BRITISH STANDARD

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Glossary of

Mining terms —

Section 4: Drainage

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Co-operating organizations

The Mining and Quarrying Requisites Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government department and scientific and industrial organizations:

Association of Mining Electrical and Mechanical Engineers*
British Electrical and Allied Manufacturers' Association
British Steel Industry
Department of Trade and Industry*
Engineering Equipment Users' Association
Federation of Associations of Mining Equipment Manufacturers
Federation of Manufacturers of Construction Equipment and Cranes
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Institution of Mechanical Engineers
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Mechanical Handling Engineers' Association
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The Government department and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Institution of Mining and Metallurgy
University of Birmingham
University of London
University of Nottingham

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Contents

Foreword

This glossary has been prepared, under the authority of the Mining and Quarrying Requisites Industry Standards Committee, in order to standardize and to co-ordinate the technical terms in current use in mining in the United Kingdom. Although the majority of the terms defined in the original edition of this glossary were primarily concerned with coal mining, account has been taken of terms used in other forms of mining and of quarrying.

The need for this glossary arose from the widely varying interpretation of terms used within the industry, and the prevalent use of more than one synonym, some purely local in origin, to indicate specific meanings.

The glossary has been issued in a number of sections, according to subject matter, as follows:

— *Section 1: Planning and surveying;*

— *Section 2: Ventilation;*

— *Section 3: Boring and exploration;*

— *Section 4: Drainage;*

— *Section 5: Geology;*

— *Section 6: Drilling and blasting;*

— *Section 7: Electrical engineering and lighting;*

— *Section 8: Winning and working;*

— *Section 9: Shafts and associated equipment;*

— *Section 10: Transport;*

— *Section 11: Strata control.*

In the normal process of periodical review of the BS 3618 publications it was seen that a number of modifications and additions were desirable to Section 4, "Drainage"; therefore, since the previous edition was dated 1963, it was decided to publish a revision incorporating these changes.

In compiling the glossary account has been taken of the fact that terms primarily associated with coal are separately defined in BS 3323, "*Glossary of coal terms*", and terms relating to coal preparation are defined in BS 3552, "*Glossary of terms used in coal preparation*". The following factors also have applied in the statement, selection and definition of terms:

1) Where two or more terms are grouped together, the term which is favoured is printed first and in heavy type. It is hoped that such preferred terms will gradually displace the non-preferred terms. The non-preferred terms of a group are printed in small capital letters. Where the use of any term is considered to be undesirable it is marked *deprecated*.

2) Generally, only terms which have a specific meaning in this field have been included. Where a technical term has an accepted meaning in other fields of engineering it has been omitted; the few exceptions are terms which are of particular importance in mining.

3) Purely local terms are not defined, but those of sufficient importance are included as non-preferred terms.

4) Obsolete terms are excluded.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 5 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Glossary

Term	Definition
adit	A rising road affording an entrance to a mine, driven from the surface and primarily intended to facilitate natural dewatering of the workings.
air displacement pump DISPLACEMENT PUMP, *deprecated*	A pump consisting of a closed vessel from which water is expelled through a delivery valve and pipe by means of compressed air admitted to the top of the vessel.
air lift pump	A means of raising water by admitting compressed air near the lower end of a submerged pipe column, thus producing a mixture of air and water, in the pipe, of lower specific gravity than the standing water outside the pipe.
Angus Smith compound	A protective coating for valves, fittings and pipes used for underground work, composed of coal-tar, tallow, resin and quicklime.
aquiclude	See *confining bed.*
aquifer	A porous water-bearing stratum.
automatic pump control	The starting and stopping of a pump by a mechanism actuated by the level of water in the suction well or sump, or by the level or pressure of the water in a discharge tank.
bailer	1. See *water barrel.* 2. See also *Boring and exploration* section.
barrel	See *water barrel.*
bleed BLEEDER	A small feeder of water issuing either naturally from the strata, or from a range of pipes.
bleeder	See *bleed.*
borehole pump	Any pump which can operate in a borehole, either shaft-driven from the surface or electrically-driven by submersible electric motor.
bulkhead	A watertight dam containing some form of door or removable plate.
by-pass valve	A valve fitted in a pipe which provides a connection between the inlet and outlet of a piece of apparatus.
cautionary zone	A zone in which any unworked mineral lies within a specified distance from unconsolidated deposits or other sources of danger, particularly water.
cement grouting	See *cementation.*
cementation CEMENT GROUTING	Grouting by the injection of cement or cement-clay suspensions.
centrifugal pump	A form of pump in which water is drawn through the eye of a rotating impeller and discharged from its periphery into a chamber or series of passages of gradually increasing cross-section. The kinetic energy given to the water by its centrifugal discharge is thus largely converted to pressure energy. (See also *turbine pump.*)
check valve	See *reflux valve.*
clack valve FLAP VALVE, *deprecated*	A hinged valve.
clay dam	A stopping or dam, wherein the seal against water is provided by puddled clay inserted between brick walls or wooden planks.
column	A length of pipe such as a shaft rising main, carrying water from the mine pumps to the surface.

Term	Definition
cone of depression	The space enclosed between the water table, at which water would stand naturally in the ground, and the position at which it in fact stands owing to drainage or pumping at some point in the vicinity. In the case of confined water under pressure, the cone of depression is the space between the undisturbed piezometric surface (q.v.) and the piezometric surface after pumping.
confining bed AQUICLUDE	An impervious stratum above and/or below an aquifer.
connate water	Inherent water contemporary with the rocks containing it, as opposed to water subsequently permeating the rocks.
dam PLUG	A seal constructed in a mine roadway to prevent or control the entry of water into mine workings (cf. *bulkhead*).
deep well pump	Any kind of pump delivering from a well, shaft or borehole.
delivery column	See *rising main*.
delivery drift OFF-TAKE DRIFT JACK-HEAD, *deprecated*	A drift or adit connected to a shaft from a point on the surface at a lower level than the shaft top and used as an outlet into which mine pumps discharge, so reducing the height through which the water must be lifted.
delivery valve	1. Usually a valve at the outlet of a delivery pipe. 2. The sluice valve between a pump and its delivery pipe or delivery column. 3. The outlet valve forming part of a reciprocating pump.
depressed water level PUMPING WATER LEVEL	The lowest level of ground water during drainage or pumping.
displacement pump	See *air displacement pump*.
drawdown	The vertical distance, at any point, through which the free ground water table or the undisturbed piezometric surface is lowered due to pumping.
dredge sump	See *settling pit*.
drowned level INVERTED SIPHON	Part of a drainage drift which, being below both discharge and entry levels, is constantly full of water.
duckfoot DUCKFOOT BEND	A pipe bend at the bottom of a shaft column or rising main fitted with a horizontal base sufficiently strong for the weight of the rising main to rest upon it.
duckfoot bend	See *duckfoot*.
feeder	Any flow of water or gas entering a mine.
flank bore	See *flank hole*.
flank hole FLANK BORE FLANKING HOLE	A borehole to detect water, gas, or other danger, driven from the side of an underground excavation in a line not parallel with the centre line of the excavation.
flanking hole	1. See *flank hole*. 2. See also *Drilling and blasting* section.
flap valve	See *clack valve*.
flume LAUNDER, *deprecated* RACE, *deprecated* SLUICE, *deprecated*	An open trough or channel, made of wood or other material, used for conveying water.
flush	See *inrush*.
foot valve	The non-return valve fitted to the inlet of a suction pipe.

Term	Definition
frame dam	A stopping, dam or bulkhead built of heavy timbers.
garland WATER GARLAND WATER CURB, *deprecated* WATER RING, *deprecated*	A channel fixed round the lining within a shaft in order to catch the water draining down the shaft walls and conduct it by pipes or water boxes to a lower level.
gate valve	A valve which provides a straight through passage for the flow of fluid.
ground water METEORIC WATER	Water penetrating from the surface and filling naturally the pores and fissures of the strata below the water table.
ground water hydrology	That aspect of hydrology which is concerned with the physical and chemical characteristics of water and similar liquids found in the ground.
ground water level	See *water table*.
grouting	The process of injecting cement, clay, hot bitumen, or other material, to improve the strength of the strata or to retard or prevent the passage of liquids or gases.
growth	See *make of water*.
hydrology	The study of the movement of water above, on and within the earth's crust (cf. *hydrogeology,* in *Geology* section).
inrush FLUSH, *deprecated*	Any sudden flow of material and water into underground workings.
inverted siphon	See *drowned level*.
jack head	See *delivery drift*.
launder	See *flume*.
lodge LODGEMENT	A reservoir of any size used for holding water in a mine. A sump or standage.
lodgement	See *lodge*.
make of water GROWTH, *deprecated*	The rate of entry of water into a mine or part of a mine.
meteoric water	See *ground water*.
miners' inch	See "*V*" *notch*.
off-take drift	See *delivery drift*.
on air	The state of a pump which is operating although having no water in its working parts.
on snore	The operation of a pump with its strainer partly exposed to air and passing a mixture of air and water.
piestic level	The level at which water in a confined aquifer will rise under its full hydrostatic head.
piezometric surface	An imaginary surface that coincides with the hydrostatic pressure level of the water in a confined aquifer.
pipefitter	See *pipeman*.
pipeman PIPEFITTER	A man engaged in laying or repairing pipe lines.
plug	1. See *dam*. 2. A watertight seal in a shaft formed by removing the lining and inserting a concrete dam, or by placing a plug of clay over ordinary debris used to fill the shaft up to the location of the plug. 3. See also *Shafts and associated equipment* section.
pumping water level	See *depressed water level*.

Term	Definition
race	See *flume*.
reciprocating pump	A pump depending for its action on the movement of a piston or plunger within a cylinder.
reflux valve CHECK VALVE, *deprecated* RETAINING VALVE, *deprecated*	An automatic non-return valve, located on the delivery side of a pump, which opens freely to permit fluid to pass in one direction but closes under its own weight when motion ceases or when the fluid commences to flow in a reverse direction.
rest water level	1. The level of the water table at any particular point. 2. The level of water in a well or borehole when pumping is not in progress.
retaining valve	See *reflux valve*.
rising main DELIVERY COLUMN, *deprecated*	The pipe through which the water from a pump reaches the point of delivery; particularly the pipe column in a shaft.
secondary water	Water entering the mine from other workings, as opposed to water inherent in the area worked by the mine.
settling pit DREDGE SUMP, *deprecated* SETTLING SUMP, *deprecated*	An excavation through which mine water is conducted in order to reduce its velocity, thus allowing sediment to settle and to be cleaned out from time to time.
settling sump	See *settling pit*.
sinking pump	A pump specially designed for use in sinking shafts.
sliding suction	A telescopic suction pipe.
sluice	See *flume*.
sluice valve	A valve consisting of a plate, moved by a screw, between closely fitting channel guides.
snorepiece STRAINER STRUM, *deprecated*	A strainer fitted to the inlet of a suction pipe. (See also *on snore*.)
spider	1. A ring inserted at the joints of the suspension column of a borehole pump. Radial vanes from the ring support a central sleeve, which acts as a steady bearing for the pump shaft. 2. See also *Shafts and associated equipment section*.
standage	1. A lodge. 2. The capacity of a sump or lodge.
strainer	See *snorepiece*.
strum	See *snorepiece*.
submersible pump	A pump driving unit which operates when fully submerged.
suction valve	The inlet valve forming part of a reciprocating pump.
sump	1. That portion of the shaft below the normal winding level which is used for the collection of water for pumping. 2. Any excavation in a mine for collecting or storing water.
swallow hole	A natural cavern formed by the solution of rock, usually limestone, by water passing down a joint or bedding plane.
tail of water	The edge of water standing in mine workings.
tap	To cut or bore into old workings or water-bearing strata for the purpose of proving or extracting gas or water.
tilting disc valve	A form of quick-closing reflux valve used with high lift pumps in order to minimize water hammer or closing. Usually pivoted on a diameter.

Term	Definition
turbine pump	A multi-stage centrifugal pump fitted with stationary diffuser vanes on the outlet side of the impellers.
"V" notch MINERS' INCH, *deprecated* WATER INCH, *deprecated*	A device for measuring the flow of water in an open channel.
valves	See under the following types of valve: by-pass, check, clack, delivery, flap, foot, gate, reflux, retaining, sluice, suction, tilting disc.
water barrel BAILER BARREL, *deprecated*	A tank used for winding water from the sump at the bottom of a shaft; usually self filling by means of a valve or series of valves in the bottom of the tank.
water barrier	An area of solid mineral left unworked to protect a mine, or part of a mine, against entry of secondary water.
water blast	The expulsion of water under pressure, in mine workings, caused by trapped air expanding as the water level is lowered.
water box	A rectangular wooden pipe used in shafts for conveying water between garlands.
water curb	See *garland*.
water garland	See *garland*.
water inch	See "*V*" *notch*.
water plane	See *water table*.
water ring	1. A type of centrifugal exhauster attached to pumps which might have to operate on snore. 2. See *garland*.
water seal	A water accumulation in a depression in an underground roadway or in a pipe, sufficient to form a seal.
water table GROUND WATER LEVEL, *deprecated* WATER PLANE, *deprecated*	The plane or surface below which fissures and pores in the strata are naturally saturated with water.
weeper	A small feeder of water.

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