

STONE, DIMENSION

By Lloyd E. Antonides¹ and Robert L. Virta

Domestic survey data and tables were prepared by Brandon P. Pfleckl, statistical assistant.

Dimension stone can be defined as any rock that has been removed from its natural place of origin for ultimate use in construction or monuments where the three dimensions of size (width, length, and thickness), together with shape and other elements of appearance, such as color, grain texture and pattern, and surface finish, are normal requirements. Durability (essentially based on mineral composition and hardness and past performance) and strength are other important selection criteria.

Although a variety of igneous, metamorphic, and sedimentary rocks are used as dimension stone, the principal rock types are granite, limestone, marble, sandstone, and slate. Other varieties of dimension stone that are normally considered to be special minor types include alabaster (massive gypsum), soapstone (massive talc), and various products fashioned from natural stone.

U.S. production of dimension stone was estimated to be 1.13 million metric tons (Mt) valued at \$224 million; these totals were essentially unchanged from those of 1997. Exports increased by 9% in value, to \$59.6 million, and imports for consumption increased by 27% in value, to \$698 million. Apparent consumption was estimated to be \$862 million.

In recent years, most dimension stone has been used in construction applications with the largest portions being sold or used as rough block for building and construction, flagstone, curbing, and ashlar and partially squared pieces. Monumental stone, another major type, includes memorials of various kinds.

Dimension stone production data for the United States are derived by the U.S. Geological Survey (USGS) from a voluntary survey of U.S. quarry producers of rough and dressed dimension stone. Data in this report cover rough crude quarried, irregular-shaped and rectangular blocks, and more highly processed stone. A number of other terms also are used to describe further processing, such as “worked,” “dressed,” “finished,” and “manufactured.” These and other terms used by the dimension stone industry describe such items as the mineral composition of the rock, the shape of the product, the method of finishing a stone, and the type of finished applied (Stone World Buyers Guide, 1998). No adjustments are made in the data to account for the sometimes substantial losses in processing rough stone into dressed stone. Sold or used data are considered to be equivalent to production because changes in stocks are not surveyed. Of the 227 producing dimension stone operations included in the survey for 1998, 112, or 49%, responded, which represent 68% of the estimated tonnage shown in table 1.

Production

Rough stone blocks split or cut from a quarry face are transported to processing plants, frequently located at the quarry site, at least for preliminary sizing. Further dressing, including final sizing and finishing operations, such as polishing, edging, and decorating, also may be done at the quarry site.

In 1998, granite accounted for 414,000 metric tons (t), or 37%, of the total domestic dimension stone production of 1.13 Mt, followed by limestone (33%), sandstone (16%), quartzite (4%), marble (3%), slate (3%), and miscellaneous stone (4%). Granite accounted for \$110 million, or 49%, of total domestic production of \$224 million, followed by limestone (27%), sandstone (10%), slate (6%), marble (4%), and miscellaneous (4%).

Production was reported in 33 States and Puerto Rico. Leading producer States, in descending order by tonnage, were Indiana, Vermont, Massachusetts, Wisconsin, and Georgia. These States accounted for 48% of the domestic production. The leading producer States, in descending order by value, were Indiana, Vermont, Minnesota, Massachusetts, and Texas. These States contributed 49% of the value of domestic production (table 3).

The top five producing companies, listed alphabetically, were Cold Spring Granite Co., in California, Minnesota, New York, Oklahoma, South Dakota, and Texas; Fletcher Granite Co., Inc., in Massachusetts and New Hampshire; Indiana Limestone Co., Inc., in Indiana; Oolitic Victor Stone Co., in Indiana; and Rock of Ages Corp., in New Hampshire and Vermont. These companies produced more than 25% of domestic production in tonnage and value. The leading 14 companies accounted for more than one-half the domestic tonnage and value.

Granite.—Dimension granite includes all visibly coarse-grained igneous rocks and similar metamorphic rocks. Finer grained igneous rock is termed “traprock” and is not normally included in this classification.

Granite was produced by 37 companies operating 72 quarries in 17 States. Production was 414,000 t valued at \$110 million. Although the value is similar to that of 1997, the tonnage decreased 7%. The top five producing States, in descending order by tonnage, were Massachusetts, Georgia, South Dakota, Vermont, and North Carolina. Massachusetts accounted for 21% of the tonnage and 16% of the value of the U.S. granite production (table 4).

The leading producers were Cold Spring Granite, Fletcher Granite, and Rock of Ages, accounting for more than one-half

¹Deceased.

of U.S. production in tonnage and value.

Limestone.—Dimension limestone comprises mainly calcite, as well as dolomitic and siliceous limestones. The type of stone also includes travertine (a crystalline, layered variety) and other porous and clastic-granular calcareous rocks. Varieties that can be polished are classified as marble by many producers and users.

Limestone was produced by 25 companies from 29 quarries in 9 States. Production increased by 8%, to 373,000 t from 346,000 t in 1997, and the value increased by 17%, to \$61.1 million from \$52.3 million in 1997. The top five producing States, in descending order by tonnage, were Indiana, Wisconsin, Minnesota, Texas, and Kansas. Indiana produced 58% of the U.S. tonnage and 46% of the value (table 5).

The leading producers were Buechel Stone Corporation, B.G. Hoadley Quarries Inc., Independent Limestone Co., Indiana Limestone, Minnesota Quarries Inc., Oolitic Victor Stone, and Valders Stone and Marble Inc. These firms accounted for more than 40% of the total U.S. tonnage and value.

Sandstone.—Dimension sandstone includes calcareous- and siliceous-cemented sandstones and conglomerates (rounded pebbles and cobbles cemented in a matrix of sand) and siltstone (fine quartz and clay particles), as well as quartzite, which may be described as any metamorphosed siliceous-cemented sandstone that fractures conchoidally through the grains.

Sandstone was produced by 28 companies operating 30 quarries in 15 States. Production decreased slightly to 185,000 t in 1998 from 186,000 t in 1997. The value decreased by 9%, to \$21.8 million in 1998 from \$23.9 million in 1997. The top five producing States, in descending order by tonnage, were New York, Arizona, Ohio, Pennsylvania, and California. New York was the leading producing State with 26% of the tonnage and 32% of the value (table 6).

The leading producers were Blaser Corp., Finger Lakes Stone Co., Johnston & Rhodes Bluestone Co., Ulti-Solutions Inc., and Waller Brothers Stone Co. These companies accounted for more than 45% of the tonnage and value of domestic production.

Marble.—Marble covers a variety of calcareous rocks in addition to those with the primary metamorphic crystalline carbonate composition and includes serpentine (a greenish hydrated magnesium silicate commonly veined with calcareous material), all of which must be capable of taking a polish.

Marble was mined by seven companies operating nine quarries in five States. Production was 40,500 t valued at \$10.4 million, essentially unchanged from those of 1997 (table 10). Vermont was the leading producing State, followed by Tennessee, Georgia, Colorado, and Arkansas. The leading producers were Tennessee Marble Co., Georgia Marble Co., and Vermont Quarries Co. Additional data have been withheld to avoid disclosing company proprietary information.

Slate.—Slate is a fine-grained metamorphic rock derived from shale or siltstone, readily breaks or splits into thin layers along micaceous surfaces parallel to bedding planes, and comprises mostly quartz, chlorite, mica, and clay minerals.

Slate was produced by 14 companies operating 18 quarries in 5 States. Production increased by 20%, to 30,000 t in 1998 from 25,000 t in 1997. The value decreased by 2%, to \$13.3

million in 1998 from \$13.6 million in 1997 (table 12). The producing States, in descending order by tonnage, were Vermont, Pennsylvania, New York, North Carolina, and California. The leading producers were Dally Slate Co., McAlpine Alfred Inc., Quarry Slate Industries Inc., Ritchie Bros. Slate Co., and U.S. Quarried Slate Products Inc. Additional data have been withheld to avoid disclosing company proprietary information.

Consumption

Rough stone represented 55% of the tonnage and 41% of the value of all dimension stone sold or used by domestic producers, including exports. The largest uses of rough stone were in construction (51%) and monumental (20%) applications, by tonnage. Dressed stone represented 45%, by tonnage, and 59%, by value of the total stone sold or used. The largest uses of dressed stone were in flagging (26%), curbing (22%), and ashlar and partially squared pieces (19%), by tonnage (table 7).

Uses for the different varieties of dimension stone varied considerably. The major uses of granite sold or used in 1998 were in monumental rough stone (28%), curbing (28%), rough blocks for construction (14%), monumental dressed stone (8%), and ashlar and partial squared pieces (7%), by tonnage (table 8). Primary uses of limestone were in rough blocks for building and construction (58%) and dressed stone ashlar and partially squared pieces (12%), by tonnage (table 9). Primary uses of marble were rough blocks for building and construction (28%), monumental dressed stone (12%), and dressed stone slabs and blocks for building and construction (11%), by tonnage (table 10). Primary uses of sandstone were in dressed stone for flagging (58%) and rough blocks for building and construction (15%), by tonnage (table 11). Dimension slate sold or used by producers in the United States in 1998 was principally for flooring (34%), roofing (31%), and flagging (18%), by tonnage (table 12).

Overall, the apparent consumption of dimension stone in the United States was estimated to be \$862 million in 1998, an increase of 20% compared with that of 1997. Apparent consumption is defined as production plus imports for consumption minus exports. Value data are used in the apparent consumption calculation because tonnage data are not available for imports and exports. Also, changes in industry stocks are not considered because the data are not available.

Prices

The average 1998 value for dimension stone of \$198 per metric ton, based on the USGS survey, was an increase of 4% from that of 1997. The average unit values for different types of dimension stone were granite, \$266 per ton; limestone, \$164 per ton; sandstone, \$118 per ton; marble, \$257 per ton; and slate, \$443 per ton. Price data that are available show considerable variation. Prices are substantially different, not only for the kind of stone, but also for appearance of the same kind of stone. Color, grain structure, and finish contribute significantly to price and marketability.

Exports.—Total exports of dimension stone types increased in value by about 9%, to \$60 million, compared with those of 1997; granite accounted for 62% of the export value. The largest share of granite was exported to Italy (table 13).

Imports.—The value of imports for consumption of dimension stone types increased by about 27%, to \$698 million. Italy continued to be the major single source of granite, accounting for 45% of granite imports. Brazil, Canada, and India each accounted for about 14% of granite imports (table 14). Italy also was a major source of rough and dressed marble, slate, and travertine imports (tables 15-16). Duties on imported dimension stone are given in table 2.

World Review

World dimension stone production, excluding the United States, was estimated to be approximately 62 Mt in 1996. Dimension stone was produced in about 30 countries. Marble composed approximately 34% of the world production; granite, 27%; and others, 39%. The top five producing countries were, in descending order by tonnage, India, China, Italy, Egypt, and Spain. These countries accounted for approximately two-thirds of the world production (Napoli, 1998). The United States was ranked 13th in the production of dimension stone in 1996.

Outlook

Demand is expected to grow for dimension stone during the next 5 or more years because of improved technology and variety and the increased costs of alternative construction materials. Additionally, for residential and office building construction, growth in use of dimension stone is expected in new prestige markets as well as in renovations to attract and keep tenants.

References Cited

Napoli, Silvana, 1998, Stone sector 1997: Marina di Carrara, Italy, Internazionale Marmi e Macchine Carrara S.p.A., 292 p.
Stone World, 1998, Stone World buyers guide: Stone World, v. 15, no. 11,

SOURCES OF INFORMATION

U.S. Geological Survey Publications

Stone, dimension. Ch. in Mineral Commodity Summaries, annual.²

Stone, dimension. Ch. in Minerals Yearbook, annual.²

Construction stone. Ch. in United States mineral resources, U.S. Geological Survey Professional Paper 820, 1973.

Other

American Monument Association, Columbus, OH.

Barre Granite Association, Barre, VT.

Building Stone Magazine (Quarterly), Building Stone Institute, Purdys, NY.

Dimension stone. Ch. in Mineral facts and problems, U.S. Bureau of Mines Bulletin 675, 1985.

Dimension stone, U.S. Bureau of Mines Information Circular 8391, 1986.

Dimensional stone (monthly), Ashlee Publishing Co., Inc., New York, NY.

Elberton Granite Association, Inc., Elberton, GA.

Indiana Limestone Institute of America Inc., Bedford, IN.

Industrial Minerals (monthly), Metal Bulletin plc, London (with particular references in July 1984, February 1991, November 1991, and February 1996).

Marble Institute of America, Columbus, OH.

Stone, decorative. Ch. in Industrial minerals and rocks, SME, Littleton, CO, 1994.

Stone, dimension. Ch. in Industrial minerals and rocks, SME, Littleton, CO, 1994.

Stone, dimension. Ch. in Mineral facts and problems, U.S. Bureau of Mines Bulletin 675, 1985.

Stone World (monthly), Business News Publishing Co., Troy, MI.

²Prior to January 1996, published by the U.S. Bureau of Mines.

TABLE 1
SALIENT U.S. DIMENSION STONE STATISTICS 1/

(Thousand metric tons and thousand dollars)

	1994	1995	1996	1997	1998
Sold or used by producers:					
Quantity 2/	1,190	1,160	1,150	1,180	1,130
Value 2/	\$218,000	\$233,000	\$234,000	\$225,000	\$224,000
Exports (value)	\$53,000	\$51,800	\$49,500	\$54,800	\$59,600
Imports for consumption (value)	\$440,000	\$478,000	\$462,000	\$548,000	\$698,000

1/ Data are rounded to three significant digits.

2/ Includes Puerto Rico and other U.S. possessions and territories.

TABLE 2
U.S. IMPORT DUTIES ON DIMENSION STONE

Tariff item	HTS. No.	Most favored nation (MFN) January 1, 1998	Non-MFN January 1, 1998
Slate, rough blocks or slabs	2514.00.0000	0.7% ad valorem	25% ad valorem.
Rough blocks or slabs of marble, travertine, other calcareous monumental or building stone	2515.00.0000		
Marble and travertine:			
Crude or roughly trimmed	2515.11.0000	\$0.69 per cubic meter	\$22.95 per cubic meter.
Marble, merely cut	2515.12.1000	0.4% ad valorem	13% ad valorem.
Travertine, merely cut	2515.12.2000	3.6% ad valorem	50% ad valorem.
Other calcareous stone alabaster	2515.20.0000	do.	Do.
Rough blocks or slabs of granite, porphyry, basalt, sandstone, other monumental or building stone	2516.00.0000		
Granite:			
Crude or roughly trimmed	2516.11.0000	Free	\$8.83 per cubic meter.
Merely cut	2516.12.0000	3.1% ad valorem	60% ad valorem.
Sandstone:			
Crude or roughly trimmed	2516.21.0000	Free	\$5.30 per cubic meter.
Merely cut	2516.22.0000	3.6% ad valorem	50% ad valorem.
Other monumental or building stone	2516.90.0000	do.	Do.
Setts, curbstones, flagstones	6801.00.0000	3.1% ad valorem	60% ad valorem.
Worked monumental or building stone	6802.00.0000		
Tiles and cubes under 7 centimeters square, granules	6802.10.0000	5.2% ad valorem	40% ad valorem.
Other stone and articles with a flat or even surface:			
Marble, travertine, alabaster:			
Travertine	6802.21.1000	4.6% ad valorem	50% ad valorem.
Other	6802.21.5000	1.9% ad valorem	13% ad valorem.
Other calcareous stone	6802.22.0000	5.1% ad valorem	50% ad valorem.
Granite	6802.23.0000	3.8% ad valorem	60% ad valorem.
Other stone	6802.29.0000	6.3% ad valorem	30% ad valorem.
Other:			
Marble, travertine, alabaster:	6802.91.0000		
Marble:			
Slabs	6802.91.0500	2.6% ad valorem	15% ad valorem.
Other	6802.91.1500	5.1% ad valorem	50% ad valorem.
Travertine:			
Articles of subheading 6802.21.1000 that have been dressed or polished, but not further worked			
	6802.91.2000	4.6% ad valorem	50% ad valorem.
Other	6802.91.2500	4.0% ad valorem	40% ad valorem.
Alabaster	6802.91.3000	4.8% ad valorem	50% ad valorem.
Other calcareous stone	6802.92.0000	5.1% ad valorem	Do.
Granite	6802.93.0000	3.8% ad valorem	60% ad valorem.
Other stone	6802.99.0000	6.5% ad valorem	40% ad valorem.
Worked slate and articles:			
Roofing slate	6803.00.1000	4.0% ad valorem	25% ad valorem.
Other	6803.00.5000	0.7% ad valorem	Do.

TABLE 3
DIMENSION STONE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
California	26,200	\$4,300	28,500	\$4,710
Colorado	10,800	3,250	14,200	3,410
Georgia 2/	65,800 r/	8,480 r/	72,100	8,790
Idaho	14,800	1,930	15,900	4,710
Indiana 2/	193,000 r/	25,000 r/	220,000	28,200
Kansas 2/	22,200 r/	1,810 r/	15,800	1,240
Maryland	21,500	2,440	23,100	2,730
Massachusetts	101,000 r/	18,100 r/	85,800	17,600
Minnesota	33,200 r/	17,900 r/	48,100	18,800
New York	54,700	9,380	52,900	8,870
North Carolina	24,200 r/	12,100 r/	26,200	12,500
Ohio	24,900 r/	3,260 r/	24,100	2,360
Oklahoma	5,770	995	3,480	635
Pennsylvania	53,900	10,800	45,200	9,480
South Carolina	12,900	1,150	12,900	1,150
Texas	35,300	11,300	40,900	16,700
Vermont	88,300 r/	19,700 r/	93,300	24,500
Virginia	10,400	3,300	5,430	600
Wisconsin	100,000	13,100	77,100	10,800
Other 3/	279,000 r/	56,400 r/	221,000	46,200
Total	1,180,000	225,000 r/	1,130,000	224,000

r/ Revised.

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

2/ Totals only include Georgia granite, Indiana limestone, and Kansas limestone; other stone included with "Other."

3/ Includes data for Alabama, Arizona, Arkansas, Connecticut, Maine, Michigan, Missouri, Montana, New Hampshire, New Mexico, Puerto Rico and other U.S. possessions and territories, South Dakota, Tennessee, Washington, and West Virginia.

TABLE 4
DIMENSION GRANITE SOLD OR USED BY PRODUCERS
IN THE UNITED STATES, BY STATE 1/

State	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
California	9,660	\$1,670	9,620	\$1,720
Georgia	58,400 r/	6,500 r/	64,800	6,800
Massachusetts	101,000 r/	18,100 r/	85,800	17,600
Michigan	727	26,100	--	--
Oklahoma	3,330	813	W	W
Pennsylvania	6,400	495	--	--
South Carolina	12,900	1,150	12,900	1,150
Other 2/	252,000 r/	55,500 r/	241,000	82,500
Total	444,000	110,000 r/	414,000	110,000

r/ Revised. 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 Idaho (1998), Maine, Minnesota, Missouri, New Hampshire, New York, North Carolina, Puerto Rico and other U.S. possessions and territories, South Dakota, Texas, Vermont, Virginia, and Wisconsin.

TABLE 5
DIMENSION LIMESTONE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY STATE 1/

State	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Indiana	190,000	\$24,900	217,000	\$28,100
Kansas	21,000	1,710	14,800	1,150
Texas	17,900	6,730	W	W
Wisconsin	88,700	10,300	66,100	8,120
Other 2/	27,600 r/	8,640 r/	75,400	23,700
Total	346,000 r/	52,300	373,000	61,100

r/ Revised. 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 Alabama, Arkansas, California, Minnesota, Ohio, Puerto Rico and other U.S. possessions and territories, and Vermont.

TABLE 6
DIMENSION SANDSTONE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY STATE 1/

State	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Kansas	1,210	\$100	W	W
Michigan	6,800	375	W	W
New York	49,800	7,490	47,600	\$6,980
Pennsylvania	23,100	3,350	18,200	2,590
West Virginia	1,130	177	W	W
Other 2/	104,000 r/	12,400 r/	119,000	10,400
Total	186,000 r/	23,900 r/	185,000	21,800

r/ Revised. 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 Alabama, Arizona, Arkansas, California, Colorado, Idaho, North Carolina, Ohio, Oklahoma, and Wisconsin.

TABLE 7
DIMENSION STONE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/ 2/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	302,000 r/	\$42,200 r/	317,000	\$43,700
Irregular-shaped stone	89,300	9,440	93,000	9,540
Monumental	127,000	20,700	123,000	21,000
Other 3/	125,000	20,800	84,100	17,500
Dressed stone:				
Ashlars and partially squared pieces	120,000	23,500	97,800	22,900
Slabs and blocks for building and construction	35,100	6,950	42,400	7,750
Monumental	37,400	19,100	37,800	19,500
Curbing	123,000	25,600	115,000	25,700
Flagging	129,000	11,700	133,000	12,100
Flagging (slate)	4,850	882	5,510	473
Roofing slate	11,300	6,880	9,440	6,640
Structural and sanitary	1,550	2,040	1,420	2,470
Flooring slate	3,730	2,070	10,100	21,400
Other 4/	71,200	33,700	60,600	33,300
Total	1,180,000	225,000 r/	1,130,000	224,000

r/ Revised.

1/ Includes Puerto Rico and other U.S. possessions and territories.

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

3/ Includes flagging (1997), exports, uses not specified, and uses not listed.

4/ Includes panels and veneer, tile, blackboards, exports, uses not specified, and uses not listed.

TABLE 8
DIMENSION GRANITE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	73,700	\$14,300	57,800	\$13,400
Irregular-shaped stone	5,590	770	1,120	962
Monumental	121,000 r/	19,100 r/	117,000	19,400
Other 2/	43,200	10,100	55,400	12,400
Dressed stone:				
Ashlars and partially squared pieces	24,700	9,620	28,900	12,100
Slabs and blocks for building and construction	2,390	1,030	W	W
Monumental	32,500	17,700	32,800	18,100
Curbing	122,000	25,600	115,000	25,700
Other 3/	19,100	12,000	4,790	7,510
Total	444,000	110,000 r/	414,000	110,000

r/ Revised. 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 exports and uses not listed.

3/ Includes panels and veneer, tile, flagging (1997), exports (1997), uses not specified, and uses not listed.

TABLE 9
DIMENSION LIMESTONE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	202,000	\$24,400	215,000	\$25,400
Irregular-shaped stone	26,500	2,010	27,500	2,330
Other 2/	21,600	4,120	25,700	4,860
Dressed stone:				
Ashlars and partially squared pieces	48,100	7,690	45,700	7,440
Slabs and blocks for building and construction	25,300	3,010	35,000	4,740
Flagging	8,330	700	9,160	1,140
Other 3/	13,500	10,400	15,300	15,200
Total	346,000 r/	52,300	373,000	61,100

r/ Revised.

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

2/ Includes exports and uses not listed.

3/ Includes panels and veneer, uses not specified, and uses not listed.

TABLE 10
DIMENSION MARBLE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/ 2/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	W	W	11,400	\$2,350
Other 3/	17,400	\$3,790	7,260	1,820
Dressed stone:				
Slabs and blocks for building and construction	4,620 r/	2,170 r/	4,620	2,170
Monumental	4,930	1,400	4,950	1,400
Flagging	471	31	444	29
Tile	4,800	1,510	W	W
Other 4/	8,300 r/	1,370 r/	11,900	2,670
Total	40,500 r/	10,300 r/	40,500	10,400

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

1/ Includes Puerto Rico.

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

3/ Includes monumental, uses not specified, and uses not listed.

4/ Includes panels and veneer, ashlar and partially squared pieces, and uses not listed.

TABLE 11
DIMENSION SANDSTONE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Rough stone:				
Rough blocks for building and construction	9,810	\$1,070	27,100	\$2,220
Irregular-shaped stone	11,600 r/	1,700 r/	11,900	1,610
Other 2/	911	41	--	--
Dressed stone:				
Ashlar and partially squared pieces	32,900	3,850	9,080	1,000
Slabs and blocks for building and construction	2,360	631	2,270	626
Flagging	106,000	9,760	108,000	9,770
Other 3/	23,300	6,880	26,500	6,530
Total	186,000 r/	23,900 r/	185,000	21,800

r/ Revised.

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

2/ Includes flagging (1997) and uses not listed (1997).

3/ Includes panels and veneer, tile, curbing, exports, uses not specified, and uses not listed.

TABLE 12
DIMENSION SLATE SOLD OR USED BY PRODUCERS IN THE
UNITED STATES, BY USE 1/

Use	1997		1998	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Flagging	4,850	\$883	5,510	\$473
Roofing	11,300	6,880	9,440	6,640
Structural and sanitary purposes	1,550	2,040	1,420	2,470
Flooring	3,730	2,070	10,100	2,150
Other 2/	3,610	1,780	3,530	1,610
Total	25,000	13,600	30,000	13,300

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

2/ Includes blackboards, uses not specified, and uses not listed.

TABLE 13
U.S. EXPORTS OF DIMENSION STONE, BY TYPE 1/

(Thousand metric tons and thousand dollars)

Type	1997		1998		Major destination 2/ in 1998, (percentage)
	Quantity	Value	Quantity	Value	
Marble, travertine, alabaster worked 3/	34	4,120	40	3,670	Canada, 51%.
Marble, travertine -- crude or roughly trimmed	2	716	1	1240	Germany, 52%.
Marble, travertine -- merely cut, by sawing or otherwise 4/	19 r/	1,980	7	1,770	The Bahamas, 25%.
Granite, crude or roughly trimmed	133	27,400	121	26,700	Italy, 42%.
Granite, merely cut by sawing or otherwise 4/	33	7,780	24	10,300	Taiwan, 35%.
Sandstone, crude or roughly trimmed	4	599	3	376	Canada, 70%.
Sandstone, merely cut, by sawing or otherwise 4/	5	1,030	6	1,180	Canada, 91%.
Slate, worked and articles of slate	NA	7,660	NA	9,820	Bahamas, 33%.
Slate, whether or not roughly trimmed or merely cut 4/	NA	592	NA	739	Canada, 52%.
Other calcareous monumental or building stone; alabaster 5/	5	1,060	14	2,130	Canada, 24%.
Other monumental or building stone 6/	7	1,850	8	1,700	Canada, 70%.
Total 7/	XX	54,800	XX	59,600	

r/ Revised. NA Not available. XX Not applicable.

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

2/ By value.

3/ Further worked than simply cut with a flat surface.

4/ Blocks or slabs.

5/ Crude, roughly trimmed, or merely cut into blocks or slabs. Other than marble and travertine (includes alabaster).

6/ Crude, roughly trimmed, or merely cut into blocks or slabs. Other than calcareous stone and alabaster, granite, sandstone, slate, dolomite, quartzite, and steatite.

7/ Excludes slate totals.

Source: Bureau of the Census.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF DIMENSION GRANITE, BY COUNTRY 1/

(Thousand dollars)

Country	Dressed									Total worked	Total dressed
	Worked granite										
	Rough granite 3/	Simply cut 4/	Not cut to size 5/	Cut to size 2/					Other		
				Max 1.5 centimeters	1.5-7.5 centimeters	Monumental Min 7.5 centimeters	Building Min 7.5 centimeters				
1997:											
Argentina	--	200	83	19	162	14	34	29	341	541	
Brazil	323	2,070	4,990	1,080	12,100	328	1,420	6,140	26,000	28,100	
Canada	3,910	893	741	2,490	8,910	5,980	7,270	3,020	28,400	29,300	
China	125	323	806	1,520	1,470	335	1,120	2,360	7,620	7,940	
Finland	51	--	--	--	--	--	--	126	126	126	
India	300	3,850	1,600	3,550	8,860	3,740	1,450	4,370	23,600	27,400	
Italy	1,270	6,370	15,600	6,640	28,900	950	8,150	21,600	81,900	88,200	
Japan	--	2	--	--	19	--	--	7	26	28	
Mexico	183	28	25	55	1,360	2	293	25	1,760	1,790	
Norway	26	33	22	--	43	--	--	--	65	98	
Portugal	27	13	19	--	94	--	7	--	120	133	
Saudi Arabia	--	140	451	2	1,270	--	--	49	1,780	1,920	
South Africa	374	91	4	--	89	--	72	212	377	468	
Spain	288	639	1,520	395	5,420	110	587	1,530	9,560	10,200	
Other	504	79	127	554	578	278	317	493	2,350	2,430	
Total	7,380	14,700	26,000	16,300	69,300	11,700	20,700	39,900	184,000	199,000	
1998:											
Argentina	149	69	76	11	228	19	44	61	439	508	
Brazil	490	2,240	4,850	1,600	17,200	576	1,890	10,700	36,800	39,000	
Canada	4,260	1,220	289	2,810	9,880	6,030	8,040	4,570	31,600	32,800	
China	461	870	509	1,990	2,250	738	1,870	5,180	12,500	13,400	
Finland	25	--	--	1	--	--	--	13	14	14	
India	2,760	4,890	1,390	4,980	12,100	3,730	1,870	5,940	30,000	34,900	
Italy	1,480	9,860	21,600	6,520	46,400	348	12,400	25,800	113,000	123,000	
Japan	20	6	9	23	15	--	--	41	88	94	
Mexico	38	178	3	34	1,830	--	814	15	2,690	2,870	
Norway	3	--	--	--	2	4	--	158	164	164	
Portugal	1	33	--	18	112	--	37	44	211	244	
Saudi Arabia	77	88	207	6	614	--	20	18	865	953	
South Africa	415	--	--	--	45	--	12	126	183	183	
Spain	128	516	1,810	398	7,370	18	591	1,440	11,600	12,100	
Other	688	437	268	112	1,040	76	381	1,200	3,070	3,510	
Total	11,000	20,400	31,000	18,500	99,000	11,500	28,000	55,300	243,000	264,000	

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

2/ One or more faces worked more than simply cut.

3/ Normal quarry products. Includes crude or roughly trimmed and roughly cut by sawing or otherwise. HTS No. 2516.11.0000, 2516.12.0030, and 2516.12.0060.

4/ Simply cut with a flat even surface. HTS No. 6802.23.0000.

5/ Only one face worked more than simply cut. HTS No. 6802.93.0010.

Source: Bureau of the Census.

TABLE 15
U.S. IMPORTS FOR CONSUMPTION OF MAJOR CATEGORIES OF DIMENSION MARBLE AND OTHER CALCAREOUS STONE,
BY COUNTRY 1/

Country	Dressed marble slabs 2/		Dressed marble--other 3/		Dressed other calcareous stone 4/		Rough marble 5/	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
1997:								
China	1,310	\$967	4,220	\$4,340	3,280	\$2,530	27	\$35
France	384	172	118	302	13,100	14,000	481	660
Greece	4,760	5,900	4,700	4,780	2,080	2,670	518	621
India	819	784	764	893	870	715	18	16
Italy	30,900	32,200	41,800	42,700	48,800	40,100	1,360	1,220
Mexico	459	419	6,840	6,250	7,070	6,120	1,420	836
Portugal	1,980	2,010	1,960	2,100	11,600	6,790	132	75
Spain	4,430	3,630	11,400	10,800	35,400	28,800	444	342
Other	10,900	8,020	13,900	15,900	77,400	15,500	268	218
Total	55,900	54,100	85,700	88,000	200,000	117,000	4,660	4,020
1998:								
China	2,030	1,340	4,110	4,710	3,360	2,740	89	58
France	43	36	604	1,120	35,400	17,500	51	95
Greece	5,430	5,810	4,430	5,150	4,970	6,160	1	3
India	683	571	976	1,250	510	593	3	9
Italy	40,200	39,600	57,000	55,600	64,800	55,700	3,820	2,180
Mexico	875	830	6,790	6,700	9,920	9,140	226	204
Portugal	1,300	1,100	2,290	2,100	10,900	7,620	104	18
Spain	7,130	5,770	20,500	17,800	48,500	36,300	257	215
Other	12,100	8,730	14,800	17,100	58,100	21,200	665	766
Total	69,800	63,800	111,000	112,000	236,000	157,000	5,220	3,550

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

2/ Worked more than simply cut with a flat surface. HTS No. 6802.91.0500.

3/ Merely cut by sawing or otherwise.

4/ Worked more than simply cut with a flat surface. Other than marble and travertine. HTS No. 6802.92.0000.

5/ Simply cut by sawing or otherwise into rectangular blocks or slabs. HTS No. 2515.12.1000.

Source: Bureau of the Census as modified by the U.S. Geological Survey.

TABLE 16
U.S. IMPORTS FOR CONSUMPTION OF DIMENSION STONE, BY TYPE 1/

Type	1997		1998		Major source 2/ for 1998, (percentage)
	Quantity metric tons	Value (thousands)	Quantity	Value (thousands)	
Calcareous stone--other 3/	24,600	\$6,160	11,100	\$5,900	Mexico, 22%.
Marble and alabaster 4/	do.	8,810	15,600	6,950	Mexico, 33%.
Sandstone, cut, by sawing or otherwise 5/	do.	342	410	239	Canada, 55%.
Slate, roofing	million square feet	9	9	5,110	China, 32%.
Slate, roughly trimmed or simply cut 5/	do.	2,040	3,440	1,490	Italy, 32%.
Slate, worked and articles of slate, and other 6/	do.	NA	NA	39,600	Italy, 33%.
Travertine, monumental or building stone and articles thereof 7/	do.	14,500	19,900	11,000	Italy, 49%.
Travertine, worked monumental or building stone 8/	do.	28,100	43,800	25,200	Italy, 54%.
Other stone-monumental or building stone 9/	do.	5,890	5,400	2,680	Mexico, 29%.

NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown. Does not include totals shown on tables 14 and 15.

2/ By value.

3/ Other than marble, travertine, and alabaster. Simply cut with a flat surface.

4/ Simply cut with a flat surface.

5/ Rectangular blocks or slabs.

6/ Other than roofing, including agglomerated slate.

7/ Simply cut with a flat surface. Other than tiles and granules.

8/ Dressed or polished but not further worked.

9/ Simply cut with a flat surface. Other than granite, calcareous stone, alabaster, slate, dolomite, quartzite, and steatite.

Source: Bureau of the Census.