**measure** (01) of the **acidity** (01) or **alkalinity** (01) of a solution expressed as the logarithm of the reciprocal of the hydrogen ion **concentration** (01)

*NOTE Distilled water has a **pH** (05 29168) value of 7, the neutral point; all values above 7 indicate the presence of alkalis, and all below indicate acids.*

# 5 Public health and environmental engineering (05 3xxxx)

## 5.1 Works (05 31xxx)

**05 31001 sewage treatment works**
**structures** (01), **buildings** (01) and plant for treatment of **sewage** (BS ISO 6107-1)

**05 31002 sewage treatment package plant**
self-contained prefabricated installation for treatment of **sewage** (BS ISO 6107-1)

**05 31003 bulk water supply**
supply of water through a meter by a water undertaker, to a **water distribution system** (05 31005) for which that undertaker is not responsible

**05 31004 water main**
**pipeline** (01) that conveys a general water supply to one or more consumption connections

**05 31005 water distribution system**
system of **water mains** (05 31004) and ancillary works

**05 31006 break pressure tank**
**reservoir** (01) that breaks the **hydraulic gradient** (01) in an **aqueduct** (01)

## 5.2 Parts (05 32xxx)

**05 32001 waste storage container**
receptacle for storing **solid waste (**01)

**05 32002 bulk waste storage container**
movable **waste storage container** (05 32001) that has a capacity of 1 $m^3$ or more, but does not exceed 30 $m^3$

**05 32003 communal waste storage container**
movable **waste storage container** (05 32001) into which **solid waste** (01) is discharged and that has a capacity of between 0.75 $m^3$ and 1 $m^3$

**05 32004 individual waste container**
portable **waste storage container** (05 32001) that has a capacity of less than 0.12 $m^3$

**05 32005 dustbin**
rigid **individual waste container** (05 32004) with a removable lid

**05 32006 litter bin**
receptacle for **solid waste** (01) to prevent **litter** (05 39006)

**05 32007 Falkirk bin**
**dustbin** (05 32005) that has a metal strap across the top to secure its lid

**05 32008 paper waste sack**
disposable **individual waste container** (05 32004) made of reinforced paper

**05 32009 plastics waste sack**
disposable **individual waste container** (05 32004) made of plastics

**05 32010 sack holder**
**frame** (01) with a hinged lid that holds and protects a disposable **individual waste container** (05 32004) and keeps it open for use

**05 32011 waste chute**
refuse chute
ventilated, vertical or near-vertical **tube** (01) that passes from one level of a **building** (01) to another, with openings that connect with **solid waste hoppers** (05 32012) and that terminates at the bottom at the **roof** (01) of a **waste storage chamber** (05 32013)

**05 32012 solid waste hopper**
receptacle into which **solid waste** (01) is placed and from which it is directed into a **waste storage container** (05 32001)

**05 32013 waste storage chamber**
compartment within which **waste** (01) is discharged into one or more **waste storage containers** (05 32001)

**05 32014 bin store**
bin chamber
shelter for one or more **individual waste containers** (05 32004)

**05 32015 compacted waste container**
transportable **waste storage container** (05 32001) for **solid waste** (01) under **compression** (01)

**05 32016 pneumatic waste conveyor**
system of **pipes** (01) using a partial vacuum to remove **solid waste** (01)

**05 32017 waterborne solid waste removal system**
system of **pipes** (01) using water flow to remove **solid waste** (01)

**05 32018 ballistic separator**
plant for **solid waste separation** (05 39022) in which **solid waste** (01) is dropped into a high speed rotary impeller that throws off materials of different **bulk densities** (BS EN 12509) and physical **characteristics** (01) into separate containers

**05 32019 magnetic separator**
electromagnetic plant for removing ferrous metals from **solid waste** (01)

**05 32020 waste pulverizer**
plant that breaks up **solid waste** (01) to reduce its **size** (01) by pressure, impact or shredding

**05 32021 hammer mill pulverizer**
**waste pulverizer** (05 32020) that consists of a drum with beaters mounted on a rotating shaft

**05 32022 fragmentizer**
**waste pulverizer** (05 32020) that shreds or breaks large pieces of metal to produce **salvage** (05 39005)

**05 32023 rotary drum pulverizer**
**waste pulverizer** (05 32020) that consists of a rotating drum in which wetted **solid waste** (01) is broken down

**05 32024 shredder**
**waste pulverizer** (05 32020) that reduces the **size** (01) of **solid waste** (01) by cutting

**05 32025 hydraulic shears pulverizer**
**shredder** (05 32024) using hydraulically-operated cutting blades or guillotines

**05 32026 waste compactor**
machine for reducing the volume of **solid waste** (01) before collection or disposal

**05 32027 baler**
machine for pressing **solid waste** (01) into a mould that is either self-supporting or retained in **shape** (11 27004) by wires or straps; a rectilinear solid is formed

**05 32028 bagger**
machine that puts dried **waste** (01) into bags

**05 32029 car barbecue plant**
high temperature furnace for converting disused cars into metal **salvage** (05 39005)

**05 32030 incinerator**
furnace in which **solid waste** (01) is burned

**05 32031 free-burning incinerator**
**incinerator** (05 32030) in which sufficient air is provided to burn **waste** (01) freely in a primary chamber

**05 32032 controlled air incinerator**
**incinerator** (05 32030) in which decomposition of **waste** (01) takes place by **pyrolysis** (05 39024) in a primary chamber and combustion is completed in a secondary chamber

**05 32033 multiple hearth incinerator**
**incinerator** (05 32030) in which **waste** (01) is fed from the first of several hearths, stacked one above the other, on to each of the hearths below in turn until combustion is complete

**05 32034 rotating kiln incinerator**
**incinerator** (05 32030) that consists of a rotating cylindrical combustion chamber slightly inclined to the horizontal

**05 32035 moving grate incinerator**
**incinerator** (05 32030) in which turbulence and mixing of **waste** (01) is effected by travelling, reciprocating, rocking or rolling grates

**05 32036 invert**
lowest point of the internal surface of a **pipe** (01) or **channel** (01) at any cross-section

**05 32037 weir penstock**
**penstock** (01) arranged so water flows over the top of the **gate** (05 12001)

**05 32038 flow splitter**
**construction** (01) by which **liquid flow** (BS EN ISO 772) is divided into separate **streams** (BS EN ISO 772)

**05 32039 band screen**
**screen** (01) that consists of an endless moving band

*NOTE The band is usually of wire mesh.*

**05 32040 bar screen**
**screen** (01) that consists of a series of vertical or inclined **bars** (01)

**05 32041 disc screen**
**screen** (01) that consists of a circular disc that rotates about a central axis perpendicular to the plane of the disc

**05 32042 drum screen**
**screen** (01) consisting of a cylinder or truncated cone that rotates on a horizontal axis and retains **screenings** (05 39034) externally

**05 32043 cup screen**
**screen** (01) consisting of a cylinder that rotates on a horizontal axis and retains **screenings** (05 39034) internally

**05 32044 injector**
device operated by water pressure for adding chemicals to a water **stream** (BS EN ISO 772) or **pipeline** (01)

**05 32045 scum board**
board or **plate** (01) that projects above or below **top water level** (05 37001) to prevent scum from being carried forward with the liquid

**05 32046 decanting channel**
trough at **top water level** (05 37001) to collect **supernatant liquor** (05 39031)

**05 32047 rapid gravity filter**
**construction** (01) for removing impurities from water comprising a tank containing **filter media** (05 33003) through which water flows vertically by gravity at rates between 3 and 10 m/h, associated **pipes** (01) and facilities for **backwashing** (BS ISO 6107-3)

**05 32048 upward flow filter**
**construction** (01) for removing impurities from water that is passed upwards through **filter media (**05 33003)

**05 32049 dual layer filter**
**rapid gravity filter** (05 32047) with two types of **filter media** (05 33003) with differing **densities** (01)

**05 32050 module valve**
**float-operated valve (**01) on the outlet of a **rapid gravity filter** (05 32047)

**05 32051 sequencer**
device that controls cleaning of a filter automatically

**05 32052 airblower**
mechanical device that compresses air for **air scouring** (BS ISO 6107-8)

**05 32053 ozonizer**
plant that produces ozone by means of a controlled electrical discharge

**05 32055 sludge centrifuge**
machine for **sludge dewatering** (05 39039) by centrifugal motion

**05 32056 sludge bleed**
remove **sludge** (01) through a valved **pipe** (01) in the wall of a tank

**05 32057 sludge valve**
**valve** (01) for **sludge bleeding** (05 32056)

**05 32058 pneumatic ejector**
apparatus that uses compressed air to discharge at a higher **level** (01) the liquid flowing by gravity into a container

**05 32059 bellmouth**
bell-shaped **fitting** (01) to improve fluid flow at the inlet or outlet of a **pipe** (01) or inlet of a **shaft** (01)

**05 32061 public sewer**
**sewer** (01) vested in a water authority or other statutory **drainage** (01) authority

**05 32062 private sewer**
**sewer** (01) that is not a **public sewer** (05 32061)

**05 32063 tank sewer**
**sewer** (01) of enlarged cross-section for storing **sewage** (BS ISO 6107-1) at peak flows, **high water** (BS EN ISO 772) or when **pumps** (01) are not operating

**05 32064 outfall sewer**
final length of **sewer** (01) that conveys the **sewage** (BS ISO 6107-1) from a **sewerage system** (01) to a **sewage treatment works** (05 31001) or a receiving water

**05 32065 side entrance manhole**
**manhole** (01) with a lateral access passage that connects to a vertical access **shaft** (01) constructed off the line of a **sewer** (01)

**05 32066 sealed cover**
removable cover for a **manhole** (01) or **inspection chamber** (BS EN 598) that has an airtight and watertight **joint** (01)

**05 32067 step iron**
**step** (BS EN 131-1) built into the **wall** (01) of a **manhole** (01)

**05 32068 lamphole**
small **shaft** (01) in the line of a **drain** (01) or **sewer** (01) that enables a **lamp** (07 52022) to be lowered to make an **inspection** (11 14002) by sighting from a **manhole** (01)

**05 32069 inverted siphon**
part of **sewer** (01) in which **sewage** (BS ISO 6107-1) flows under pressure, caused by the **sewer** (01) dropping below and returning to a line that represents its **hydraulic gradient** (01)

**05 32070 ramped connection**
steeply inclined **pipe** (01) raising the contents of a **sewer** (01) or **drain** (01)

**05 32071 drop-pipe connection**
tumbling bay
vertical **pipe** (01) raising the contents of a **sewer** (01) or **drain** (01)

*NOTE Usually at a **manhole** (01).*

**05 32072 exfiltration**
unintended egress of liquid from a **drain** (01) or **sewer** (01)

**05 32073 D screen**
fixed **screen** (01) that consists of a half cylinder in the form of a basket, through which **sewage** (BS ISO 6107-1) passes from inside to outside retaining **screenings** (05 39034) internally

**05 32074 barminutor**
**bar screen** (05 32040) with a shredding device that sweeps vertically up and down the **screen** (01), chopping up solids in retained **sewage** (BS ISO 6107-1) until they have been sufficiently reduced in **size** (01) to pass through

**05 32075 communitor**
**screen** (01) in the form of a rotating hollow drum with horizontal slots, within which blades engage with fixed combs, shredding solids in **sewage** (BS ISO 6107-1) until they have been sufficiently reduced in **size** (01) to pass through

**05 32076 sewage grit separator**
tank or **channel** (01) facilitating separation and settlement of **sewage grit** (05 39062) removal

**05 32077 sewage grit channel**
**sewage grit separator** (05 32076) in the form of a **channel** (01) through which **sewage** (BS ISO 6107-1) flows with constant velocity at any flow rate

**05 32078 sewage grit trap**
**sewage grit separator** (05 32076) in the form of a tank with a device that assists settlement of **sewage grit** (05 39062) whilst maintaining organic matter in suspension

**05 32079 hydrodynamic separator**
cyclonic separator
**sewage grit separator** (05 32076) in the form of a tank in which flow assumes a spiral motion so that inorganic particles are deposited on its walls and slide down to a hopper at its base whilst organic matter remains in suspension

**05 32080 sewage grit dredger**
device that lifts and removes settled **sewage grit** (05 39062) from the bottom of a **sewage grit separator** (05 32076)

**05 32081 sewage grit washer**
classifier
device in which **sewage grit** (05 39062) is washed after removal from **sewage** (BS ISO 6107-1)

**05 32082 primary settlement tank**
tank in which the majority of settleable solids are removed from **sewage** (BS ISO 6107-1) flowing through a tank, by falling to the bottom, before the **sewage** (BS ISO 6107-1) receives any biological treatment

**05 32083 final settlement tank**
humus tank
tank in which settleable solids are removed from **effluent** (BS ISO 6107-1) flowing through it, after treatment in a **biological filter** (BS ISO 6107-1) or **activated sludge treatment** (BS ISO 6107-1)

**05 32084 sludge digestor**
tank or pressure vessel for anaerobic decomposition of organic **waste** (01) or **sludge** (01) from **sewage** (BS ISO 6107-1)

**05 32085 high rate biological filter**
**biological filter** (BS ISO 6107-1) that consists of coarse inert material with a hydraulic loading that exceeds 3 $m^3$ per cubic metre per day, or an organic loading that exceeds 2.0 kg of **biochemical oxygen demand** (BS ISO 6107-2) per cubic metre per day

**05 32086 distributor**
device that spreads **supernatant liquor** (05 39031) from a **primary settlement tank** (05 32082) over the surface of a **biological filter** (BS ISO 6107-1)

**05 32087 dosing siphon**
**siphon** (05 19008) that automatically discharges accumulations of **supernatant liquor** (05 39031) to **distributors** (05 32086)

**05 32088 double oxidation ditch**
two parallel endless **channels** (01) in one of which **sewage** (BS ISO 6107-1) receives an **activated sludge treatment** (BS ISO 6107-1) followed by settlement in the other; the **channels** (01) are used alternately as required

**05 32089 belt press**
machine that compresses **sludge** (01) between two endless moving belts passing through rollers to reduce its **moisture content** (11 27033)

**05 32090 outfall sewer**
**pipeline** (01) that conveys sewage **effluent** (BS ISO 6107-1) to a receiving water

**05 32091 long sea outfall**
**outfall sewer** (05 32090) laid in or on the **sea** (BS ISO 6107-2) **bed** (05 22001) that carries **sewage** (BS ISO 6107-1) after removal of gross solids and **sewage grit** (05 39062) to a point in the **sea** (BS ISO 6107-2) where **contamination** (11 27132) of **beaches** (05 29151) is avoided

**05 32092 short sea outfall**
**outfall sewer** (05 32090) laid in or on the **sea** (BS ISO 6107-2) **bed** (05 22001) that carries **sewage** (BS ISO 6107-1) or **stormwater** (01) to a point in the **sea** (BS ISO 6107-2) just before **low water** (BS EN ISO 772) mark

**05 32093 outfall diffuser**
device fitted at or near the end of a **long sea outfall** (05 32091) or **short sea outfall** (05 32092) to improve mixing of **sewage** (BS ISO 6107-1) with **sea** (BS ISO 6107-2) water

**05 32094 tidal flap valve**
**flap valve** (01) fitted or near the outlet of a **pipeline** (01) that discharges into **tidal water** (BS ISO 6107-7)

**05 32095 subsoil drain**
**pipe** (01) that disperses **effluent** (BS ISO 6107-1) from a **septic tank** (BS ISO 6107-1) into **subsoil** (06 13002)

**05 32096 soakaway**
**pit** (03 22011) to which liquid is conveyed and from which it soaks into the permeable **ground** (01)

**05 32097 rain gun**
device that rotates and projects water, distributing over a large circular area

**05 32098 manure gun**
device for spraying **sludge** (01) over an area of **land** (01)

**05 32099 oil boom**
flat or cylindrical device floated on flowing water at an **intake** (05 11055) that excludes oleaginous matter or removes it by **adsorption** (05 39037)

**05 32100 standpipe**
**pipe** (01) or **tower** (03 51005) that contains water and projects vertically above the **ground** (01) and connects with a **water distribution system** (05 31005)

**05 32101 flash mixer**
device for quickly dispersing chemicals uniformly throughout a liquid

**05 32102 sludge cone**
inverted cone suspended in a **clarifier** (BS ISO 6107-2) that collects and concentrates **sludge** (01) for disposal through a **sludge bleed** (05 32056) connected to its lower end

**05 32103 schmutzdecke**
biological layer formed on **sand** (BS EN 12670) in a filter by **algae** (BS ISO 6107-7) and micro-organisms

**05 32104 granular activated carbon filter**
plant for an **activated carbon treatment** (BS ISO 6107-3) using activated carbon granules in a vessel

**05 32105 contact tank**
covered tank that retains partially treated water long enough to allow **disinfection** (BS ISO 6107-1)

**05 32106 booster pump**
**pump** (01) that restores **energy** (01) loss in a **pipeline** (01)

**05 32107 cement lining**
**mortar** (01) **pipe lining** (05 42045) for an iron **pipe** (01)

**05 32108 ventilating column**
vertical **pipe** (01) that introduces air into a **sewerage system** (01) and discharges an air stream containing **sewage odour** (05 39054) to the external air

### 5.3 Materials (05 33xxx)

**05 33001 residue**
material left over from consumption or a process

**05 33002 construction waste**
**waste** (01) from demolition or **construction works** (01)

**05 33003 filter medium**
material that promotes the retention or natural degradation of matter from liquid passed through it

**05 33004 masking spray**
**odorant** (05 39055) mixed as spray with an air stream that contains **sewage odour** (05 39054)

### 5.4 Activities (05 34xxx)

**05 34001 water mains network analysis**
calculating flows and pressures in a **water distribution system** (05 31005) **network** (01), at varying rates of input and output

### 5.5 Properties (05 37xxx)

**05 37001 top water level**
highest **level** (01) of a body of water in or behind a water retaining **structure** (01) before water overflows from it or ceases to enter it

**05 37002 bottom water level**
lowest operating **level** (01) of a body of water in or behind a water retaining **structure** (01)

### 5.6 Spaces (05 38xxx)

**05 38001 contaminated land**
**land** (01) that contains mineral, chemical or toxic substances to the extent that there could be a danger to health

### 5.7 Miscellaneous (05 39xxx)

**05 39001 special waste**
**hazardous waste** (01), the nature of which, and provisions for the disposal of which, are designated by regulation

**05 39002 toxic waste**
**hazardous waste** (01) that contains a significant amount of a **poisonous** (11 27068) substance

**05 39003 garbage**
**solid waste** (01) from the storage, handling, sale, preparation, cooking and dispensing of foods and produce

**05 39004 swill**
animal feed derived from food **waste** (01)

**05 39005 salvage**
material recovered for **recycling** (05 39021)

**05 39006 litter**
**solid waste** (01) discarded indiscriminately

**05 39007 ash**
inert and unburnt **residue** (05 33001) of combustion

**05 39008 humus**
colloidal mass of organic **waste** (01) that results from vegetable, animal or bacteriological growth and decomposition

**05 39009 waste collection**
removal of **solid waste** (01) from premises

**05 39010 refuse collection vehicle**
conveyance used to transport **solid waste** (01) in **waste collection** (05 39009)

**05 39011 Chelsea side loader**
**refuse collection vehicle** (05 39010) that has sliding side panels along its length

**05 39012 gravity packer vehicle**
**refuse collection vehicle** (05 39010), the body of which is moved hydraulically from the horizontal to the vertical to allow **solid waste** (01) to be compacted by its own **weight** (11 27002)

**05 39013 compactor vehicle**
**refuse collection vehicle** (05 39010) that contains a mechanical device to reduce the volume of the **solid waste** (01)

**05 39014 horizontal discharge vehicle**
**refuse collection vehicle** (05 39010) that is emptied from one end by means of a hydraulic ram

**05 39015 vertical discharge vehicle**
**refuse collection vehicle** (05 39010) that is emptied from one end by tilting its body hydraulically

**05 39016 dustless loading system**
mechanical system of emptying **dustbins** (05 32005) into a **refuse collection vehicle** (05 39010) that prevents escape of dust

**05 39017 waste skip**
transportable **waste storage container** (05 32001) that can be loaded onto (and unloaded from) a vehicle

**05 39018 bottle bank**
receptacle for bottles intended for **recycling** (05 39021)

**05 39019 transfer loading**
transfer of contents of **refuse collection vehicles** (05 39010) to containers or vehicles for long distance transportation

**05 39020 solid waste transfer station**
place where **solid waste** (01) is stored in bulk before being transported for treatment or disposal

**05 39021 recycling**
recovery of material from **solid waste** (01) for reuse or conversion

**05 39022 solid waste separation**
mechanical division of **solid waste** (01) into specific categories

**05 39023 solid waste sorting**
manual separation of **solid waste** (01) into its constituents

**05 39024 pyrolysis**
artificially induced decomposition of organic material by heat in the absence, or with a limited supply of oxygen

**05 39025 dumping**
disposal of **waste** (01) at an authorized place

**05 39026 fly tipping**
disposal of **waste** (01) at an unauthorized place

**05 39027 controlled tipping**
depositing **waste** (01) in a designated area of **land** (01), **compacting** (03 24008) it in shallow layers and covering it with **soil** (01) to prevent nuisance

**05 39028 disposal at sea**
discharge of **waste** (01) into the **sea** (BS ISO 6107-2)

**05 39029 influent**
liquid received for a given process

**05 39030 water conservation**
preservation, control and development of water resources by storage and other means, and prevention of **pollution** (BS ISO 6107-2)

**05 39031 supernatant liquor**
liquid above **sludge** (01) in a container where **sludge** (01) settlement occurs

**05 39032 centrate**
liquid removed by a **sludge centrifuge** (05 32055)

**05 39033 washwater**
water used for **backwashing** (BS ISO 6107-3)

**05 39034 screenings**
solids intercepted by a **screen** (01)

**05 39035 flotation**
raising suspended matter in water to the surface

*NOTE Usually by entrained air.*

**05 39036 absorption**
process in which molecules of a fluid are taken up by capillary, osmotic, chemical or solvent **action** (01)

**05 39037 adsorption**
process in which a solid takes up a fluid by surface adhesion

**05 39038 laminar flow separation**
process of removing **suspended solids** (BS ISO 6107-2) from a liquid by passing it through a separator with several sloping **plates** (01) on which the solids settle before sliding to the base of the tank

**05 39039 sludge dewatering**
process by which wet **sludge** (01) has its water content reduced by physical means

*NOTE The **sludge** (01) is usually conditioned with a **coagulant** (05 39051).*

**05 39040 disintegration**
maceration
loss of cohesion of solid material as a result of chemical or physical changes

**05 39041 sludge loading**
**biochemical oxygen demand** (BS ISO 6107-2) per unit mass of mixed liquor **suspended solids** (BS ISO 6107-2)

**05 39042 two stage aeration**
**aeration** (BS ISO 6107-1) of **sewage** (BS ISO 6107-1) twice in series in separate tanks in an **activated sludge treatment** (BS ISO 6107-1)

**05 39043 oxygenation**
process of dissolving oxygen in water

**05 39044 discharge consent**
statutory approval to discharge sewage **effluent** (BS ISO 6107-1), **trade effluent** (01), **surface water** (01) or **storm water** (01) to inland or **tidal waters** (BS ISO 6107-7)

**05 39045 consent standard**
limitations on physical, biological and chemical content included in a **discharge consent** (05 39044)

*NOTE Sometimes includes rate of **discharge** (BS EN ISO 772).*

**05 39046 Royal Commission standard**
standard for sewage **effluent** (BS ISO 6107-1) discharged into inland waters that specifies **biochemical oxygen demand** (BS ISO 6107-2) of not more than 20 mg/l and **suspended solids** (BS ISO 6107-2) **concentration** (01) of not more than 30 mg/l

**05 39047 ammonia standard**
**consent standard** (05 39045) requirement for maximum **concentration** (01) of ammonia

**05 39048 injection**
disposal of **sludge** (01) from **sewage** (BS ISO 6107-1) below **ground level** (01) through a system of **pipes** (01) attached to the **tines** (12 86032) of a cultivator

**05 39049 sub-surface irrigation**
**irrigation** (01) by running **effluent** (BS ISO 6107-1) into a permeable medium through a system of perforated or open-jointed **pipes** (01) laid in shallow **trenches** (03 22007)

**05 39050 compensation water**
statutory amount of water discharged to a **river** (BS EN ISO 772) or **stream** (BS EN ISO 772) from an **impounding reservoir** (05 11001), **borehole** (01) or other **abstraction** (BS ISO 6107-3) point

**05 39051 coagulant**
chemical that aids **coagulation** (ISO 6107-4)

**05 39052 ion exchange softening**
water **softening** (BS ISO 6107-1) in which a material is used that exchanges the soluble salts of calcium and magnesium for another salt

*NOTE The exchanged salt is usually sodium.*

**05 39053 pollutant**
matter in a medium that is detrimental to the intended use of that medium

**05 39054 sewage odour**
odour that arises from untreated or partially treated **sewage** (BS ISO 6107-1) or **sludge** (01) from **sewage** (BS ISO 6107-1)

**05 39055 odorant**
deodorant
chemical that reduces **sewage odours** (05 39054) detectable by human nose

**05 39056 odour monitoring station**
**building** (01) that contains **measuring instruments** (BS 6953) for **measurement** (01) of **concentrations** (01) of constituents of **sewage odour** (05 39054) in its surrounding air

**05 39057 chemical odour treatment**
process of lowering **concentration** (01) of **sewage odour** (05 39054) by addition of **odorant** (05 39055) to **sewage** (BS ISO 6107-1)

**05 39058 wet scrubbing**
process of reducing or removing particulate, vaporous or gaseous matter in contaminated air by passing it through an aqueous spray or **cascade** (05 22073)

**05 39059 dry scrubbing**
process of reducing or removing vaporous or gaseous matter in contaminated air by passing it through dry chemicals or a **gas** (BS 1179) or aerosol spray

**05 39060 high temperature oxidation**
process of removing particulate, vaporous or gaseous matter from contaminated air by high temperature heating

**05 39061 dosing point**
position at which chemicals are added to water or **sewage** (BS ISO 6107-1) in a treatment plant

**05 39062 sewage grit**
particles of mineral matter in **sewage** (BS ISO 6107-1) that settle readily

# 6 Pipelines and ducts (05 4xxxx)

## 6.1 Works (05 41xxx)

**05 41001 trunk main**
principal water **pipeline** (01) that feeds a **distribution main** (05 41002) or **service reservoir** (BS ISO 6107-6)

**05 41002 distribution main**
**gas** (BS 1179) or water **pipeline** (01) that distributes more than one **service pipe** (07 42080)

**05 41003 gas feeder**
**pipeline** (01) that carries **gas** (BS 1179) at a pressure higher than that in the corresponding **distribution main** (05 41002)

**05 41004 penstock**
**pipe** (01) that conveys water under pressure to a **water turbine** (05 12002)

**05 41005 pipe bridge**
self-supporting **pipeline** (01) crossing an obstruction

*NOTE Typical obstructions are **roads** (01), **railways** (01) and **watercourses** (01).*

**05 41006 pipe bridge**
**bridge** (01) for one or more **pipes** (01)

**05 41007 sour service pipeline**
**pipeline** (01) for oil or **gas** (BS 1179) that may contain hydrogen sulphide or other aggressive substances

**05 41008 duct network**
system of interconnected **ducts** (01)

**05 41009 cable tunnel**
**tunnel** (01) solely or primarily for **cables** (01)

**05 41010 cable way**
route for **cables** (01)

### 6.2 Parts (05 42xxx)

**05 42002 air valve**
**valve** (01) for the release of air at a high point

**05 42003 single orifice air valve**
**air valve** (05 42002) with a single chamber

**05 42004 double orifice air valve**
**air valve** (05 42002) with two chambers, one a small orifice and one with a large orifice

**05 42005 excess flow valve**
**valve** (01) that closes automatically at a predetermined **discharge** (BS EN ISO 772)

**05 42006 pressure control valve**
**valve** (01) that maintains a pre-determined pressure of a fluid immediately upstream of its position in a **pipe** (01)

**05 42007 adaptor**
**pipe fitting** (01) for connecting **pipes** (01) with different outside diameters, employing different jointing systems or made of different **materials** (01)

**05 42008 joint ring**
circular **seal** (01)

**05 42009 mechanical joint**
**joint** (01) that is formed by mechanical means

*NOTE It is usually capable of disconnection.*

**05 42010 gland joint**
**pipe** (01) **joint** (01) that utilizes metal ring to compress the **joint ring** (05 42008)

**05 42012 blank flange**
solid disc for bolting to a **flange** (BS EN 598) to close the end of a **pipe** (01), **pipe fitting** (01) or outlet to a vessel

**05 42013 puddle flange**
projecting flat rim around a **pipe** (01) where it passes through a water retaining **structure** (01) to help prevent the passage of liquid along the line of the **pipe** (01)

**05 42014 flange adaptor**
pipe **fitting** (01) placed over a **spigot** (BS EN 598) to provide a flanged **joint** (BS EN 598)

**05 42015 split collar**
collar of two pieces that are bolted together along the horizontal axis of a pipe **fitting** (01)

**05 42016 anchored joint**
**pipe** (01) **joint** (01) that incorporates a method of withstanding longitudinal **forces** (01)

*NOTE Often using **bolts** (01) or toothed inserts.*

**05 42017 underpressure connection**
**joint** (01) made by cutting into an existing **pipe** (01) and connecting a branch or **service pipe** (07 42080) without cutting off the flow

**05 42018 pipetrack**
line of supports on which **pipes** (01) are laid above **ground** (01) within an industrial facility

**05 42019 marker post**
**post** (01) that indicates the location of a buried **pipe** (01), **cable** (01) or **duct** (01)

**05 42020 aerial marker**
**marker post** (05 42019) visible from the air

**05 42021 anchor block**
**concrete** (01) block that surrounds or is attached to a **pipe** (01) to resist movement

**05 42022 thrust block**
**anchor block** (05 42021) placed around or against the outside of a **bend** (07 42106) or **junction** (07 42108) or against an **end cap** (07 42118)

**05 42023 pig trap**
device that allows entry to a **pipeline** (01) for the launching and receiving of **pigs** (05 46005)

**05 42024 closer**
pup
short make-up piece of **pipe** (01)

**05 42025 string**
several lengths of **pipe** (01) connected together before **pipelaying** (01)

**05 42026 stopple**
device that can be inserted into a **pipe** (01) to stop the fluid flow

**05 42027 night cap**
temporary closure at the end of a **pipe** (01)

**05 42028 slug catcher**
vessel at the end of a **pipe** (01) conveying well head **gas** (BS 1179) with entrained liquids, for extracting the liquids

**05 42029 thermowell**
pocket that protrudes into the fluid stream in a **pipe (**01) to house the sensor for temperature **measuring instruments** (BS 6953)

**05 42030 riser**
**pipe** (01) that connects a low **level** (01) **pipe** (01) with equipment at a higher **level** (01)

*NOTE Usually vertical.*

**05 42031 bypass**
alternative route for fluid flow from the upstream to the downstream side of a piece of equipment

**05 42032 crossing**
**pipe** (01) that crosses an obstruction

*NOTE Typical obstructions are **roads** (01), **railways** (01) and **watercourses** (01).*

**05 42033 sleeved crossing**
**crossing** (05 42032) in a **pipe sleeve** (BS 8313)

**05 42034 carrier pipe**
**pipe** (01) that contains the fluid to be transported

**05 42035 field bend**
**bend** (07 42106) made on or near a **site** (01)

**05 42036 sag bend**
**bend** (07 42106) that allows a **pipeline** (01) to conform to the contour of the **ground** (01) at the bottom of a **slope** (01) or to be laid beneath an obstruction

**05 42037 over bend**
**bend** (07 42106) that allows a **pipeline** (01) to conform to the contour of the **ground** (01) at the top of a **slope** (01)

**05 42038 inverted siphon**
length of gravity flow **pipe** (01) passing under an obstruction, each end of which is at atmospheric pressure

**05 42040 wash out**
device for draining water from a **pipeline** (01)

**05 42041 spadeblank**
**plate** (01) inserted between two **flanges** (BS EN 598) to block the fluid flow

**05 42042 wrapping**
impervious **material** (01) in **strips** (01) or **sheets** (01) wound round a **pipe** (01) to protect it against corrosion

**05 42043 wrapping**
porous **strips** (01) or **sheets** (01) wound round a **pipe** (01) to reinforce a **coat** (01)

**05 42044 pipe sheathing**
plastic **tube** (01) placed around a **pipe** (01) during **pipelaying** (01) to inhibit corrosion

**05 42045 pipe lining**
durable **material** (01) applied to the internal surface of a **pipeline** (01), **pipe** (01) or **pipe fitting** (01) to protect it from corrosion, **erosion** (05 25010) or chemical track

**05 42046 weight coating**
layer of dense **material** (01) fixed around a **pipe** (01) to reduce **buoyancy** (05 17030) and protect it from accidental damage

**05 42047 jointing chamber**
underground chamber with access to the surface to facilitate installation or **jointing** (01) of **cables** (01)

**05 42048 joint box**
small rectangular **jointing chamber** (05 42047) access to which is gained by removing a cover that extends over the whole plan area of the chamber

*NOTE Usually in a **footpath** (01).*

### 6.3 Materials (05 43xxx)

**05 43002 annular fill**
**fill** (01) for the **space** (01) between a **carrier pipe** (05 42034) and a **pipe sleeve** (BS 8313)

**05 43003 surround**
**material** (01) placed around and over a **pipe** (01) to fill or partially fill the **trench** (01)

### 6.4 Activities (05 44xxx)

**05 44001 scrape**
mechanically remove deposits from the inside wall of a **pipe** (01)

**05 44002 swab**
**clean** (06 84020) a **pipe** (01) with a **pig** (05 46005)

**05 44003 purge**
displace one kind of fluid by another under controlled conditions

**05 44004 plough**
**excavation** (01) of a **trench** (01) in a **bed** (05 22001) by pulling a plough-shaped **excavator** (12 26006); at the same time a **pipe** (01) attached to the back of the **excavator** (12 26006) is pulled into the **trench** (01)

**05 44005 string**
place a series of **pipes** (01) end to end preparatory to **jointing** (01)

**05 44006 tie in**
**jointing** (01) two sections of **pipeline** (01) already laid

**05 44007 reline**
apply a **lining** (05 42045) to a cleaned **pipeline** (01)

**05 44008 cathodic protection**
method of protecting metal **pipes** (01), vessels or **structures** (01) against external corrosion in buried or submerged **assemblies** (01); the metal to be protected is maintained in a cathodic state relative to that of its surrounding

**05 44009 electrolytic insulation**
insulation that resists transmission of **electric current** (11 27105) to combat the corrosion of metals by electrolytic **action** (01)

**05 44010 jet**
internally **clean** (06 84020) a **pipe** (01) with water at high pressure

### 6.5 Processes (05 45xxx)

**05 45001 leakage**
loss of content from a **pipe** (01) or **pipeline** (01)

**05 45002 tuberculation**
hard adherent deposit in a **pipeline** (01) caused by internal corrosion

### 6.6 Plant, equipment and documentation (05 46xxx)

**05 46001 promoter**
person or organization that seeks to install, operate and maintain a facility or utility under statutory powers

**05 46002 cable detector**
device for locating buried **cables** (01)

**05 46003 pipe detector**
device for locating buried **pipes** (01)

**05 46004 leak noise correlator**
electronic **leakage** (05 45001) detector that measures the time for the **sound** (11 27088) of a leak to be transmitted along a **pipeline** (01) to two microphones placed at different locations along a **pipeline** (01)

**05 46005 pig**
piston-like device that can be propelled through a **pipe** (01) by fluid pressure to **clean** (06 84020) it or carry out an investigation

### 6.7 Properties (05 47xxx)

**05 47001 working width**
**width** (01) of **land** (01) required for **construction** (01) of a **pipeline** (01)

**05 47002 bore**
internal diameter of a **pipe** (01) or pipe **fitting** (01)

**05 47004 hydrostatic pressure**
pressure exerted by a liquid at rest

**05 47005 external pressure**
pressure applied to the outside of a **pipe** (01) by the surrounding **soil** (01) and/or water, including superimposed **loads** (01) on the **ground** (01) above the **pipe** (01) and transmitted through the **soil** (01)

**05 47006 operating pressure**
pressure at a given point in a **pipeline** (01) when fluid is flowing in it, under normal operating conditions

**05 47007 maximum allowable operating pressure**
maximum internal sustained pressure to which a **pipeline** (01) is authorized for use

**05 47008 internal design pressure**
pressure selected as the maximum sustained pressure exerted by a **pipeline** (01) content to which a **pipeline** (01) is to be designed

**05 47009 surge pressure**
pressure due to **surge** (05 47012)

**05 47010 site test pressure**
pressure applied to a **pipeline** (01) or other **installation** (01) for **acceptance testing** (01)

**05 47011 works test pressure**
internal pressure applied to a **pipeline** (01) or **component** (01) by the **manufacturer** (01) for **acceptance testing** (01) before installation

**05 47012 surge**
change in pressure in a **pipeline** (01) due to sudden change in the velocity of flow

**05 47013 pipeline spread**
length of **pipeline** (01) upon which **pipelaying** (01) is being carried out sequentially

**05 47014 demand**
discharge of fluid put into a supply and distribution system to satisfy the requirements of consumers and cater for **leakage** (05 45001) and unaccounted loss

### 6.8 Spaces (05 48xxx)

**05 48001 pipetrack**
**strip** (01) of **land** (01) below the surface of which a **pipeline** (01) runs

### 6.9 Miscellaneous (05 49xxx)

**05 49001 easement**
legally binding agreement granted by a landowner to **promoter** (05 46001), in perpetuity or for a long term, which sets out the rights and obligations of both parties in relation to the matter, but under which ownership of the **land** (01) remains with the landowner

**05 49002 wayleave**
agreement granted by a landowner to a **promoter** (05 46001) to execute works on the terms specified

**05 49003 lease**
legally binding agreement between a landowner and a **promoter** (05 46001) whereby certain ownership rights are transferred to the **promoter** (05 46001) for a specified period

**05 49004 subterranean lease**
**lease** (05 49003) for a **strip** (01) of **subsoil** (06 13002) just wide enough for a **pipeline** (01)

*NOTE The upper and lower limits are usually between 0.6 and 10 m below **ground level** (01)*

**05 49005 statutory notice**
notice issued by the **promoter** (05 46001) under an Act of Parliament that states the statutory powers that the **promoter** (05 46001) is, or will be, exercising

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