Aggregate Classification Map of the United States

One of the key factors that determines the performance of diamond saws and drill bits is the type of aggregate in the concrete or asphalt being cut.

"Aggregate" is defined as the stone, gravel and sand used in paving materials like concrete and asphalt. Aggregate may be crushed or uncrushed. Crushed aggregate may be lime stone, granite, sandstone, traprock, etc. Sand and gravel are typically found in natural deposits, like riverbeds, stream courses or lake basins.

Aggregate is generally divided into "fine aggregate" (passes through a No. 4 sieve, 0.187" square opening) and "course aggregate" (almost all of which is retained on a No. 4 sieve and may range in size up to 3" particles).

While recognizing that aggregate size and type can change completely in a short distance on a given project (say a highway), it is generally true that aggregates are similar in certain geographical areas. This is primarily due to local availability of one type of material and the prohibitive cost of importing anything else.

This aggregate map is not intended, nor should it be used to precisely define all aggregate in a given area. Instead, it is published as a **"general guide"** to the predominate aggregate hardness (as it relates to sawablilty) likely to be encountered in the areas defined by the various colors.

It should also be pointed out that **any** aggregate can be sawed. However, the cost of sawing is usually directly related to aggregate hardness and size. This map is simply a reference tool to provide a general sense of aggregate similarity in various areas of the country. A brief description of the predominant aggregate in each state follows.

ALABAMA Aggregates vary from favorable materials such as limestone, sandstone, and blast furnace slag to hard materials such as quartzite and chert. The harder aggregate materials are found in the Central and Southwest sections of the state.

ALASKA The predominate aggregate are gravel and crushed rock and would be classified as medium hard.

ARIZONA A medium-hard gravel aggregate is encountered in most of the state and a medium-soft decomposed granite in some areas in the northern part of the state. The sand content tends to be highly abrasive.

ARKANSAS A medium-hard granite aggregate is encountered in the southern two-thirds of the state and a hard chert river gravel aggregate in the northern and northeastern part of the state.

CALIFORNIA Medium-hard gravel aggregates are encountered in the El Centro through San Diego area as well as in the northern part of the state. A medium to medium-soft aggregate is encountered in the San Clemente, Los Angeles, Paso Robles, Lancaster and Bakersfield area.

COLORADO The northern part of the state has medium to medium-soft aggregate comprised of decomposed granite. The Denver area and southeastern and eastern sections have medium-soft decomposed granite, limestone and gravel. The Colorado Springs areas consists of a medium-hard gravel.

CONNECTICUT Generally the aggregates consist of medium to medium-hard traprock and dolomite.

DELAWARE The major portion of the state contains medium-soft traprock and limestone aggregates. The Wilmington area does produce a medium-hard gravel aggregate.

FLORIDA Generally the aggregates are composed of soft shell and argillaceous, siliceous and dolomitic limestone. The northern area sometimes uses hard Georgia and Alabama aggregates.

GEORGIA Aggregates is the northern part of the state are medium-soft sandstone and limestone. The southern three-quarters of the state has medium-hard to hard granite, schist, gneiss and quartzite aggregates.

HAWAII Aggregate conditions throughout the islands are of the medium-hard, basaltic type.

IDAHO Generally medium-hard crushed stone and gravel aggregates.

ILLINOIS Aggregates in this state may be divided into three sections: the northern area medium to hard gravel, the central section medium gravel and limestone, the southern area soft limestone.

INDIANA The state has generally soft crushed limestone except in southern and northwestern sections where medium-hard Ohio and Wabash river gravel occur.

IOWA In the Des Moines and central Iowa area medium-hard pit and river gravel are typical. Aggregates found in the eastern, central and southwestern sections are soft limestone. The eastern border along the Mississippi River has hard chert river gravel. Medium-hard pit gravel with quartzite is found in the northwestern section.

KANSAS The aggregate conditions generally found are soft limestone. Medium-hard limestone, dolomite and hard chert gravel are found in the southeastern section, and medium-hard pit gravel in the north central area.

KENTUCKY Approximately 90% of the state has aggregates of medium-soft limestone and sandstone. The northern section along the Ohio River has medium-hard quartzite river gravel.

LOUISIANA Aggregate conditions in the state range from soft shell to hard chert.

MAINE In gravel a medium-hard dolomitic gravel and some traprock is encountered in this state.

MARYLAND About 60% of the state has medium-soft limestone aggregate. The balance of the state has medium-hard river gravel.

MASSACHUSETTS The aggregate generally found is medium traprock except in the northern section bordering New Hampshire where the aggregate is medium-hard.

MICHIGAN Generally medium-hard glacial gravel. The Pontiac, Flint, Mount Clemens area contains amounts of hard chert or flint.

MINNESOTA Aggregate in the central and northern part of the state consists of medium-hard glacial gravel. In the southern section medium-soft quarried limestone prevails.

MISSISSIPPI Hard and medium-hard aggregates are found in the southwest section of the state and consist of chert and quartzite.

MISSOURI Soft limestone aggregate predominates on this state with a hard chert aggregate in the St. Louis area (Meramec River gravel) and a similar hard flint aggregate in the Joplin area.

MONTANA The eastern section is a hard aggregate area, the Great Falls area contains a medium-hard gravel and crushed stone aggregate and the Glasgow and Miles City areas have a hard quartz and chert aggregate.

NEBRASKA Eastern and Central sections contain a medium limestone and gravel mixture and the Western areas have a straight medium-hard gravel aggregate.

NEVADA The predominate aggregates are medium to medium-hard gravel and crushed decomposed granite.

NEW HAMPSHIRE Generally medium-hard to hard granite gravel aggregate are encountered.

NEW JERSEY The predominate aggregates are a medium traprock and a hard river gravel.

NEW MEXICO Northern areas contain a medium-soft aggregate shipped in from Colorado. A medium limestone with some quartz aggregate is encountered in the southern part of the state (Gallup, Alamogordo, Deming and Lordsburg). The Tucumcari area has a medium-hard gravel. A medium-hard to hard gravel is encountered in the Albuquerque area.

NEW YORK There are three predominate aggregates in this state, a medium-soft limestone, medium traprock and medium to medium-hard granite gravel.

NORTH CAROLINA Medium-hard and hard aggregates exist throughout the state and consist of granite, schist, gneiss and quartzite. There is some scattering of a medium limestone.

NORTH DAKOTA In general a medium-hard glacial gravel is encountered consisting of limestone, granitic gneiss, basalt, quartzite and chert. In the eastern half of the state the aggregate combinations are medium-soft.

OHIO Generally a medium-soft pit gravel is encountered throughout the state except in the areas along the Ohio River where a medium-hard river bed aggregate is used.

OKLAHOMA Soft limestone is generally encountered except in the western section where a medium-hard granite aggregate is used.

OREGON The western section contains a hard granite hard granite aggregate and on the east side of the mountains a medium crushed gravel is encountered.

PENNSYLVANIA Generally medium-soft limestone and medium traprock aggregate are encountered except in steel mill areas where soft slag might be used. Pit gravel is commonly used in the Philadelphia area.

RHODE ISLAND A medium hard traprock aggregate is generally used throughout the state.

SOUTH CAROLINA Predominately the aggregates consist of medium-hard quartzite, granite and gneiss with some limited amounts of medium-soft crushed limestone and marble.

SOUTH DAKOTA There are three types of aggregate encountered in this state. The eastern area consists of hard quartzitic aggregate, the central portion has a medium-hard gravel aggregate and soft limestone aggregates in the western section.

TENNESSEE In general medium-hard aggregates are encountered throughout the state with some medium-hard quartzites west of Nashville and hard chert aggregates along the Mississippi River.

TEXAS The predominant aggregates encountered consist of medium-soft limestone and dolomite with some medium-hard quartzite around the San Antonio area and hard chert along the Gulf Coast.

UTAH Aggregates consist of medium-hard gravel throughout the state.

VERMONT In general medium to medium-hard granitic gravel aggregate is encountered throughout the state. Large aggregate is often encountered.

VIRGINIA Medium-hard granite aggregates are normally encountered throughout the state with medium-hard to hard river gravel in the Norfolk and Washington area.

WASHINGTON Medium to medium-hard gravel and crushed stone aggregates are encountered on the eastern side of the mountains and hard gravel aggregate on the western side and in the Seattle and Tacoma area.

WEST VIRGINIA The predominate aggregates consist of a medium-soft limestone, except along the Kanawha River where medium-hard to hard river gravel aggregates are used.

WISCONSIN The southern section of the state contains medium-soft limestone and gravel aggregates. The northern sections have a medium-soft glacial aggregate.

WYOMING Medium to medium-soft limestone and crushed rock are encountered throughout the state.