Minnesota's Stone Industry

By Dennis Martin, Manager
Mineral Potential Section
Division of Lands and Minerals
Minnesota Department of Natural Resources

Due to its diverse geology, Minnesota is famous for beautiful and varied stone products used to construct buildings, memorials, landscapes, infrastructure…and art!

This stone industry is part of a world-class mineral industry that is making a large and essential contribution to Minnesota's economy and way of life. Concurrently, thriving businesses in the mining services provide excavation, drilling, sawing, and polishing equipment, and transportation of products.

Minnesota is the leading producer of iron ore in the US, a product worth well over a billion dollars a year to our economy. Taconite iron ore is mined on the Mesabi Iron Range at the rate of more than 100 million tons per year, and many iron ore by-products are used in construction and landscaping.

Crushed stone is obtained from the limestones, granites, basalt (known as *traprock*) and as a by-product of stone industries. It is used extensively for railroad beds, landscaping, and road-building, as a farm soil amendment, and even as the red material of baseball diamond infields.

Sand and gravel, left throughout the state by the glacial meltwaters of the Ice Age, are mined for construction uses. Minnesota is among the top five producers in the US, with current production close to 100 million tons per year.

White to beige carbonate rocks are mined throughout southeastern Minnesota. *Limestone* is a sedimentary rock largely composed of the calcium carbonate mineral calcite. The more magnesium-rich *dolomite* is also common. Mines near Mankato, Kasota and Winona quarry from a layer known as the *Oneota Dolomite* that produces large, readily workable stone blocks. These blocks are cut and polished into building wall panels and floor tiles and as landscape elements such as walls, steps and benches.

Granite is a quartz and feldspar-rich igneous rock that may be colored pink, red, or gray; *gabbro* is a feldspar-rich igneous rock that is dark in color. Minnesota granites and gabbros are mined near St. Cloud, Rockville, Isle, Ortonville, Morton, Granite Falls, Babbitt, and Isabella. These quarries commonly produce large blocks that are cut and polished into high value products, such as counter tops, floor tiles, wall panels, memorials, and architectural building products. Large granite blocks are also used for erosion control on slopes, along lakeshores, rivers and ditches.

Purple to pink *Sioux Quartzite* is mined near New Ulm, Jeffers, and Jasper. This colorful metamorphosed sandstone is used for landscape stone, construction material, railroad beds, cut stone, poultry grit, abrasive products, and industrial applications.

Silica sand mined near Kasota is sold around the world for use in oil and gas production wells, as well as for use in foundries, sand blasting, and glass making.

Clays mined from pits in the Minnesota River Valley are used to make bricks at a factory at Springfield and to make Portland cement at a factory in Iowa.

Peat harvested in northern Minnesota is used mainly as a horticultural soil amendment. Minnesota is among the top three peat producers in the US.

Pipestone or catlinite is a special claystone that is mined by Native Americans from southwestern Minnesota. It occurs as layers within the Sioux quartzite, and has special characteristics of workability, durability, and heat resistance that make it desirable for making pipes. Minnesota pipestone is on display at the new National Museum of the American Indian in Washington, D.C., along with much Oneota Dolomite.

For more information about Minnesota's minerals industry, consult the Minnesota Department of Natural Resources: http://www.dnr.state.mn.us/

The Artist's Stone

The stone being used by the Symposium artists has been donated by:

- **Biesanz Stone**, www.biesanzstone.com – dolomitic limestone
- **Cliffs Natural Stone**, www.cliffsnaturalstone.net – stromatolitic iron formation
- **Cold Spring Granite**, www.coldspringgranite.com – granite
- **Jasper Stone**, www.jasperstoneco.com – quartzite
- **Mankato Kasota Stone**, www.mankatokasotastone.com – dolomitic limestone
- **Ortonville Stone**, www.lgeverist.com – granite
- **Vetter Stone**, www.vetterstone.com – dolomitic limestone