

# STONE, CRUSHED

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Crushed stone is one of the most accessible natural resources and a major basic raw material used by construction, agriculture, and other industries using complex chemical and metallurgical processes. Despite the relative low value of its basic products, the crushed stone industry is a major contributor to and an indicator of the economic well-being of the Nation.

A total of 1.42 billion metric tons of crushed stone was produced for consumption in the United States in 1997, a 7.1% increase compared with the total production of 1996. This tonnage represents the highest production level ever recorded in the United States, indicating a continued increase in the demand for construction aggregates. (*See table 1.*)

About three-quarters of the crushed stone production continued to be limestone and dolomite, followed, in descending order of tonnage, by granite, traprock, sandstone and quartzite, miscellaneous stone, marble, slate, calcareous marl, shell, and volcanic cinder and scoria. (*See table 2.*)

Foreign trade of crushed stone continued to remain relatively small. Exports increased 25.2% to 4.1 million tons, and the value increased 17.7% to \$42.7 million compared with that of 1996.

Imports of crushed stone, including calcium carbonate, increased 10% to 12.4 million tons, and the value increased 15% to \$105.6 million. Domestic apparent consumption of crushed stone, which is defined as production for consumption (sold or used) plus imports minus exports, was 1.43 billion tons. (*See tables 1, 22, and 23.*)

## Legislation

The Transportation Equity Act for the 21<sup>st</sup> Century (Public Law 105-178) was signed by the President on June 9, 1998. The act appropriated \$205 billion through year 2003, a 44% increase compared to the previous Intermodal Surface Transportation Efficiency Act (ISTEA) legislation. The new law guarantees that \$165 billion will be obligated for highways and \$35 billion for transit work. The guaranteed amounts are linked to actual Highway Trust Fund receipts and can only be used for highways and highway safety programs. The States are also guaranteed a return of at least 90.5% of their contributions to the Highway Trust Fund. The law introduced a number of procedural reforms that should reduce delays in road-building project approval. These reforms include streamlining the environmental review process, the elimination of programmatic responsibilities of regional Departments of Transportation, and improved project approval process that gives States more responsibility on non-Interstate projects. The legislation also established timetables for determining if States are complying with the Environmental Protection Agency's new air quality standards for particulate matter, also known as PM 2.5, and ozone.

The Balanced Budget Act of 1997 (Public Law 105-33) was

signed by the President on August 5, 1997. The law included a provision to transfer the entire 4.3¢ gas tax back to the Highway Trust Fund and redirect the revenue from the 4.3¢ aviation fuel tax to the Aviation and Airway Trust Fund. It was estimated that as a result of this provision, \$6 to \$7 billion annually will be transferred into the Highway Trust Fund.

## Production

Domestic production data for crushed stone are derived by the U.S. Geological Survey (USGS) from voluntary surveys of U.S. producers.

Of the 4,134 crushed stone operations surveyed, 3,078 operations with 3,362 quarries owned by 1,411 companies were active. Of these, 2,427 operations with 2,646 quarries, representing 78.8% of the total number of active operations, reported to the USGS. Their total production represented 86.4% of the total U.S. crushed stone output. Of the 2,427 reporting operations, 502 operations with 510 quarries owned by 77 companies did not report a breakdown by end use. Their production represented 29.3% of the U.S. total and is included in table 13 under "Unspecified, actual" uses. The nonrespondents' production was estimated using employment data and/or adjusted production reports from prior years. The estimated production from 651 nonresponding operations owned by 446 companies represented 13.6% of the U.S. total and is included in table 13 under "Unspecified, estimated" uses.

A total of 912 quarries were either idle or presumed to have been idle in 1997 because no information was available to estimate their production. Since the 1996 survey, 108 operations were closed down. Most of the idle or closed operations were small, temporary quarries usually operated by State or local governments. Operations located in the U.S. territories are not included in the above count.

A total of 1.42 billion tons of crushed stone was produced for consumption in the United States in 1997, a 7.1% increase compared with the 1996 total. (*See table 1.*) Of this total, 1.01 billion tons, or 71.2%, was limestone and dolomite; 222 million tons, or 15.6%, was granite; and 100 million tons, or 7%, was traprock. The remaining 89 million tons, or 6.2%, was shared, in descending order of quantity, by sandstone and quartzite, miscellaneous stone, marble, slate, calcareous marl, shell, and volcanic cinder and scoria. (*See table 2.*)

A comparison of the four geographic regions of the United States indicates that, in 1997, the South continued to lead the Nation in the production of crushed stone with 666 million tons, or 46.8%, of the total, followed by the Midwest with 427 million tons, or 29.9%, and the Northeast with 189 million tons, or 13.3%. About 77% of the total U.S. crushed stone output was produced in two geographic regions, the South and the Midwest.

(See table 3.)

Of the nine geographic divisions, the South Atlantic led the Nation in the production of crushed stone with 348 million tons, or 24.4%, of the U.S. total. It was followed by the East North Central division with 271 million tons, or 19%, and the East South Central with 170 million tons, or 12%.

A comparison of the production data by the nine geographic divisions for 1996 and 1997 indicates that the output of crushed stone increased in all regions. The largest percentage increases were recorded in the Mountain division, +12.3%; the New England division, +12.3%; and the East South Central division, +9.7%.

Crushed stone was produced in every State except Delaware and North Dakota. The 10 leading States in the production of crushed stone were, in descending order by volume, Pennsylvania, Texas, Florida, Ohio, Virginia, Missouri, Georgia, Illinois, North Carolina, Kentucky, and Tennessee. Their combined production represented 50.3% of the national total.

Crushed stone was produced by 1,411 companies at 3,078 operations with 3,362 quarries. Leading U.S. producing companies were, in descending order by volume, Vulcan Materials Co., Martin-Marietta Aggregates, Cornerstone Construction & Materials, Inc., CSR America, Inc., and Lafarge Corp.

In late January, Martin Marietta Materials, Inc., of Raleigh, NC, announced that it was in the process of buying the Ohio and Indiana operations of American Aggregates Corp. of Dayton, OH, a subsidiary of CSR America, Inc. of Atlanta, GA. The transaction included about 25 production facilities and a significant amount of aggregates reserves. The acquisition was completed in May 1997 (Aggregates Manager, 1997).

In May, Redland Aggregates North America of Denver, CO, acquired Frontier Stone, Inc. of Lockport, NY. The purchase included two limestone quarries, one in Lockport, NY, and one in Gasport, NY, plus four asphalt plants. The Frontier operations were combined with Redland Niagara Division consisting of a quarry and two asphalt plants in Niagara Falls, NY, to form Redland Quarries NY, based in Lockport, NY (Rock Products, 1997).

Also in May, Martin Marietta Materials, Inc., of Raleigh, NC, announced that it acquired from Hardin County Materials three quarries in Hardin County, IL, a quarry from Rock Dust Products in Fredonia, KY, and from Nuckolls Aggregates a limestone quarry and six sand and gravel pits in north central Iowa (Pit & Quarry, 1997).

In September, Cornerstone Construction & Materials, Inc. reorganized its Benchmark Materials Division into three operating regions: Northeast, based in Easton, PA; Midwest, based in Louisville, KY; and Southeast, based in Atlanta, GA (Rock Products, 1997b).

In July, Vulcan Materials Co. of Birmingham, AL, announced that it purchased the assets of L & R Quarries, Inc., of Floyd, AR (Pit & Quarry, 1997c).

In December, Vulcan Materials Co. of Birmingham, AL, announced that it purchased a quarry from Capitol Rock Inc. of Franklin, GA, and two quarries, one in Atlanta, GA, and one near Rockmart, GA, from C.W. Matthews Quarries Inc. of Kennesaw, GA. These three quarries will become part of Vulcan's Southeast

Division, headquartered in Atlanta, GA. Vulcan Materials Co. also announced that it purchased two quarries southeast of Dallas, TX, between Waco and Tyler, from Smith Materials of McKinney, TX. These two quarries will become part of Vulcan's Southwest Division, headquartered in San Antonio, TX (Pit & Quarry, 1997b).

Vulcan Materials Co. also announced that Vulcan/ICA Distribution Co., the joint-venture company that exports to the United States and distributes limestone produced at Vulcan/ICA Calica, Mexico, quarry, began building a multimaterial grinding facility in Houston, TX. The plant will use Mexican limestone to produce high-purity, ground calcium carbonate for plastics, adhesives, paints, wallboard-joint compound, and flooring industries. The plant was scheduled to start producing in the second quarter of 1998 (Rock Products, 1997c).

Also in December, after a long and complicated battle, Lafarge S.A. of Paris, France, acquired the UK-based building materials group, Redland PLC of Reigate, Surrey, England. This acquisition allowed Lafarge to enter the UK market for the first time and also made the company the world's no. 1 producer of aggregates and no. 2 producer of concrete (Rock Products, 1998).

**Limestone.**—The 1997 output of crushed limestone, including some dolomite, increased by 5.5% to 916 million tons valued at \$4.8 billion compared with the revised 1996 total. (See table 2.) In addition to the quarries reporting only limestone, 65 operations with 68 quarries reported producing limestone and dolomite without making a distinction between the two kinds of stone. Their combined production, 31.1 million tons, was included with the limestone. The limestone totals shown in this chapter, therefore, include an undetermined amount of dolomite in addition to the dolomite reported separately.

Limestone was produced by 819 companies at 1,835 operations with 1,990 quarries in 48 States. In addition, 47 companies with 65 operations and 68 quarries reported producing limestone and dolomite from the same quarries.

The leading producing States were, in descending order of tonnage, Texas, Florida, Missouri, Kentucky, and Illinois; these five States accounted for 36.4% of the total U.S. output. (See table 8.) The leading producers were, in descending order of tonnage, Vulcan Materials Co., Martin Marietta Aggregates, Cornerstone Construction & Materials, Inc., CSR America, Inc., and Rogers Group, Inc.

**Dolomite.**—Production of dolomite decreased by 8.5% to 98 million tons valued at \$547 million, compared with the revised 1996 total. (See table 2.) Crushed dolomite was reportedly produced by 106 companies at 177 operations with 192 quarries in 26 States. An additional undetermined amount of dolomite is included in the total crushed limestone.

The leading producing States were, in descending order of tonnage, Ohio, Pennsylvania, New York, Illinois, and Michigan; these five States accounted for 55.5% of the total U.S. output. (See table 8.) The leading producers were Oldcastle Inc., Cornerstone Construction & Materials, Inc., S.E. Johnson Co., ASARCO Incorporated/American Limestone Co., and Bardon Group, Inc.

**Marble.**—Production of crushed marble increased by 9.5% to 7.4 million tons valued at \$102 million, compared with 1996. (See table 2.) Crushed marble was produced by 14 companies with 25 operations and 33 quarries in 11 States. (See table 9.) The

leading producers of crushed marble were, in descending order of tonnage, Dry Branch Kaolin, Florida Rock Industries, Inc., Pluess Stauffer, Inc., CAMAS America, Inc., and Vulcan Materials Co.

**Calcareous Marl.**—Output of marl decreased by 8% to 3.3 million tons valued at \$10.3 million, compared with the 1996 total. (See table 2.) Marl was produced by eight companies with eight quarries in five States. (See table 9.) The leading producers were, in descending order of tonnage, Capitol Aggregates Inc., Giant Group Ltd., and Blue Circle America, Inc.

**Shell.**—Shell is derived mainly from fossil reefs or oyster shell. The output of crushed shell increased by 49.4% to 2.6 million tons valued at \$8.9 million, compared with 1996. (See table 2.) Crushed shell was produced by nine companies with nine operations in five States. The leading producers were, in descending order of tonnage, Holderbank/Holnam, Inc., Quality Aggregates, Inc., and Panther Crushing, Inc.

**Granite.**—The output of crushed granite increased by 13.8% to 222 million tons valued at \$1.5 billion. (See table 2.) Crushed granite was produced by 145 companies at 316 operations with 319 quarries in 36 States.

The leading States were, in descending order of tonnage, Georgia, North Carolina, Virginia, South Carolina, and Arkansas; these five States accounted for 73.4% of the U.S. output. (See table 10.) The leading producers were, in descending order of tonnage, Vulcan Materials Co., Martin Marietta Aggregates, Luck Stone Corp., Florida Rock Industries, Inc., and Blue Circle America, Inc.

**Traprock.**—Production of crushed traprock increased by 4.3% to 99.7 million tons valued at \$632 million. (See table 2.) Traprock was produced by 240 companies at 350 operations with 410 quarries in 26 States.

The leading States were, in descending order of tonnage, Oregon, New Jersey, Virginia, California, and Washington; these five States accounted for 64.1% of U.S. output. (See table 10.) Leading producers were, in descending order of tonnage, Vulcan Materials Co., Oldcastle, Inc., Luck Stone Corp., Mac Acquisitions LP, and Stavola, Inc.

**Sandstone and Quartzite.**—The combined output of crushed sandstone and quartzite increased by 2% to 39.1 million tons valued at \$242 million. (See table 2.) Crushed sandstone was produced by 101 companies at 126 operations with 142 quarries in 35 States, and crushed quartzite was produced by 34 companies at 36 operations with 49 quarries in 19 States.

The leading producing States were, in descending order of tonnage of sandstone and quartzite, Arkansas, Pennsylvania, Oklahoma, South Dakota, and New York; their combined production accounted for 55% of the U.S. output. (See table 10.) The leading producers of sandstone were, in descending order of tonnage, Ashland Oil, Inc./APAC, Inc., Martin Marietta Aggregates, and Meridian Aggregates Co.; leading producers of quartzite were Oldcastle Inc., Nova Materials Inc., and L.G. Everist, Inc.

**Slate.**—The output of crushed slate increased by 24.3% to 3.4 million tons valued at \$28.7 million. (See table 2.) Crushed slate was produced by 13 companies at 15 operations with 15 quarries in 10 States.

Most of the crushed slate was produced in North Carolina. The leading producers were, in descending order of tonnage, Martin

Marietta Aggregates, Vulcan Materials Co., and Gohmann Asphalt & Construction, Inc.

**Volcanic Cinder and Scoria.**—Production of volcanic cinder and scoria increased 5% to 2.2 million tons valued at \$14.8 million. (See table 2.) Volcanic cinder and scoria were produced by 23 companies from 26 operations with 26 quarries in 12 States.

The leading producing States were, in descending order of tonnage, New Mexico, Washington, and Arizona; their combined production accounted for 27.8% of the total U.S. output. (See table 11.) Leading producers were, in descending order of tonnage, Martin Marietta Aggregates, Stoney Point Rock Quarry, Inc., and Bishop Red Rock, Inc.

**Miscellaneous Stone.**—Output of other kinds of crushed stone increased by 24.4% to 31.1 million tons valued at \$195 million. (See table 2.) Miscellaneous stone was produced by 67 companies at 89 operations with 99 quarries in 32 States.

The leading producing States were, in descending order of tonnage, Pennsylvania, California, and Utah; their combined production accounted for 43% of the total U.S. output. (See table 11.) Leading producers were, in descending order of tonnage: U.S. Bureau of Land Management, Haines & Kibblehouse, Inc., Better Materials Corp., L.G. Everist, Inc., and Oldcastle Inc.

## Consumption

Crushed stone production reported to the USGS is actually material that was either sold or used by producers. Stockpiled production is not included in the reported quantities. The “sold or used” tonnage, therefore, represents the amount of production released for domestic consumption or export in a given year. Because some of the crushed stone producers did not report a breakdown by end use, their total production is included in “Unspecified, actual” use. The estimated production of nonrespondents is included in “Unspecified, estimated” use.

In 1997, U.S. consumption of crushed stone was 1.42 billion tons, a 7.1% increase compared with that of 1996. Of the 1.42 billion tons of crushed stone consumed, 611 million tons or 42.9% of the total was “Unspecified, actual and estimated” uses. Of the remaining 813 million tons reported by uses by the producers, about 82.8% was used as construction aggregates, mostly for highway and road construction and maintenance; 14.3%, for chemical and metallurgical uses, including cement and lime manufacture; 1.6%, for agricultural uses; and 1% for special uses and products. (See table 13.) To provide a more accurate estimation of the consumption patterns for crushed stone, the “Unspecified” uses are not included in the above percentages. It is recommended that in any use pattern study or marketing analysis, the quantities included in “Unspecified” uses be distributed among the reported uses by applying the above percentages to the “Unspecified” uses, total.

**Limestone.**—Of the 916 million tons of crushed limestone consumed, 375 million tons or 41%, was “Unspecified, actual and estimated” uses. Of the remaining 540 million tons of crushed limestone reported by uses, 76.5%, was used as construction aggregates; 20.3%, for chemical and metallurgical uses including cement and lime manufacturing; 2%, for agricultural uses; and 1.1% for special uses and products. (See table 14.)

**Dolomite.**—Of the 98.2 million tons of crushed dolomite

consumed, 34.8 million tons or 35.5%, was “Unspecified, actual and estimated” uses. Of the remaining 63.4 million tons of crushed dolomite reported by uses, 91%, was used as construction aggregates; 4.3%, for chemical and metallurgical uses; 3.2%, for agricultural uses; and 1.5%, for special and miscellaneous uses. An additional undefined amount of dolomite consumed in a variety of uses, mostly construction aggregates, is reported with the limestone. (See table 14.)

**Marble.**—Of the 7.4 million tons of crushed marble consumed, 4.7 million tons, or 63.7%, was reported as “Unspecified, actual and estimated” uses. Of the remaining 2.7 million tons of crushed marble reported by uses, 1.6 million tons, or 60.1%, was used as construction aggregates; 1 million tons, or 38.3%, as special and miscellaneous uses, including fillers and extenders; and 44,000 tons, or 1.6%, for chemical and metallurgical purposes. (See table 16.)

**Calcareous Marl.**—Of the 3.3 million tons of crushed calcareous marl consumed, only 19,000 tons was estimated. Of the crushed calcareous marl consumed, 2.8 million tons or 84.2% was used for cement manufacturing, and 427,000 or 12.8% was used as construction aggregates.

**Shell.**—Of the 2.6 million tons of crushed shell consumed, 1.1 million tons, or 44.1% was reported as “Unspecified, actual and estimated” uses. Of the remaining 1.4 million tons, 1.2 million tons, or 86.5%, was used as construction aggregates.

**Granite.**—Of the 222 million tons of crushed granite consumed, 116 million tons, or 52%, was reported as “Unspecified, actual and estimated” uses. The remaining 106 million tons was used as construction aggregates. (See table 17.)

**Traprock.**—Of the 99.7 million tons of crushed traprock consumed, 32.9 million tons, or 33%, was reported as “Unspecified, actual and estimated” uses. The remaining 66.8 million tons or 67% was used as construction aggregates. (See table 17.)

**Sandstone and Quartzite.**—Of the 27.1 million tons of crushed sandstone consumed, 16 million tons, or 58.9%, was reported as “Unspecified, actual and estimated” uses. Of the remaining 11 million tons of crushed sandstone reported by uses, 10.8 million tons or 98%, was used as construction aggregates. (See table 18.)

Of the 12 million tons of crushed quartzite consumed, 5.7 million tons or 48% was reported as “Unspecified, actual and estimated” uses. Of the remaining 6.2 million tons of crushed quartzite reported by uses, 86.8% was used as construction aggregates. (See table 18.)

**Volcanic Cinder and Scoria.**—Of the 2.2 million tons of volcanic cinder and scoria consumed, 763,000 tons or 35.1% was reported as “Unspecified, actual and estimated” uses. Of the remaining 1.4 million tons of crushed volcanic cinder and scoria, 93.3% was used as construction aggregates. (See table 19.)

**Miscellaneous Stone.**—Of the 40.4 million tons of miscellaneous crushed stone consumed, 25 million tons, or 61.8%, was reported as “Unspecified, actual and estimated” uses. Of the remaining 15.4 million tons reported by uses, 11.5 million tons, or 74.5%, was used as construction aggregates, and 2.8 million tons, or 18.3%, was used for cement manufacturing. (See table 19.)

## Recycling

As the recycling of most waste materials increases, aggregates producers are recycling more cement concrete and asphalt concrete materials recovered from construction projects to produce concrete aggregates and asphalt aggregates. The annual survey of crushed stone producers now collects information on recycling of cement and asphalt concretes produced by the crushed stone producers only. Information on recycling of these materials by construction or demolition companies is not collected by the USGS.

**Asphalt Concrete.**—A total of 1.7 million tons of asphalt concrete valued at \$9.1 million was recycled by 41 companies in 18 States. This volume represents a 28.6% increase compared with that of 1996. (See tables 20 and 21.) The leading recycling States were, in descending order of tonnage, Massachusetts, New Jersey, and Wisconsin. The leading recycling companies were, in descending order of tonnage produced, Aggregates Industries, Inc., Oldcastle Inc., and Wilburn Lime Products, Inc.

**Cement Concrete.**—A total of 638,000 tons of cement concrete valued at \$3.9 million was recycled by 36 companies in 20 States. This tonnage represents a 45.5% decrease compared with that of 1996. (See tables 20 and 22.) The leading recycling States were, in descending order of tonnage, Virginia and Minnesota. The leading companies were, in descending order of tonnage produced, Vulcan Materials Co., Edward Kramer and Sons, and Dolomite Products Co., Inc.

## Prices

Prices in this chapter are f.o.b. plant, usually at the first point of sale or captive use. This value does not include transportation from the plant or yard to the consumer. It does, however, include all costs of mining, processing, in-plant transportation, overhead costs, and profit.

The average unit price per ton of crushed stone increased by 4.8% to \$5.66, compared with that of 1996. The average unit prices, by kind of stone, showed mostly modest increases of between 2% for slate to 7.5% for miscellaneous stone, as well as decreases for marl (-1.8%), and shell (-11.3%). The unit value of crushed marble showed a significant increase (73.7%) due to information reported for the first time by two calcium carbonate producers. (See table 2.)

## Transportation

For 646 million tons, or 45.5%, of the total 1.42 billion tons of crushed stone produced for consumption in 1997, no means of transportation was reported by the producers. Of the remaining 774 million tons of crushed stone, 610 million tons, or 78.8%, was reported as being transported by truck from the processing plant or quarry to the first point of sale or use; 5.4%, by rail; and 3%, by waterway, and 2.7% by other means. About 7.9% of the specified production was reported as not having been transported and, therefore, is assumed that it was used on-site. Information

regarding means of transportation used by the producers to ship crushed stone in each geographic region is provided in table 23.

## Foreign Trade

The widespread distribution of domestic crushed stone deposits and the high cost of transportation limits foreign trade to mostly local transactions across international boundaries. U.S. imports and exports are small, representing less than 1% of the domestic consumption. Shipments of crushed stone by water from Canada and especially Mexico, however, continue to increase.

**Exports.**—Exports of crushed stone increased by 25.2% to 4.1 million tons compared with that of 1996, and the value increased by 17.7% to \$42.7 million. About 95% of the exported crushed stone was limestone. Canada was the major destination with 78.3% of the total crushed stone, followed by Japan with 4.7%. (See table 25.)

**Imports.**—Imports of crushed stone increased by 10% to 12.4 million tons compared with that of 1996, and the value increased by 15% to \$106 million. About 94.1% of the imported crushed stone was limestone. Imports of natural calcium carbonate fines increased from 3,000 to 4,000 tons. (See table 26.)

Shipments of crushed stone from The Bahamas, Canada, and Mexico into the United States continued in 1997. The imported crushed stone was used mostly as construction aggregates or for cement manufacturing. This trend is expected to continue, and the volume of imports, especially from Mexico, is expected to increase.

## Outlook

The demand for crushed stone in 1998 is expected to be about 1.5 billion tons, a 5% increase over that of 1997. Gradual increases in demand for construction aggregates are anticipated after 1998 as well, on the basis of the volume of work on the infrastructure that will be financed by the new Transportation Equity Act for the 21<sup>st</sup> Century, and the U.S. economy in general. The projected increases will be influenced by construction activity in the public, as well as the private construction sectors.

Crushed stone f.o.b. prices are not expected to increase significantly. The delivered prices of crushed stone are, however, expected to increase, especially in and near metropolitan areas, mainly because more aggregates are transported from distant sources.

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TABLE 1  
SALIENT CRUSHED STONE STATISTICS 1/

(Thousand metric tons and thousand dollars)

	1993	1994	1995	1996	1997
Sold or used by producers:					
Quantity 2/	1,120,000	1,230,000	1,260,000	1,330,000	1,420,000
Value 2/	\$5,930,000	\$6,620,000	\$6,740,000	\$7,180,000	\$8,070,000
Exports value	\$39,300	\$38,100	\$39,300	\$36,300	\$42,700
Imports 3/ do.	\$74,300	\$77,800	\$91,900	\$91,800	\$106,000

1/ Data are rounded to three significant digits.

2/ Does not include American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands.

3/ Excludes precipitated calcium carbonate.

TABLE 2  
CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY KIND 1/

Kind	1996				1997			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	2,060	868,000 r/	\$4,370,000 r/	\$5.03 r/	2,060	916,000	\$4,780,000	\$5.22
Dolomite	189 r/	90,500 r/	472,000 r/	5.22 r/	192	98,200	547,000	5.57
Marble	50 r/	6,760 r/	53,700 r/	7.95 r/	33	7,400	102,000	13.81
Shell	8 r/	1,720 r/	6,720 r/	3.90 r/	9	2,570	8,890	3.46
Granite	346 r/	195,000 r/	1,280,000 r/	6.55 r/	319	222,000	1,500,000	6.76
Traprock	564 r/	95,600 r/	580,000 r/	6.06 r/	410	99,700	632,000	6.34
Sandstone and quartzite	208 r/	38,400 r/	226,000 r/	5.89 r/	191	39,100	242,000	6.18
Slate	20 r/	2,760 r/	22,600 r/	8.19 r/	15	3,430	28,700	8.35
Calcareous marl	11	3,640	11,400	3.15	8	3,350	10,300	3.09
Volcanic cinder and scoria	78 r/	2,070 r/	13,500 r/	6.54 r/	26	2,170	14,800	6.80
Miscellaneous stone	119 r/	25,000 r/	146,000 r/	5.83 r/	99	31,100	195,000	6.27
Total	XX	1,330,000	7,180,000	5.40	XX	1,420,000	8,070,000	5.66

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes limestone-dolomite reported with no distinction between the two kinds of stone.

TABLE 3  
CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY REGION 1/ 2/

(Thousand metric tons and thousand dollars)

Region/Division	1996		1997	
	Quantity	Value	Quantity	Value
Northeast:				
New England	28,800	203,000	32,300	231,000
Middle Atlantic	152,000	896,000	156,000	975,000
Midwest:				
East North Central	249,000	1,170,000	271,000	1,320,000
West North Central	148,000	765,000	156,000	832,000
South:				
South Atlantic	319,000	1,950,000	348,000	2,210,000
East South Central	155,000	758,000	170,000	948,000
West South Central	145,000	647,000	148,000	667,000
West:				
Mountain	39,100	229,000	48,400	276,000
Pacific	93,500	573,000	94,500	611,000
Total	1,330,000	7,180,000	1,420,000	8,070,000

1/ Includes volcanic cinder and scoria.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4  
CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997,  
BY QUARTER AND DIVISION 1/

Region/Division	Quantity 1st quarter		Quantity 2d quarter		Quantity 3d quarter		Quantity 4th quarter		Total 3/ (thousand metric tons)	Value total 3/ (thousands)
	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/		
Northeast:										
New England	2,200	27.3	8,400	-1.9	11,000	8.3	8,300	--	29,900	\$199,000
Middle Atlantic	21,300	22.5	45,900	9.7	54,900	7.3	40,900	-2.6	163,000	961,000
Midwest:										
East North Central	34,000	28.4	71,000	8.3	87,200	-0.9	71,400	4.6	264,000	1,240,000
West North Central	25,400	15.1	44,700	13.2	49,300	4.2	40,700	5.1	160,000	833,000
South:										
South Atlantic	69,800	19.4	88,100	1.0	90,700	4.7	79,700	-1.0	328,000	1,990,000
East South Central	29,000	14.4	43,600	2.9	49,800	5.1	42,100	6.2	164,000	820,000
West South Central	28,700	-14.6	37,700	6.0	40,600	4.1	36,100	2.3	143,000	642,000
West:										
Mountain	7,100	7.1	11,600	7.2	12,300	5.4	10,900	11.7	41,800	241,000
Pacific 4/	17,700	7.5	21,600	--	25,600	4.9	23,400	7.7	88,200	503,000
Total 5/	235,300	13.0	372,600	5.6	421,300	3.9	353,400	2.7	1,400,000	7,560,000

1/ As published in the "Crushed Stone and Sand and Gravel in the Fourth Quarter of 1997 Mineral Industry Surveys."

2/ All percentage changes are calculated by using unrounded totals. Percentage changes are based on the corresponding quarter of the previous year.

3/ Data may not add to totals shown because of independent rounding and differences between projected totals by States and by regions.

4/ Does not include Alaska and Hawaii.

5/ Includes Alaska, Hawaii, and "Other;" see table 6.

TABLE 5  
CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/ 2/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	38,900	\$198,000	\$5.09	42,000	\$273,000	\$6.51
Alaska 3/	2,600 4/ 5/	16,500 4/ 5/	6.35	3,340 4/ 6/ 7/	23,500 4/ 6/ 7/	7.06
Arizona	6,800	40,600	5.97	7,490	44,000	5.86
Arkansas	26,400	158,000	5.96	28,100	167,000	5.94
California	46,700	295,000	6.31	49,600	325,000	6.56
Colorado	9,940	64,900	6.54	9,720	60,800	6.26
Connecticut	6,720	55,000	8.19	5,760	55,300	9.60
Florida	73,600 8/	394,000 8/	5.35	73,800 8/	396,000 8/	5.37
Georgia	63,400 9/	401,000 9/	6.33	65,300 9/	429,000 9/	6.56
Hawaii	6,580 r/	77,700 r/	11.82	5,560	59,500	10.71
Idaho	3,960 10/	20,900 r/ 10/	5.28 r/	3,910 10/	18,700 10/	4.78
Illinois	66,500	364,000	5.47	65,700	357,000	5.44
Indiana	53,700 7/	254,000 7/	4.73	59,000 7/	280,000 7/	4.75
Iowa	34,400	202,000	5.88	37,300	215,000	5.76
Kansas	22,100	110,000	4.96	23,000	116,000	5.04
Kentucky	58,500 6/	243,000 6/	4.15	62,700 6/	292,000 6/	4.65
Louisiana	2,290 10/	23,900 10/	10.44	4,870 10/	32,200 10/	6.62
Maine	2,760	14,800	5.38	2,540	15,100	5.93
Maryland	22,400 9/ 11/	142,000 9/ 11/	6.33	24,500 9/ 11/ 14/	160,000 9/ 11/ 14/	6.52
Massachusetts	11,800 10/	91,600 10/	7.77	12,200 10/	91,300 10/	7.46
Michigan	38,600 5/ 10/	144,000 5/ 10/	3.72	42,000 5/ 10/	157,000 5/ 10/	3.74
Minnesota	12,100	59,000	4.88	14,600	75,000	5.15
Mississippi	2,180 8/	9,300 8/	4.26	5,180 8/	32,900 8/	6.36
Missouri	67,000	325,000	4.85	68,500	350,000	5.11
Montana	2,000	8,580	4.29	2,600	10,600	4.09
Nebraska	6,370	39,800	6.25	6,900	46,000	6.67
Nevada	3,080	25,200	8.18	5,150	41,800	8.12
New Hampshire	1,430 12/	8,650 12/	6.06	1,970 6/ 12/	12,300 6/ 12/	6.23
New Jersey	21,400	145,000	6.79	22,800	153,000	6.71
New Mexico	3,480 11/ 13/	18,800 11/ 13/	5.42	2,920 11/	15,700 11/	5.36
New York	43,600	233,000	5.34	44,400	285,000	6.43
North Carolina	57,200	394,000	6.89	63,700	464,000	7.28
Ohio	63,600	291,000	4.57	74,100	397,000	5.36
Oklahoma	28,300 11/ 14/	117,000 11/ 14/	4.14	31,900 10/ 11/ 14/	112,000 10/ 11/ 14/	3.52
Oregon	22,000	102,000	4.65	21,200	110,000	5.17
Pennsylvania	87,400	518,000	5.92	89,200	536,000	6.01
Rhode Island	1,440	9,680	6.74	1,830	11,500	6.30
South Carolina	23,800	146,000	6.15	25,900	202,000	7.79
South Dakota	5,640	28,700	5.09	5,900	30,200	5.11
Tennessee	55,100	305,000	5.53	60,400	349,000	5.79
Texas	86,500	341,000	3.94	81,200	347,000	4.27
Utah	4,380	19,100	4.35	11,100	50,200	4.51
Vermont	4,560	22,800	5.01	7,840	44,500	5.67
Virginia	59,700	351,000	5.87	72,800	428,000	5.88
Washington	15,400	81,400	5.27	14,700	92,200	6.25
West Virginia	12,700 15/	78,400 15/	6.16	12,900 15/	76,700 15/	5.95
Wisconsin	26,000	113,000	4.34	28,700	120,000	4.16
Wyoming	5,180	30,000	5.79	5,010	30,700	6.13
Other	9,400	53,000	5.64	13,000	74,700	5.76
Total	1,330,000	7,180,000	5.40	1,420,000	8,070,000	5.66

See footnotes at end of table.



TABLE 5--Continued

CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/ 2/

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r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ To avoid disclosing company proprietary data, certain State totals do not include all kinds of stone produced within the State; the portion not shown has been included with "Other."

3/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys information.

4/ Excludes limestone-dolomite.

5/ Excludes granite.

6/ Excludes sandstone.

7/ Excludes slate.

8/ Excludes calcareous marl.

9/ Excludes marble.

10/ Excludes other.

11/ Excludes traprock.

12/ Excludes limestone.

13/ Excludes quartzite.

14/ Excludes shell.

15/ Excludes dolomite.

TABLE 6  
CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997,  
BY QUARTER AND STATE 1/

State	Quantity 1st quarter (thousand metric tons)	Percentage change 2/	Quantity 2d quarter (thousand metric tons)	Percentage change 2/	Quantity 3d quarter (thousand metric tons)	Percentage change 2/	Quantity 4th quarter (thousand metric tons)	Percentage change 2/	Total 3/ (thousand metric tons)	Value total 3/ (thousands)
Alabama	8,200	5.6	10,100	-5.3	10,200	-4.9	10,000	2.7	38,500	\$196,000
Alaska 4/ 5/	--	--	--	--	--	--	--	--	2,800	17,800
Arizona 6/	--	--	--	--	--	--	--	--	6,170	36,900
Arkansas	5,000	-10.1	7,400	7.4	8,700	17.4	7,500	14.8	28,600	171,000
California	10,100	12.6	12,600	6.7	14,300	1.7	14,900	25.3	51,800	328,000
Colorado	2,000	46.8	2,700	-13.3	2,900	-0.8	2,300	-11.4	9,850	64,300
Connecticut	200	7.8	1,600	-33.1	2,000	-32.4	1,500	10.5	5,160	42,400
Delaware 4/	--	--	--	--	--	--	--	--	--	--
Florida 5/	17,000	-9.2	17,300	-7.5	18,700	3.3	18,500	2.5	71,500	383,000
Georgia 5/	13,800	11.3	17,400	-5.4	18,700	8.3	16,100	4.7	66,000	417,000
Hawaii 4/	--	--	--	--	--	--	--	--	5,500	65,000
Idaho 5/	600	-3.8	1,400	135.9	2,600	74.2	2,500	106.5	7,180	36,600
Illinois	8,100	12.6	19,200	15.9	23,900	2.1	20,600	6.8	71,800	393,000
Indiana 5/	10,000	41.1	13,800	4.4	17,000	-11.0	14,200	-1.2	54,900	260,000
Iowa	5,500	28.0	11,900	22.7	11,700	0.7	9,800	10.5	38,800	228,000
Kansas	4,400	9.5	6,300	6.1	6,500	6.1	5,500	-9.5	22,600	113,000
Kentucky 5/	9,700	29.3	17,700	20.4	23,700	11.6	17,500	16.5	68,600	285,000
Louisiana 5/ 6/	--	--	--	--	--	--	--	--	1,610	16,800
Maine	400	25.2	900	23.8	1,300	32.9	700	-1.4	3,330	17,900
Maryland 5/	5,400	84.4	6,600	5.2	6,800	-0.6	5,900	-8.3	24,600	156,000
Massachusetts 5/	900	22.6	3,300	-2.0	4,200	11.1	3,300	-15.4	11,700	91,100
Michigan 5/	2,800	7.5	12,100	8.5	14,300	5.0	12,400	9.9	41,500	155,000
Minnesota	500	2.2	3,500	1.2	5,100	-2.4	3,500	19.3	12,600	61,400
Mississippi 5/ 6/	--	--	--	--	--	--	--	--	1,890	8,070
Missouri	13,400	9.2	18,900	9.9	20,700	6.8	19,200	6.2	72,300	351,000
Montana 6/	--	--	--	--	--	--	--	--	1,940	8,330
Nebraska	1,300	26.2	2,000	11.7	2,100	8.0	1,400	-11.5	6,810	42,500
Nevada	800	13.1	700	-7.7	700	-19.9	800	-0.1	2,950	24,100
New Hampshire 5/	100	113.4	500	26.3	700	22.0	700	61.3	1,980	12,000
New Jersey	3,200	42.1	5,800	1.1	7,200	9.3	6,700	-3.2	22,800	155,000
New Mexico 5/	600	-7.2	1,000	-16.5	500	-43.2	800	16.5	2,960	16,000
New York	3,700	8.5	12,800	13.7	17,200	-2.8	10,200	-8.8	44,000	235,000
North Carolina	12,600	31.3	18,100	10.7	18,000	12.4	15,500	1.9	64,200	442,000
North Dakota 4/	--	--	--	--	--	--	--	--	--	--
Ohio	10,000	39.5	18,200	1.8	22,200	0.1	16,600	1.7	67,100	307,000
Oklahoma 5/	6,600	2.4	8,600	18.5	8,600	11.8	7,600	9.2	31,300	130,000
Oregon	4,100	-9.0	5,400	-16.1	6,400	9.1	4,500	-15.0	20,300	94,200
Pennsylvania	14,500	23.0	27,300	9.9	30,500	13.6	24,000	0.5	96,300	571,000
Rhode Island 4/	--	--	--	--	--	--	--	--	1,400	9,500
South Carolina	5,400	9.6	6,700	1.1	6,600	2.6	5,900	3.1	24,700	151,000
South Dakota	800	54.9	2,000	56.0	2,800	8.1	1,800	36.6	7,310	37,200

See footnotes at end of table.

TABLE 6 --Continued  
 CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997,  
 BY QUARTER AND STATE 1/

State	Quantity 1st quarter		Quantity 2d quarter		Quantity 3d quarter		Quantity 4th quarter		Total 3/ (thousand metric tons)	Value total 3/ (thousands)
	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/	(thousand metric tons)	Percentage change 2/		
Tennessee	9,900	22.7	16,000	2.3	18,400	9.6	15,500	6.6	59,900	\$331,000
Texas	16,800	-19.7	21,300	3.1	23,100	-2.3	21,000	-1.2	82,200	324,000
Utah	900	-12.7	1,600	72.7	1,900	54.2	1,900	54.3	6,240	27,200
Vermont 6/	--	--	--	--	--	--	--	--	5,120	25,600
Virginia	13,300	51.0	17,600	5.8	17,300	-3.0	14,300	-12.5	62,600	368,000
Washington	3,500	15.8	3,400	2.9	4,800	13.7	3,500	-27.6	15,200	80,500
West Virginia 5/	2,200	19.1	3,400	-7.8	3,800	-3.0	3,000	-8.0	12,400	76,400
Wisconsin	2,700	18.6	8,100	21.1	10,600	4.7	7,800	12.0	29,100	127,000
Wyoming	600	-11.5	1,700	5.0	1,400	-15.9	1,100	-6.3	4,830	28,000
Other	--	--	--	--	--	--	--	--	9,100	51,300
Total 3/	XX	XX	XX	XX	XX	XX	XX	XX	1,400,000	7,560,000

XX Not applicable.

1/ As published in the "Crushed Stone and Sand and Gravel in the Fourth Quarter of 1997 Mineral Industry Surveys."

2/ All percentage changes are calculated by using unrounded totals. Percentage changes are based on the corresponding quarter of the previous year.

3/ Data may not add to totals shown because of independent rounding and differences between projected totals by States and by regions.

4/ State not included in quarterly survey.

5/ To avoid disclosing proprietary data, certain State totals do not include all kinds of stone produced within the State; the portion not shown has been included with "Other."

6/ Owing to low number of companies, no production estimates by quarter were generated.

TABLE 7  
CRUSHED STONE SOLD OR USED IN THE UNITED STATES IN 1997,  
BY REGION AND SIZE OF OPERATION 1/

Size range (metric tons)	Northeast				Midwest				South			
	Number of operations	Percentage of total	Quantity (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity (thousand metric tons)	Percentage of total
Less than 25,000	37	8.0	262	(2/)	163	14.0	1,630	(2/)	53	5.0	543	(2/)
25,000 to 49,999	28	6.0	931	(2/)	97	8.0	3,340	(2/)	41	4.0	1,470	(2/)
50,000 to 99,999	30	7.0	2,150	1.0	148	13.0	9,680	2.0	75	7.0	5,280	(2/)
100,000 to 199,999	66	15.0	9,010	4.0	158	14.0	20,700	4.0	104	10.0	13,900	2.0
200,000 to 299,999	36	8.0	8,250	4.0	104	9.0	23,000	5.0	105	10.0	23,400	3.0
300,000 to 399,999	48	11.0	15,200	8.0	79	7.0	25,200	5.0	77	7.0	24,300	3.0
400,000 to 499,999	40	9.0	16,100	8.0	60	5.0	24,700	5.0	61	6.0	24,800	3.0
500,000 to 599,999	22	5.0	11,000	5.0	52	4.0	25,900	6.0	78	7.0	39,000	5.0
600,000 to 699,999	29	6.0	17,000	9.0	33	3.0	19,300	4.0	43	4.0	25,100	3.0
700,000 to 799,999	17	4.0	11,500	6.0	31	2.0	21,100	5.0	51	5.0	34,700	5.0
800,000 to 899,999	12	2.0	9,170	4.0	30	2.0	23,100	5.0	43	4.0	33,300	5.0
900,000 to 999,999	14	3.0	11,900	6.0	21	1.0	18,100	4.0	33	3.0	28,700	4.0
1,000,000 to 1,499,999	32	7.0	36,500	19.0	66	6.0	72,300	16.0	119	12.0	134,000	20.0
1,500,000 to 1,999,999	10	2.0	15,400	8.0	21	1.0	33,400	7.0	52	5.0	79,600	11.0
2,000,000 to 2,499,999	2	--	4,010	2.0	17	1.0	34,100	8.0	23	2.0	45,300	6.0
2,500,000 to 4,999,999	7	1.0	20,200	10.0	11	1.0	33,600	7.0	25	2.0	76,600	11.0
5,000,000 and over	--	--	--	--	6	(2/)	37,600	8.0	10	1	76,100	11.0
Total	430	100.0	189,000	100.0	1,100	100.0	427,000	100.0	993	100.0	666,000	100.0

  

Size range (metric tons)	West				U.S. total			
	Number of operations	Percentage of total	Quantity (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity (thousand metric tons)	Percentage of total
Less than 25,000	151	27.0	1,380	1.0	404	13.0	3,820	(2/)
25,000 to 49,999	67	12.0	2,240	1.0	233	7.0	7,990	(2/)
50,000 to 99,999	95	17.0	6,450	4.0	348	11.0	23,600	1.0
100,000 to 199,999	78	14.0	10,100	7.0	406	13.0	53,600	3.0
200,000 to 299,999	32	5.0	7,630	5.0	277	9.0	62,300	4.0
300,000 to 399,999	32	5.0	10,100	7.0	236	7.0	74,800	5.0
400,000 to 499,999	21	3.0	8,750	6.0	182	5.0	74,400	5.0
500,000 to 599,999	11	2.0	5,440	3.0	163	5.0	81,400	5.0
600,000 to 699,999	10	1.0	5,980	4.0	115	3.0	67,300	4.0
700,000 to 799,999	6	1.0	4,000	2.0	105	3.0	71,400	5.0
800,000 to 899,999	7	1.0	5,420	3.0	92	3.0	71,000	5.0
900,000 to 999,999	10	1.0	8,800	6.0	78	2.0	67,500	4.0
1,000,000 to 1,499,999	18	3.0	19,400	13.0	235	7.0	262,000	18.0
1,500,000 to 1,999,999	6	1.0	9,410	6.0	89	2.0	138,000	9.0
2,000,000 to 2,499,999	5	(2/)	9,780	6.0	47	1.0	93,200	6.0
2,500,000 to 4,999,999	9	1	28,200	19.0	52	1.0	159,000	11.0
5,000,000 and over	--	--	--	--	16	(2/)	114,000	8.0
Total	558	100.0	143,000	100.0	3,080	100.0	1,420,000	100.0

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

TABLE 8  
CRUSHED LIMESTONE AND DOLOMITE SOLD OR USED BY PRODUCERS IN  
THE UNITED STATES IN 1997, BY STATE 1/

(Thousand metric tons and thousand dollars)

State	Limestone		Dolomite	
	Quantity	Value	Quantity	Value
Alabama	37,300 2/	194,000 2/	W	W
Alaska 3/	W 2/	W 2/	--	--
Arizona	4,590	23,300	--	--
Arkansas	8,370	41,900	W	W
California	22,900	131,000	282	W
Colorado	W	W	--	--
Connecticut	W	W	W	W
Florida	71,600 2/	384,000 2/	1,060	6,800
Georgia	15,800 2/	97,900 2/	109	600
Hawaii	409	3,090	--	--
Idaho	1,150	5,860	--	--
Illinois	56,900 2/	312,000 2/	8,850	45,500
Indiana	51,900 2/	242,000 2/	7,170	38,300
Iowa	37,200 2/	215,000 2/	41	141
Kansas	22,300 2/	114,000 2/	--	--
Kentucky	62,700	292,000	--	--
Maine	1,030	6,400	--	--
Maryland	18,300	122,000	--	--
Massachusetts	2,050 2/	22,200 2/	--	--
Michigan	33,900	125,000	8,120	31,800
Minnesota	7,350	35,600	W	W
Mississippi	5,180	32,900	--	--
Missouri	64,700 2/	330,000 2/	2,580	12,900
Montana	2,020	8,620	--	--
Nebraska	6,900	46,000	--	--
Nevada	3,890	28,700	W	W
New Hampshire	W	W	--	--
New Jersey	W	W	--	--
New Mexico	1,230	5,670	--	--
New York	27,900 2/	153,000 2/	9,950	88,100
North Carolina	W	W	302	2,010
Ohio	57,900 2/	329,000 2/	16,100	68,000
Oklahoma	24,300	75,600	2,950	13,300
Oregon	W	W	--	--
Pennsylvania	54,700 2/	320,000 2/	11,500	71,400
Rhode Island	W	W	--	--
South Carolina	4,490	34,800	--	--
South Dakota	3,110	11,900	--	--
Tennessee	54,300	316,000	W	W
Texas	77,400	322,000	W	W
Utah	2,500 2/	14,500 2/	W	13,800
Vermont	3,400	11,900	W	W
Virginia	15,700 2/	93,500 2/	4,880	33,700
Washington	1,460 2/	19,700 2/	W	2,010
West Virginia	12,000	70,500	W	26,400
Wisconsin	20,800 2/	90,700 2/	1,560	6,570
Wyoming	W 2/	6,700 2/	--	--
Other	15,700 2/	94,000 2/	22,800	85,800
Total	916,000	4,780,000	98,200	547,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes limestone-dolomite reported with no distinction between the two kinds of stone.

3/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys information.

TABLE 9  
 CRUSHED CALCAREOUS MARL AND MARBLE SOLD OR USED BY  
 PRODUCERS IN THE UNITED STATES IN 1997, BY STATE 1/

(Thousand metric tons and thousand dollars)

State	Calcareous marl		Marble	
	Quantity	Value	Quantity	Value
New York	--	--	85	1,390
Pennsylvania	--	--	390	2,370
Vermont	--	--	1,490	6,670
Wyoming	--	--	104	3,280
Other	3,350 2/	10,300 2/	5,330 3/	88,400 3/
Total	3,350	10,300	7,400	102,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes data for Florida, Michigan, Mississippi, South Carolina, and Texas.

3/ Includes data for Alabama, Arizona, California, Georgia, Maryland, South Carolina, and Texas.

TABLE 10  
CRUSHED GRANITE, TRAPROCK, AND SANDSTONE AND QUARTZITE SOLD OR USED BY PRODUCERS  
IN THE UNITED STATES IN 1997, BY STATE 1/

(Thousand metric tons and thousand dollars)

State	Granite		Traprock		Sandstone and quartzite	
	Quantity	Value	Quantity	Value	Quantity	Value
Alabama	W	W	--	--	--	--
Alaska 2/	--	--	663	2,170	W	W
Arizona	1,580	10,700	--	--	W	W
Arkansas	10,000	77,200	--	--	7,890	40,700
California	9,230	69,500	11,200	82,300	1,030	6,050
Colorado	5,710	38,000	340	1,260	403	2,940
Connecticut	158	1,250	W	W	W	W
Georgia	49,500	330,000	--	--	--	--
Hawaii	W	W	3,870	44,400	W	W
Idaho	140	243	1,460	6,420	W	W
Kansas	W	W	--	--	W	W
Kentucky	--	--	--	--	W	W
Louisiana	--	--	--	--	W	W
Maine	W	W	W	W	W	W
Maryland	6,020	36,100	W	W	172	1,580
Massachusetts	3,190	20,000	7,000	49,100	--	--
Michigan	299	W	--	--	7	113
Minnesota	W	W	--	--	W	W
Missouri	W	W	W	W	W	W
Montana	--	--	W	W	197	586
Nevada	W	W	W	W	--	--
New Hampshire	712	3,940	1,260	8,360	W	W
New Jersey	9,820	71,900	11,700	67,600	W	W
New Mexico	870	W	W	93	--	--
New York	2,210	16,100	W	W	1,990	11,600
North Carolina	46,000	331,000	6,560	51,400	W	W
Ohio	--	--	--	--	44	197
Oklahoma	W	W	W	W	2,820	13,400
Oregon	29	146	19,100	98,800	W	W
Pennsylvania	4,210	28,500	2,970	22,600	6,000	35,400
Rhode Island	1,300	8,210	W	W	--	--
South Carolina	19,000	157,000	--	--	--	--
South Dakota	1	13	--	--	2,790	18,300
Tennessee	W	W	--	--	W	W
Texas	W	W	W	W	709	W
Utah	W	W	--	--	W	W
Vermont	W	W	--	--	W	W
Virginia	38,500	218,000	11,400	64,100	W	W
Washington	W	W	10,500	56,100	604	W
West Virginia	--	--	--	--	856	6,180
Wisconsin	2,210	4,790	W	W	W	W
Wyoming	W	W	W	W	W	W
Other	11,700	79,200	11,700	77,000	13,600	104,000
Total	222,000	1,500,000	99,700	632,000	39,100	242,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys information.

TABLE 11  
 CRUSHED VOLCANIC CINDER AND SCORIA AND CRUSHED  
 MISCELLANEOUS STONE SOLD OR USED BY PRODUCERS  
 IN THE UNITED STATES IN 1997, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars)

State	Volcanic cinder and scoria		Miscellaneous stone	
	Quantity	Value	Quantity	Value
Alabama	--	--	W	W
Alaska 3/	--	--	2,690	21,500
Arizona	115	135	948	6,010
Arkansas	--	--	W	W
California	W	3,450	4,160	27,800
Colorado	W	W	W	W
Connecticut	--	--	W	W
Florida	--	--	1,580	7,420
Hawaii	W	W	W	W
Idaho	--	--	1,160	6,190
Indiana	--	--	W	W
Louisiana	--	--	W	W
Maine	--	--	W	W
Maryland	--	--	W	W
Massachusetts	--	--	W	W
Michigan	--	--	W	W
Mississippi	--	--	W	W
Montana	6	18	104	119
Nevada	W	W	W	W
New Jersey	--	--	586	7
New Mexico	276	2,420	554	1,410
New York	--	--	1,060	5,180
North Carolina	W	W	W	W
Oklahoma	--	--	W	W
Oregon	--	--	929	4,130
Pennsylvania	--	--	9,390	55,900
South Carolina	--	--	W	W
Texas	156	809	1,720	12,600
Utah	80	591	3,790	16,900
Vermont	--	--	W	W
Virginia	--	--	1,020	10,200
Washington	213	W	1,070	4,950
Wyoming	W	W	97	577
Other	1,330	7,360	9,550	61,800
Total	2,170	14,800	40,400	243,000

W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Includes calcareous marl, shell, slate, and other stone.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys information.



TABLE 12  
KIND OF CRUSHED STONE PRODUCED IN THE UNITED STATES IN 1997, BY STATE

State	Lime- stone	Dolo- mite	Marble	Calcareous Marl	Shell	Granite	Trap- rock	Sand- stone	Quartzite	Slate	Volcanic cinder and scoria	Miscella- neous
Alabama	X	X	X			X				X		X
Alaska 1/	X						X	X		X		X
Arizona	X		X			X		X	X		X	X
Arkansas	X	X				X		X	X			X
California	X	X	X		X	X	X	X	X	X	X	X
Colorado	X					X	X	X	X		X	X
Connecticut	X	X				X	X	X	X			X
Florida	X	X		X	X							
Georgia	X	X	X			X						
Hawaii	X					X	X	X			X	X
Idaho	X					X	X	X	X			X
Illinois	X	X										
Indiana	X	X								X		X
Iowa	X	X										
Kansas	X					X		X	X			
Kentucky	X							X				
Louisiana	X							X				X
Maine	X					X	X	X	X	X		X
Maryland	X		X		X	X	X	X				X
Massachusetts	X					X	X					X
Michigan	X	X		X		X		X				X
Minnesota	X	X				X		X	X			
Mississippi	X			X								X
Missouri	X	X				X	X	X				
Montana	X						X	X	X		X	X
Nebraska	X											
Nevada	X	X				X	X				X	X
New Hampshire	X					X	X	X				
New Jersey	X					X	X	X				X
New Mexico	X					X	X				X	X
New York	X	X	X			X	X	X		X		X
North Carolina	X	X				X	X	X	X	X	X	X
Ohio	X	X						X				
Oklahoma	X	X			X	X	X	X				X
Oregon	X				X	X	X	X	X			X
Pennsylvania	X	X	X			X	X	X	X			X
Rhode Island	X					X	X					
South Carolina	X		X	X		X						X
South Dakota	X					X		X	X			
Tennessee	X	X				X		X				
Texas	X	X	X	X		X	X	X			X	X
Utah	X	X				X		X	X		X	X
Vermont	X	X	X			X		X	X	X		X
Virginia	X	X				X	X	X	X	X		X
Washington	X	X				X	X	X		X	X	X
West Virginia	X	X						X				
Wisconsin	X	X				X	X	X	X			
Wyoming	X		X			X	X	X	X		X	X

1/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys information.

TABLE 13  
CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED  
STATES IN 1997, BY USE 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	3,400	\$18,100	\$5.33
Riprap and jetty stone	21,200	121,000	5.71
Filter stone	6,490	40,600	6.26
Other coarse aggregate	11,200	58,200	5.18
Coarse aggregate, graded:			
Concrete aggregate, coarse	90,000	534,000	5.94
Bituminous aggregate, coarse	78,400	495,000	6.31
Bituminous surface-treatment aggregate	20,100	132,000	6.58
Railroad ballast	13,100	79,000	6.01
Other graded coarse aggregate	41,900	279,000	6.66
Fine aggregate (-3/8 inch):			
Stone sand, concrete	16,100	92,400	5.75
Stone sand, bituminous mix or seal	23,300	136,000	5.82
Screening, undesignated	29,100	135,000	4.62
Other fine aggregate	8,460	48,200	5.70
Coarse and fine aggregates:			
Graded road base or subbase	160,000	774,000	4.83
Unpaved road surfacing	32,600	160,000	4.92
Terrazzo and exposed aggregate	919	9,520	10.36
Crusher run or fill or waste	59,600	281,000	4.71
Other coarse and fine aggregates	48,600	285,000	5.86
Other construction materials 2/	8,360	49,000	5.86
Agricultural:			
Agricultural limestone	11,700	65,700	5.63
Poultry grit and mineral food	787	9,600	12.20
Other agricultural uses	858	7,260	8.46
Chemical and metallurgical:			
Cement manufacture	86,300	310,000	3.59
Lime manufacture	20,400	105,000	5.12
Dead-burned dolomite manufacture	W	W	W
Flux stone	7,200	35,300	4.90
Chemical stone	190	1,010	5.29
Glass manufacture	203	3,570	17.57
Sulfur oxide removal	1,910	11,400	5.95
Special:			
Mine dusting or acid water treatment	290	5,040	17.36
Asphalt fillers or extenders	973	9,020	9.27
Whiting or whiting substitute	2,580	99,700	38.65
Other fillers or extenders	3,000	63,700	21.23
Roofing granules	1,590	22,200	13.91
Other miscellaneous uses:			
Light weight aggregate (slate)	W	W	W
Acid neutralization	W	W	W
Other specified uses not listed 3/	1,760	13,000	7.38
Unspecified: 4/			
Actual	417,000	2,490,000	5.98
Estimated	194,000	1,080,000	5.56
Total	1,420,000	8,070,000	5.66

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes building products, drain fields, pipe bedding, and waste material.

3/ Includes flour (slate), paper manufacture, and sugar refining.

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 14  
CRUSHED LIMESTONE AND DOLOMITE SOLD OR USED BY PRODUCERS IN THE  
UNITED STATES IN 1997, BY USE 1/ 2/

(Thousand metric tons and thousand dollars)

Use	Limestone		Dolomite	
	Quantity	Value	Quantity	Value
<b>Coarse aggregate (+1 1/2 inch):</b>				
Macadam	2,950	15,700	211	1,280
Riprap and jetty stone	14,500	66,900	832	5,900
Filter stone	4,130	22,300	89	575
Other coarse aggregate	8,720	42,500	937	5,060
<b>Coarse aggregate, graded:</b>				
Concrete aggregate, coarse	56,500	298,000	7,800	41,100
Bituminous aggregate, coarse	49,400	290,000	7,120	51,500
Bituminous aggregate, fine	10,200	55,400	1,950	12,000
Railroad ballast	2,920	15,800	895	5,230
Other graded coarse aggregate	28,300	188,000	3,840	23,000
<b>Fine aggregate (-3/8 inch):</b>				
Stone sand, concrete	10,100	50,100	1,050	6,370
Stone sand, bituminous mix or seal	12,500	66,700	1,290	9,700
Screening, undesignated	18,400	68,200	1,570	9,780
Other fine aggregate	5,880	33,000	516	2,520
<b>Coarse and fine aggregate:</b>				
Graded road base or subbase	107,000	473,000	10,500	52,000
Unpaved road surfacing	19,000	94,100	6,850	32,200
Terrazzo and exposed aggregates	412	2,760	W	W
Crusher run or fill or waste	35,900	163,000	1,960	9,690
Other coarse and fine aggregate	20,800	114,000	10,200	58,100
Roofing granules	228	1,930	--	--
Other construction materials	5,340 3/	27,700 3/	111	620
<b>Agricultural:</b>				
Agricultural limestone	9,750	54,800	1,930	11,000
Poultry grit and mineral food	745	9,120	W	W
Other agricultural uses	547	3,680	82	864
<b>Chemical and metallurgical:</b>				
Cement manufacture	83,000	300,000	53	58
Lime manufacture	19,100	97,700	1,220	5,870
Dead-burned dolomite manufacture	W	W	W	W
Flux stone	5,320	24,400	1,430	6,420
Chemical stone	190	1,010	--	--
Glass manufacture	W	W	--	--
Sulfur oxide removal	1,910	11,400	--	--
<b>Special:</b>				
Mine dusting or acid water treatment	256	4,230	W	W
Asphalt fillers or extenders	848	7,780	W	W
Whiting or whiting substitute	1,930	63,800	--	--
Other fillers or extenders	1,850	28,300	497	11,100
Other specified uses not listed	1,260	8,040	461	3,550
<b>Unspecified: 4/</b>				
Actual	245,000	1,380,000	24,300	115,000
Estimated	131,000	699,000	10,500	66,800
<b>Total</b>	<b>916,000</b>	<b>4,780,000</b>	<b>98,200</b>	<b>547,000</b>

W Withheld to avoid disclosing company proprietary data; included with "Other specified uses not listed."

1/ Includes a minor amount of limestone-dolomite reported without a distinction between the two.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Includes building products, drain fields, pipe bedding, and waste material.

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 15  
CRUSHED LIMESTONE AND DOLOMITE SOLD OR USED BY PRODUCERS  
IN 1997, BY STATE AND USE 1/ 2/

(Thousand metric tons and thousand dollars)

State	Concrete aggregate		Bituminous aggregate		Roadstone and coverings		Riprap and railroad ballast		Other construction uses	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alabama	3,040	16,100	6,900	37,700	3,790	19,400	820	4,980	3,590	22,800
Alaska	--	--	--	--	--	--	--	--	--	--
Arizona	W	W	--	--	--	--	--	--	W	W
Arkansas	886	3,980	505	2,550	2,580	10,800	234	1,130	741	3,590
California	77	891	181	1,830	311	2,030	462	4,110	2,120	6,170
Colorado	W	W	--	W	W	W	--	--	--	--
Connecticut	W	W	W	W	W	W	--	--	W	W
Florida	9,000	54,800	6,680	38,500	13,400	42,100	3,540	4,680	6,390	21,600
Georgia	1,230	8,020	1,180	8,290	724	4,290	102	706	8,210	49,400
Hawaii	W	W	--	--	W	W	--	--	W	W
Idaho	--	--	--	--	--	--	--	--	--	--
Illinois	6,430	35,400	6,960	43,500	12,800	61,700	923	6,130	3,140	13,900
Indiana	5,660	21,700	7,110	29,100	9,550	48,000	1,760	7,920	3,340	15,400
Iowa	1,600	9,990	1,130	6,110	6,640	32,400	248	1,800	1,460	5,370
Kansas	445	2,330	2,630	17,000	2,290	10,900	135	1,230	1,950	10,100
Kentucky	2,740	14,700	6,420	37,800	5,050	27,500	775	4,670	2,880	13,600
Louisiana	W	W	W	W	W	W	--	--	W	W
Maine	64	525	--	--	--	--	--	--	--	--
Maryland	847	6,260	6,800	47,600	952	6,520	265	1,770	2,010	11,400
Massachusetts	W	W	27	W	W	W	--	--	W	W
Michigan	4,330	15,700	2,780	12,400	4,330	18,800	181	1,470	776	3,110
Minnesota	460	2,590	941	6,070	2,740	13,400	143	1,260	1,840	9,350
Mississippi	473	2,420	1,300	7,950	707	3,750	W	W	1,730	14,800
Missouri	2,480	13,600	4,720	36,100	12,300	57,600	2,940	11,100	3,710	16,400
Montana	--	--	--	--	161	435	W	W	W	W
Nebraska	843	6,330	W	W	740	5,760	243	2,440	762	4,660
Nevada	284	W	W	W	321	1,530	W	W	198	1,080
New Hampshire	W	W	--	--	--	--	W	W	--	--
New Jersey	34	443	--	--	--	--	--	--	222	1,940
New Mexico	W	222	32	115	340	1,530	W	W	8	23
New York	2,970	21,200	7,730	70,800	4,500	28,900	391	3,540	5,540	38,100
North Carolina	135	946	W	W	218	1,270	36	254	310	1,850
Ohio	4,330	18,600	3,780	17,000	15,900	67,800	693	3,490	4,220	20,600
Oklahoma	3,770	15,400	1,390	6,470	1,720	6,630	417	1,180	10,700	22,600
Oregon	--	--	--	--	--	--	--	--	--	--
Pennsylvania	3,100	17,400	8,980	53,500	6,650	35,300	759	4,990	9,470	56,800
Rhode Island	--	--	--	--	--	--	--	--	--	W
South Carolina	--	--	--	--	--	--	--	--	W	4,710
South Dakota	W	W	W	W	W	W	W	W	W	W
Tennessee	4,540	27,800	16,900	103,000	15,000	79,800	1,690	9,430	6,700	39,200
Texas	16,400	79,100	11,200	68,400	19,300	67,700	668	3,890	6,140	18,700
Utah	W	W	W	W	80	234	29	451	W	W
Vermont	W	W	W	W	90	195	--	--	W	W
Virginia	2,540	16,000	2,830	19,100	3,010	15,500	597	4,160	2,970	16,100
Washington	--	--	10	W	--	--	W	W	W	W
West Virginia	1,160	6,260	3,390	18,900	427	2,170	464	2,760	3,790	20,700
Wisconsin	963	4,530	673	2,900	8,600	35,100	261	1,540	2,140	8,080
Wyoming	W	W	W	W	W	W	W	W	W	W
Total	80,800	423,000	113,000	692,000	155,000	709,000	18,800	91,100	97,100	472,000
Total withheld	1,060	7,730	2,250	12,500	1,480	6,480	394	2,780	1,770	6,570
Grand total	81,800	431,000	115,000	705,000	157,000	716,000	19,200	93,900	98,900	479,000

See footnotes at end of table.

TABLE 15--Continued  
 CRUSHED LIMESTONE AND DOLOMITE SOLD OR USED BY PRODUCERS  
 IN 1997, BY STATE AND USE 1/ 2/

(Thousand metric tons and thousand dollars)

State	Cement manufacture		Agricultural uses		Lime manufacture		Other uses		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alabama	3,080	9,320	272	1,760	1,600	7,390	16,700	88,700	39,800	208,000
Alaska	--	--	--	--	--	--	W	W	W	W
Arizona	W	W	W	W	W	W	W	W	4,590	23,300
Arkansas	W	W	256	2,050	W	W	3,480	20,400	10,200	49,000
California	11,600	43,300	150	2,180	--	--	8,280	73,500	23,200	134,000
Colorado	W	W	W	W	--	--	W	W	1,790	11,100
Connecticut	--	--	50	476	--	--	W	W	1,380	18,700
Florida	W	W	685	3,950	--	--	30,900	222,000	72,700	391,000
Georgia	W	W	W	W	--	--	3,690	23,500	15,900	98,500
Hawaii	--	--	W	W	--	--	W	W	409	3,090
Idaho	W	W	W	W	W	W	30	347	1,150	5,860
Illinois	2,470	10,400	2,250	9,540	--	--	30,800	177,000	65,700	357,000
Indiana	3,690	7,670	1,610	6,770	W	W	26,200	144,000	59,000	280,000
Iowa	3,250	23,000	896	4,100	W	W	21,800	131,000	37,300	215,000
Kansas	1,950	8,030	336	1,530	--	--	12,600	63,300	22,300	114,000
Kentucky	W	W	511	2,660	W	W	40,700	186,000	62,700	292,000
Louisiana	--	--	W	W	--	--	W	W	W	W
Maine	W	W	--	--	W	W	439	3,000	1,030	6,400
Maryland	2,660	6,080	W	W	--	--	4,730	42,100	18,300	122,000
Massachusetts	--	--	--	--	--	--	1,930	21,100	2,050	22,200
Michigan	6,520	13,900	103	768	W	W	21,500	85,900	42,000	157,000
Minnesota	--	--	230	1,260	--	--	4,080	18,600	10,400	52,600
Mississippi	W	W	62	655	--	--	W	W	5,180	32,900
Missouri	4,350	14,800	1,120	5,760	2,450	11,600	33,200	175,000	67,300	343,000
Montana	W	W	--	--	W	W	704	2,760	2,020	8,620
Nebraska	W	W	367	3,270	--	--	2,170	14,500	6,900	46,000
Nevada	W	W	W	W	W	W	372	1,760	4,020	30,700
New Hampshire	--	--	--	--	--	--	--	--	W	W
New Jersey	--	--	113	1,450	18	100	W	W	W	W
New Mexico	W	W	--	--	--	--	145	627	1,230	5,670
New York	3,890	15,300	136	1,500	--	--	12,700	62,100	37,900	241,000
North Carolina	--	--	W	W	--	--	6,390	45,900	7,110	50,400
Ohio	W	W	892	5,440	--	--	42,800	260,000	74,000	397,000
Oklahoma	W	W	204	800	W	608	7,140	30,200	27,300	88,800
Oregon	W	W	--	--	--	--	W	W	W	W
Pennsylvania	6,150	28,700	342	2,170	1,270	7,810	29,500	185,000	66,200	391,000
Rhode Island	--	--	W	W	--	--	W	W	W	W
South Carolina	--	--	--	--	--	--	3,720	30,100	4,490	34,800
South Dakota	1,130	W	--	--	W	W	W	W	3,110	11,900
Tennessee	W	W	556	3,930	593	W	12,800	66,300	59,700	346,000
Texas	10,400	28,500	439	3,410	1,240	6,360	12,000	47,600	77,800	324,000
Utah	W	W	11	199	1,260	5,930	3,480	12,200	6,290	28,400
Vermont	--	--	W	W	585	2,370	2,470	7,940	3,470	12,500
Virginia	W	W	804	6,830	757	6,010	5,870	38,600	20,500	127,000
Washington	--	--	W	W	W	W	1,600	19,200	1,920	21,700
West Virginia	W	W	34	202	--	--	6,220	44,200	16,700	97,000
Wisconsin	--	--	426	3,350	W	W	9,100	40,900	22,400	97,200
Wyoming	--	--	--	--	--	--	680	2,560	1,500	6,700
Total	61,200	209,000	12,900	76,000	9,750	48,200	421,000	2,390,000	1,010,000	5,300,000
Total withheld	21,900	90,800	203	3,380	10,700	56,000	4,190	36,100	4,750	27,700
Grand total	83,000	300,000	13,100	79,400	20,500	104,000	XX	XX	1,010,000	5,330,000

W Withheld to avoid disclosing company proprietary data; included in "Total withheld." XX Not applicable.

1/ Includes a minor amount of limestone-dolomite reported without a distinction between the two.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 16  
CRUSHED MARBLE SOLD OR USED BY PRODUCERS IN  
THE UNITED STATES IN 1997, BY USE 1/

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Coarse aggregate (+1-1/2-inch); other coarse aggregate	502	3,990
Coarse aggregate, graded:		
Concrete aggregate, coarse	126	1,170
Bituminous aggregate, coarse	233	1,610
Bituminous surface-treatment aggregate	68	450
Fine aggregate (-3/8-inch); screening, undesignated	5	31
Coarse and fine aggregates:		
Graded road base or subbase	371	2,060
Terrazzo and exposed aggregate	62	1,420
Roofing granules	3	65
Other construction materials 2/	243	1,580
Chemical and metallurgical; lime manufacture	44	970
Special:		
Other fillers or extenders	266	13,700
Other specified uses not listed 3/	761	37,800
Unspecified: 4/		
Actual	3,500	32,300
Estimated	1,220	5,040
Total	7,400	102,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes crusher run (select material or fill), filter stone, riprap and jetty stone, and stone sand (bituminous mix or seal).

3/ Includes mine dusting or acid-water treatment, other agricultural uses, and whitening or whitening substitute, and poultry grit and mineral food.

4/ Includes production reported without a breakdown by end use and estimates for respondents.

TABLE 17  
CRUSHED GRANITE AND TRAPROCK SOLD OR USED BY PRODUCERS  
IN THE UNITED STATES IN 1997, BY USE 1/

(Thousand metric tons and thousand dollars)

Use	Granite		Traprock	
	Quantity	Value	Quantity	Value
<b>Coarse aggregate (+1-1/2-inch):</b>				
Macadam	W	W	218	1,040
Riprap and jetty stone	3,050	26,400	2,130	17,100
Filter stone	1,090	8,920	669	4,910
Other coarse aggregate	401	3,090	906	5,480
<b>Coarse aggregate, graded:</b>				
Concrete aggregate, coarse	17,100	132,000	5,830	44,700
Bituminous aggregate, coarse	12,500	93,300	5,310	32,800
Bituminous surface-treatment aggregate	4,760	37,300	2,420	22,400
Railroad ballast	5,510	32,700	3,510	23,000
Other graded coarse aggregate	2,550	20,600	5,310	34,800
<b>Fine aggregate (-3/8-inch):</b>				
Stone sand, concrete	2,950	19,100	1,530	13,100
Stone sand, bituminous mix or seal	6,900	42,300	1,070	7,660
Screening, undesignated	4,520	28,100	3,250	19,700
Other fine aggregate	669	3,930	353	2,860
<b>Coarse and fine aggregate:</b>				
Graded road base or subbase	19,200	120,000	15,800	89,700
Unpaved road surfacing	3,060	14,800	2,450	11,800
Terrazzo and exposed aggregate	103	1,430	--	--
Crusher run or fill or waste	14,400	75,900	5,630	25,500
Other coarse and fine aggregate	6,990	49,000	7,330	43,200
Roofing granules	W	W	1,010	16,200
Other construction materials	170	1,040	2,070 2/	15,000 2/
Other specified uses not listed 3/	300 4/	1,980 4/	(5/)	1
Chemical and metallurgical; lime manufacture	W	W	--	--
<b>Unspecified: 6/</b>				
Actual	95,200	656,000	13,500	82,600
Estimated	20,400	129,000	19,400	118,000
<b>Total</b>	<b>222,000</b>	<b>1,500,000</b>	<b>99,700</b>	<b>632,000</b>

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes drain fields and building products.

3/ Includes other agricultural uses.

4/ Includes other fillers or extenders.

5/ Less than 1/2 unit.

6/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 18  
CRUSHED SANDSTONE AND QUARTZITE SOLD OR USED BY PRODUCERS IN THE  
UNITED STATES IN 1997, BY USE 1/

(Thousand metric tons and thousand dollars)

Use	Sandstone		Quartzite	
	Quantity	Value	Quantity	Value
<b>Coarse aggregate (+1-1/2-inch):</b>				
Riprap and jetty stone	367	2,260	121	921
Filter stone	76	559	79	458
Other coarse aggregate	190	1,460	3	17
<b>Coarse aggregate, graded:</b>				
Concrete aggregate, coarse	631	3,750	761	5,770
Bituminous aggregate, coarse	780	5,410	658	4,610
Bituminous surface-treatment aggregate	240	1,940	162	1,430
Railroad ballast	33	227	178	1,340
Other graded coarse aggregate	1,310	8,740	W	W
<b>Fine aggregate (-3/8-inch):</b>				
Stone sand, concrete	382	3,120	27	206
Stone sand, bituminous mix or seal	329	2,370	442	3,020
Screening, undesignated	207	1,070	327	1,700
Other fine aggregate	896	4,920	115	673
<b>Coarse and fine aggregates:</b>				
Graded road base or subbase	2,590	15,300	665	3,700
Unpaved road surfaces	363	1,520	99	465
Terrazzo and exposed aggregate	W	W	W	W
Crusher run or fill or waste	719	2,540	337	1,110
Other coarse and fine aggregates	1,500	7,900	998	6,540
Other construction materials	168	2,500	433	2,650
Agricultural; poultry grit and mineral food	--	--	(2/)	(2/)
<b>Chemical and metallurgical:</b>				
Cement manufacture	216	1,180	261	929
Flux stone	(3/)	(3/)	(2/)	(2/)
Glass manufacture	(3/)	(3/)	(2/)	(2/)
<b>Special:</b>				
Other fillers or extenders	(3/)	(3/)	--	--
Roofing granules	(3/)	(3/)	--	--
Other specified uses not listed	--	--	564	6,040
<b>Unspecified: 4/</b>				
Actual	12,100	70,500	5,270	37,000
Estimated	3,880	20,500	476	2,180
Total	27,100	161,000	12,000	80,700

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Included with "Other specified uses not listed."

3/ Withheld to avoid disclosing company proprietary data; included in "Total."

4/ Includes production reported without breakdown by end use and estimates for nonrespondents.



TABLE 19  
CRUSHED VOLCANIC CINDER AND SCORIA AND CRUSHED MISCELLANEOUS STONE  
SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997, BY USE 1/ 2/

(Thousand metric tons and thousand dollars)

Use	Volcanic cinder and scoria		Miscellaneous stone	
	Quantity	Value	Quantity	Value
<b>Coarse aggregate (+1-1/2-inch):</b>				
Riprap and jetty stone	9	77	172	1,240
Filter stone	15	109	325	2,640
Other coarse aggregate	--	--	85	578
<b>Coarse aggregate, graded:</b>				
Concrete aggregate, coarse	W	W	1,150	7,740
Bituminous aggregate, coarse	--	--	2,420	16,100
Bituminous surface-treatment aggregate	--	--	290	1,320
Railroad ballast	--	--	95	710
Other graded coarse aggregate	70	275	142	1,290
<b>Fine aggregate (-3/8-inch):</b>				
Stone sand, concrete	W	W	W	W
Stone sand, bituminous mix or seal	--	--	787	3,610
Screening, undesignated	121	561	762	5,340
Other fine aggregate	--	--	W	W
<b>Coarse and fine aggregate:</b>				
Graded road base or subbase	496	2,740	3,250	15,200
Unpaved road surfacing	59	89	776	5,530
Terrazzo and exposed aggregate	221	1,610	--	--
Crusher run or fill or waste	W	W	438	2,260
Other coarse and fine aggregate	14	85	248	1,670
Other construction materials	302	1,670	566	3,620
<b>Agricultural:</b>				
Poultry grit and mineral food	--	--	(3/)	(3/)
Other agricultural uses	--	--	114	868
Chemical and metallurgical; cement manufacture	--	--	2,820	7,570
<b>Special:</b>				
Roofing granules	6	125	--	--
Other fillers or extenders	--	--	W	W
<b>Other miscellaneous uses:</b>				
Light weight aggregate (slate)	--	--	(3/)	(3/)
Flour (slate)	--	--	(3/)	(3/)
Other specified uses not listed	97	1,900	1,000	19,000
<b>Unspecified: 4/</b>				
Actual	709	5,120	17,500	110,000
Estimated	54	428	7,460	36,000
<b>Total</b>	<b>2,170</b>	<b>14,800</b>	<b>40,400</b>	<b>243,000</b>

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

1/ Includes calcareous marl, shell, slate, and other stone.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Included with "Other specified uses not listed."

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 20  
 RECYCLED ASPHALT AND CONCRETE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY REGION 1/ 2/

Region/Division	Recycled asphalt						Recycled concrete					
	1996			1997			1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Northeast:</b>												
New England	528	\$3,150	\$5.97	758	\$3,640	\$4.81	64 r/	\$346	\$5.41 r/	52	\$321	\$6.17
Middle Atlantic	271	2,360	8.71	387	2,570	6.63	420	2,280	5.42	142	759	5.35
<b>Midwest:</b>												
East North Central	136	668	4.91	245	146	1.00	23	90	3.91	16	46	2.88
West North Central	119	728	6.12	10	47	4.70	W	W	3.43 r/	128	475	3.71
<b>South:</b>												
South Atlantic	23	124	5.39	W	W	7.00	W	W	5.27 r/	191	1,210	6.31
East South Central	W	W	4.26	--	--	--	--	--	--	W	W	--
West South Central	W	W	7.05	W	W	5.86	--	--	--	--	--	--
<b>West:</b>												
Mountain	105	547	5.21	3	11	3.67	30	94	3.13	W	W	3.67
Pacific	103	673	6.53	80	806	10.08	436	2,460	5.64	101	1,020	10.11
Total	1,350	8,630	6.41	1,730	9,090	5.25	1,170	6,280	5.37	638	3,860	6.05

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Includes volcanic cinder and scoria.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 21  
 RECYCLED ASPHALT SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/ 2/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	W	W	\$2.75	--	--	--
Alaska	15	\$136	9.07	19	\$166	\$8.74
Arizona	--	--	--	55	382	6.95
California	62	193	3.11	--	--	--
Colorado	W	W	3.67	--	--	--
Connecticut	W	W	5.55	--	--	--
Florida	W	W	4.57	--	--	--
Hawaii	W	W	7.40	--	--	--
Idaho	6	18	3.00	2	11	5.50
Illinois	--	--	--	18	73	4.06
Indiana	W	W	5.33	--	--	--
Iowa	2	8	--	--	--	--
Kansas	W	W	4.75	--	--	--
Louisiana	W	W	16.67	--	--	--
Maine	44	296	6.73	53	384	7.25
Maryland	--	--	--	W	W	1.00
Massachusetts	338	1,990	5.90	623	2,900	4.65
Michigan	--	--	--	7	16	2.29
Minnesota	89	586	6.58	6	29	4.83
Missouri	W	W	4.10	--	--	--
Nevada	18	43	2.39	--	--	--
New Hampshire	W	W	6.39	W	W	4.45
New Jersey	W	W	9.85	W	W	6.63
New York	38	211	5.55	40	131	3.28
Ohio	W	W	6.80	W	W	2.80
Oregon	18	300	16.67	--	--	--
Pennsylvania	48	317	6.60	110	866	7.87
Rhode Island	W	W	5.28	--	--	--
South Dakota	--	--	--	W	W	4.50
Tennessee	W	W	4.26	--	--	--
Texas	W	W	4.26	W	W	6.55
Utah	W	W	6.56	--	--	--
Vermont	W	W	1.00	--	--	--
Virginia	W	W	6.67	--	--	--
Washington	W	W	2.33	W	W	5.09
Wisconsin	37	139	3.76	214	43	2.01
Total	1,350	8,630	6.41	1,730	9,090	5.25

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Includes volcanic cinder and scoria.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 22  
RECYCLED CONCRETE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/ 2/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	--	--	--	W	W	\$5.51
Alaska	1	\$10	\$10.00	9	\$65	7.22
California	269	1,530	5.70	84	641	7.63
Florida	--	--	--	W	W	8.73
Idaho	W	W	3.50	W	W	5.52
Illinois	--	--	--	3	14	4.67
Indiana	--	--	--	W	W	2.00
Maine	W	W	2.57	W	W	4.90
Maryland	--	--	--	W	W	5.56
Massachusetts	57	328	5.56	41	269	6.56
Minnesota	W	W	3.76	W	W	3.71
Nevada	6	15	2.50	--	--	--
New Hampshire	--	--	--	W	W	4.00
New Jersey	W	W	5.83	W	W	6.90
New Mexico	W	W	4.00	W	W	4.00
New York	W	W	4.49	W	W	4.55
Ohio	--	--	--	1	4	4.00
Oregon	W	W	5.41	--	--	--
Pennsylvania	3	15	5.00 r/	34	195	5.74
Utah	W	W	2.00	--	--	--
Virginia	W	W	5.81	W	W	5.99
Washington	W	W	5.49	W	W	4.00
Wisconsin	23	90	3.91	W	W	2.22
Total	1,170	6,280	5.37	638	3,860	6.05

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Includes volcanic cinder and scoria.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 23  
CRUSHED STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997,  
BY REGION AND METHOD OF TRANSPORTATION 1/

(Thousand metric tons)

Region/Division	Truck	Rail	Water	Other	Not transported	Not specified	Total
<b>Northeast:</b>							
New England	7,920	69	(2/)	(2/)	6,080	18,300	32,300
Middle Atlantic	70,800	1,470	2,810	3,150	3,100	75,100	156,000
<b>Midwest:</b>							
East North Central	101,000	3,890	22,500	2,590	9,760	131,000	271,000
West North Central	60,000	1,900	7,370	2,130	4,140	80,300	156,000
<b>South:</b>							
South Atlantic	163,000	9,590	2,540	(2/)	10,800	160,000	347,000
East South Central	78,000	2,960	2,940	1,530	16,900	68,100	170,000
West South Central	71,400	17,200	3,170	5,140	6,150	44,300	147,000
<b>West:</b>							
Mountain	18,400	1,330	1	1,900	572	26,300	48,400
Pacific	39,200	3,210	1,600	4,780	3,400	42,000	94,200
Total	610,000	41,600	42,900	21,200	61,000	646,000	1,420,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

TABLE 24  
NUMBER OF CRUSHED AND BROKEN STONE OPERATIONS AND PROCESSING PLANTS IN THE  
UNITED STATES IN 1997, BY STATE 1/

State	Mining operations on land				Dredging operations	Total active operations
	Stationary	Portable	Stationary and portable	No. plants or unspecified		
Alabama	46	3	--	5	--	54
Alaska 2/	2	5	2	3	--	12
Arizona	14	9	1	4	1	29
Arkansas	29	11	6	5	--	51
California	48	22	13	9	1	93
Colorado	8	5	7	4	--	24
Connecticut	15	3	1	--	1	20
Florida	31	24	7	11	2	75
Georgia	73	3	3	1	--	80
Hawaii	8	9	6	3	--	26
Idaho	8	19	4	3	--	34
Illinois	74	51	15	6	--	146
Indiana	72	3	7	9	--	91
Iowa	25	168	2	4	--	199
Kansas	16	80	6	2	--	104
Kentucky	74	7	8	3	--	92
Louisiana	2	1	1	2	8	14
Maine	7	8	--	--	--	15
Maryland	21	5	--	1	1	28
Massachusetts	24	5	2	3	--	34
Michigan	18	8	2	3	1	32
Minnesota	8	29	1	5	--	43
Mississippi	3	1	3	6	--	13
Missouri	89	89	13	6	--	197
Montana	10	4	1	2	--	17
Nebraska	6	2	3	--	--	11
Nevada	11	3	1	1	--	16
New Hampshire	7	4	1	2	--	14
New Jersey	13	1	10	1	--	25
New Mexico	12	14	2	1	--	29
New York	69	11	16	2	--	98
North Carolina	81	7	5	3	--	96
Ohio	93	17	10	2	--	122
Oklahoma	44	6	8	1	--	59
Oregon	29	87	6	16	1	139
Pennsylvania	136	24	22	16	--	198
Rhode Island	7	1	--	--	--	8
South Carolina	31	1	3	3	--	38
South Dakota	8	2	--	--	--	10
Tennessee	101	8	4	3	--	116
Texas	66	40	14	2	--	122
Utah	10	8	4	2	--	24
Vermont	8	5	2	3	--	18
Virginia	87	5	7	9	--	108
Washington	24	46	10	23	--	103
West Virginia	33	9	4	1	--	47
Wisconsin	20	110	5	7	--	142
Wyoming	6	3	1	2	--	12
Total	1,630	986	249	200	16	3,080

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data derived, in part, from the Alaska Division of Geological and Geophysical Surveys.

TABLE 25  
U.S. EXPORTS OF CRUSHED STONE IN 1997, BY DESTINATION 1/

(Metric tons)

Destination	Limestone for cement manufacturing	Other	Chalk, crude	Granules, chippings	Total
<b>North America:</b>					
Antigua and Barbuda	--	--	--	38	38
Bahamas, The	619	--	18	113	750
Barbados	--	--	8	62	70
Bermuda	--	--	--	1,910	1,910
British Virgin Island	--	--	--	4,270	4,270
Canada	3,050,000	984	1,670	156,000	3,210,000
Costa Rica	--	--	1	--	1
Dominican Republic	--	--	67	--	67
Guadeloupe	4	--	--	--	4
Guatemala	--	--	18	--	18
Haiti	22	--	--	86	108
Honduras	--	--	--	20	20
Jamaica	18	--	--	6	24
Mexico	9,300	32	152	2,770	12,300
Panama	--	--	78	7	85
St. Lucia	--	--	--	14	14
Trinidad and Tobago	2	--	--	--	2
<b>Total</b>	<b>3,060,000</b>	<b>1,020</b>	<b>2,010</b>	<b>165,000</b>	<b>3,230,000</b>
<b>South America:</b>					
Argentina	1,230	--	195	1,210	2,630
Brazil	27,800	300	--	6	28,100
Chile	2,800	--	2	--	2,800
Colombia	801	--	51	15	867
Ecuador	2,400	--	18	--	2,420
Guyana	857	--	--	4	861
Peru	--	--	22	--	22
Suriname	16,100	--	--	--	16,100
Uruguay	--	--	--	816	816
Venezuela	6,740	5	384	291	7,420
<b>Total</b>	<b>58,800</b>	<b>305</b>	<b>672</b>	<b>2,350</b>	<b>62,100</b>
<b>Europe:</b>					
Austria	1,600	--	--	767	2,370
Belgium	117,000	--	20	--	117,000
Denmark	298	--	--	--	298
France	88,700	103	17	--	88,800
Germany	107,000	2,820	20	2	110,000
Hungary	2,400	--	--	--	2,400
Iceland	36	--	--	--	36
Ireland	1,580	34	--	--	1,610
Italy	83,500	319	--	24	83,900
Luxembourg	800	--	--	--	800
Netherlands	3,240	345	--	13,600	17,100
Poland	--	--	--	123	123
Portugal	4,640	--	--	--	4,640
Spain	641	--	--	270	911
Sweden	7,780	--	--	398	8,180
Switzerland	3,550	--	--	--	3,550
United Kingdom	81,900	140	31	1,600	83,700
<b>Total</b>	<b>504,000</b>	<b>3,760</b>	<b>89</b>	<b>16,700</b>	<b>525,000</b>
<b>Asia:</b>					
Brunei	20	--	--	--	20
China	26,400	94	150	--	26,600
Hong Kong	24	1	6	86	117
Indonesia	34	20	15	--	69
Japan	192,000	539	3	42	192,000
Korea, Republic of	13,500	68	19	6,110	19,700
Malaysia	772	--	--	--	772
Philippines	--	39	--	18	57

See footnotes at end of table.

TABLE 25--Continued  
U.S. EXPORTS OF CRUSHED STONE IN 1997, BY DESTINATION 1/

(Metric tons)

Destination	Limestone for cement manufacturing	Other	Chalk, crude	Granules, chippings	Total
Aisa--Continued:					
Singapore	34	321	4	29	388
Taiwan	27,200	1	--	178	27,400
Total	260,000	1,080	197	6,460	267,000
Oceania:					
Australia	10,500	--	--	1,470	12,000
New Zealand	--	--	1	1	2
Total	10,500	--	1	1,470	12,000
Middle East:					
Israel	--	--	187	--	187
Lebanon	--	--	1	--	1
Qatar	--	--	--	1,040	1,040
Saudi Arabia	--	--	12	1,060	1,070
Total	--	--	200	2,100	2,300
Africa:					
Ethiopia	19	--	--	--	19
South Africa, Republic	9	--	--	--	9
Total	28	--	--	--	28
Grand total	3,890,000	6,170	3,170	195,000	4,090,000
Total value (thousands)	\$22,700	\$7,710	\$2	\$12,300	\$42,700

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: U.S. Bureau of the Census.

TABLE 26  
U.S. IMPORTS OF CRUSHED STONE AND CALCIUM CARBONATE FINES, BY TYPE 1/

(Thousand metric tons and thousand dollars)

Type	1996		1997		Unit price
	Quantity	C.i.f. value 2/	Quantity	C.i.f. value 2/	
Crushed stone and chips:					
Limestone 2/	7,150	58,300	7,840	61,400	\$8
Limestone for flux or cement manufacturing	3,480	23,800	3,720	32,200	9
Quartzite	(3/)	524	(3/)	253	1,004
Other	664	7,000	865	9,740	11
Total	11,300	89,600	12,400	104,000	XX
Calcium carbonate fines: 4/					
Natural chalk	(3/)	1,260	(3/)	770	XX
Calcium carbonates other chalk	3	914	4	1,150	298
Total	3	2,170	4	1,920	XX
Grand total	11,300	91,800	12,400	106,000	XX

XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Excludes limestone for cement manufacturing.

3/ Less than 1/2 unit.

4/ Excludes precipitated calcium carbonates.

Source: U.S. Bureau of the Census.

FIGURE 1

PRODUCTION OF CRUSHED STONE IN THE UNITED STATES IN 1997, BY GEOGRAPHIC DIVISION

