



### **Gneiss Stone**

Found on all continents on the Earth, gneiss (pronounced like "nice") is a pervasive kind of metamorphic rock, that is, rock formed through change. Gneiss occurs underneath the surface of the earth or at continental plate boundaries when volcanic rock, shale, sediment or granite are subjected over millions of years to high pressure and intense high heat (but not high enough to cause the rock to melt). The rock has large mineral grains that are arranged in layers, creating characteristic stripes known as gneissic banding. Gneiss rocks are the oldest rocks on earth, dating back over more than four billion years.

There are several types of gneiss, based on the origin, texture, and mineral composition. The diverse colors, texture and sparkle of gneiss depend on the amount of feldspar and quartz and varying amounts of other minerals that are distributed throughout the rock. The dominant mineral components are feldspars, quartz, white mica, black mica, and amphibole. Less common minerals are pyroxene and garnets. Colors range from gray to white, pink, black, green, and brown in varied bands of color, making each stone unique. Gneiss is found on the surface of the Earth as well as ten miles or more deep within the Earth's crust.

The study of gneiss contributes to the understanding of plate tectonics—the evolution and movement of the crustal plates that make up the Earth's surface. As we learn more about the geological and environmental history of our area through the study of rocks, we can discover how the continental crust and mountains were formed. Moreover, gneiss occurs with fossils, which provide clues about ancient life and environments.

Banding in gneiss creates unique lovely patterns and colors. The stone is durable and can be polished. These qualities have attracted the attention of artists, who like to use gneiss to make jewelry, monuments, and sculptures. Gneiss stone is used in home décor, such as countertops and flooring, in decorative stonework in buildings and homes, and in landscaping, also road construction, and building site preparation.

There is a local gneiss quarry in the town of Carmel as well as in many other locations around the world. Environmental problems from quarrying lead to habitat destruction, while dust and waste contribute to air and water pollution. Local municipalities are placing regulations on quarrying practices to help reduce environmental impact.

Gneiss is a beautiful stone that symbolizes strength and endurance.