

Dimension stone

Thomas P. Dolley, the U.S. Geological Survey dimension stone commodity specialist, has compiled the following information on dimension stone, an abundant natural resource that is produced by one of the world's oldest industries.

Well-recognized in architecture around the world, dimension stone is a natural rock material quarried for the purpose of obtaining blocks or slabs that meet size and shape specifications. The color, surface finish, grain texture and pattern of the stone, as well as durability, strength and the ability of the stone to take a polish, are other important selection criteria.

Although numerous varieties of igneous, metamorphic and sedimentary rocks are used as dimension stone, the principal rock types used are granite, limestone, marble, sandstone and slate. Less commonly used rock types are alabaster (massive gypsum) and soapstone (massive talc).

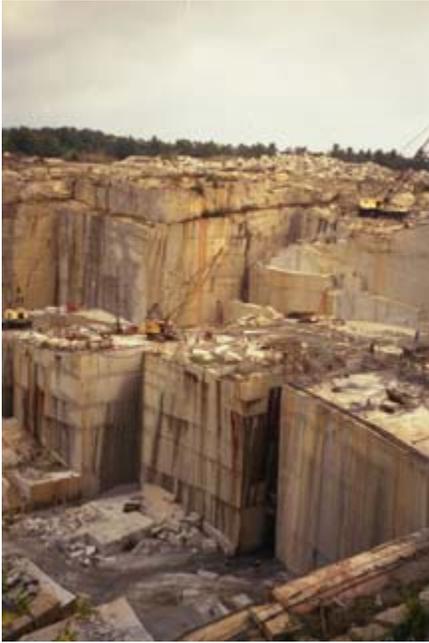
Since antiquity, various civilizations have used dimension stone in many ancient buildings and monuments that have survived to the present day. With the advent of construction methods using reinforced concrete and steel in the 19th and 20th centuries, dimension stone ceased to be a major structural component in building construction. In recent years, most dimension stone has been used in construction applications (about 47 percent), with another major use in monuments, including memorials of various kinds.

In the last two decades, demand has increased for the aesthetic qualities of dimension stone, and the industry slowly has started to exploit and diversify into the growing markets for home improvements, including the use of dimension stone in kitchen countertops, home restoration, historic preservation, and new home and commercial construction.

Production of dimension stone starts with rough stone blocks that are split or cut from a quarry face and are then transported to processing plants that are typically located at the quarry site, at least for preliminary sizing. Final sizing and finishing operations, such as decorating, edging and polishing, may be completed at the quarry site or elsewhere.

Found on every continent on Earth, global resources of dimension stone are virtually limitless. Significant granite and marble resources can be found from Alabama to Maine in the United States. Additionally, the Carrara District in northern Italy has long been a significant producer of marble, along with China and Spain. Granite production and reserves are also significant in Brazil, Canada, China, the Scandinavian countries and South Africa. Worldwide production of dimension stone in 2004 was estimated to be 89 million metric tons.

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The Fletcher Granite Quarry in North Chelmsford, Mass., is one of many dimension stone quarries in the United States. Image from USGS.