

The New Penguin Dictionary of
Civil Engineering

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quantities taken from drawings, see *taking off*, are collected together on **abstract sheets**, see *abstracting*, and used to produce a *bill of quantities*.

abstracting The process of removing or taking away, such as **1** [water] **abstracting water** from a natural source, e.g. a river, which in the UK, for example, requires an **abstraction licence** – see also *impounding licence* – or **2** [mgmt] the process of collecting and categorizing the work and the quantities required for a construction project into a document called the *abstract* to produce a *bill of quantities*. See also *taking off*.

abutment [stru.] A support to an *arch* or *bridge* or *vault* that resists horizontal and lateral forces as well as vertical forces. For a series of arches, the term abutment would, more commonly, be applied to the end *piers* rather than to intermediate supports unless these were particularly large.

abuttal Boundaries where a piece of land abuts another.

abyssal Relating to the depth of water below which light will not penetrate.

Abyssinian well [hydr.] A well made by driving a pointed perforated tube into the ground, using a sledge hammer or light *pile hammer* and pumping out the water.

abyssobenthos The floor of the ocean at depths light will not reach.

abyssopelagic The oceanic zone between 4000 metres and 6000 metres (approx) depth, including the organisms that exist in the water.

accelerated Accelerated curing is a method used, particularly for *pre-cast concrete*, to increase the early strength of the concrete – there is a risk that the final strength may be lowered. Warm, moist air, even steam, is used to speed up the curing process – see *autoclave*. **Accelerated flow** [hydr.] is flow in a channel in which the velocity increases in the direction of flow. **Accelerated tests** are used to investigate long-term behaviours in some phenomena. An **accelerated life test** is one in which the

full life cycle of something is simulated and tested on a much reduced time scale e.g. an **accelerated stress tests** where a specimen of material may be subject to a full range of stress e.g. in *fatigue* or an **accelerated corrosion test** or **accelerated weathering**.

acceleration Rate of increase of velocity.

accelerator Increases the rate of change e.g. an *admixture* that quickens the *hardening rate* or reduces the initial setting time of concrete. *Calcium chloride* was once commonly used but it can corrode embedded steel. Its use in concrete containing steel therefore is limited and advised against by regulatory authorities in many countries. Alternative non-chloride accelerators are available such as sulphate, formate and nitrate compounds, e.g. calcium formate, calcium nitrate.

accelerogram The results from an *accelerometer* where ground acceleration is plotted as a time series.

accelerometer A sensor for measuring acceleration used e.g. to measure the response of the ground or a structure to an earthquake. They are typically silicon sensors that detect changes in *capacitance*, *piezo-resistance* or optical movement of a small mass. They are therefore really sensors of a change from which acceleration is deduced. An **accelerograph** is an accelerometer that produces a graphical record – an *accelerogram*.

accent lighting Decorative type of lighting used to highlight an architectural feature or to set a mood or ambience.

acceptable Able to be received. An **acceptable daily intake** is the largest amount of a chemical to which a person is exposed that is not expected to result in any adverse effects. **Accepting responsibility** makes one accountable for the duties taken on. An **acceptable quality level** (AQL) is the rate of incidence of recorded defects, above which quality would be unacceptable. See also *acceptable risk*.

acceptable risk **1** Something that is very difficult to define and measure but is cen-