

Typology 1: extraction works

Outcome of mining science operations for the research and exploitation of minerals and useful rock.

Mining science identifies and exploits useful mineral deposits both on the earth's surface and underground. Various types of science merge to fulfil this objective. Mining science has also been known as "mining art" as special aptitude, as well as specific scientific knowledge, is required of the technician. There are two types of extraction works: quarries and mines. The first term refers to the extraction of consolidated and unconsolidated rock, while the second refers to useful mineral extraction.

Mine

Complex of sites, tunnels, inclines etc., for the extraction and transport of mined material.

A mine is a complex, consisting of mineral resources of industrial interest and of the works and equipment necessary for its exploitation. The deposit is classified as "metalliferous" or "non metalliferous" depending on whether metals or non-metals are extracted. Minerals are naturally-occurring, solid compounds, formed through inorganic processes; one exception is mercury, which, despite its liquid form, is still classified as a mineral. Minerals are also characterised by physical homogenous properties, each mineral having a particular chemical composition and a unique arrangement of atoms. For those minerals which are primarily used in road, building and hydraulic construction, the complex is generally known as a quarry.

With regard to the structure, underground works are accessed by means of drift tunnels or vertical shafts, or inclines and inclined wells. The main haulage tunnels, constituting the main structure of the mine, branch off from such tunnels or wells. Secondary tunnels, in turn, branch off from the haulage tunnels and extraction plants, subject to continuous development, eventually cover the entire deposit area. Haulage tunnels are used for wheel-barrows, hand-pushed wagons and in more recent times for track-driven (Decauville railway) mining wagons. As previously mentioned, the set-up of the mining plants and the manner in which useful mineral is worked, determine the various extraction methods.

Quarry

Complex of sites, tunnels, inclines etc., for the extraction and transport of rocks, the object of extraction.

The term "quarry" refers to the excavation of material useful for civil construction purposes and thus, by extension to the place of work, which may be either opencast or underground. There are quarries for unconsolidated materials (gravel, sand, pozzolan etc.), magmatic rock (granite, diorite, porphyry, basalt etc.), sedimentary rock (conglomerates, sandstone, limestone, tuff etc.) and for metamorphic rock (gneiss, marble, schist, skarn etc.). Shafts which communicate with the surface allow aeration and evacuation.

Opencast quarry: the opencast extraction method is used and is subdivided according to the method permitted by the type of extracted rock and by the rockbed.

Underground quarry: underground mining method with variations depending on the type of material extracted.

Funnel-shaped quarry (inverted): in Sicily, this type of quarry was used for the extraction of calcarenite blocks.

Latomia: in antiquity, this was the term for stone quarries. The Syracuse *latomie*, used by the Siracusians as prisons (*Latomia dei Cappuccini*) during the war between Athens and Sparta in the V century B.C. and quoted by Thucydides, are well-known: captured Athenians and their allies were imprisoned here.

Muchata: in and around Palermo, this dialectal term of Arabic origin, refers to “multiple pillar” extraction, which can take place over two levels.