

PUMICE AND PUMICITE

By Wallace P. Bolen

For 1996, the amount of pumice sold or used by domestic producers increased nearly 16% compared with 1995. Pumice and pumicite apparent consumption in the United States increased about 12% in 1996 compared with that of 1995, according to the U.S. Geological Survey (USGS). Because imports declined for the first time in three years, the increase was strictly attributable to greater consumption of domestically produced pumice and pumicite. By volume, most imports were for construction-related uses with small but significant amounts used for abrasives and stonewashing. Greece remained the largest source for pumice imports, supplying over 92% of pumice imports. (*See table 1.*)

Production

Pumice and pumicite sold or used by U.S. producers increased to 612,000 metric tons with a value of \$14.8 million. The average price of pumice fell 80 cents per ton from \$24.99 per metric ton to \$24.19 per ton. Most of the price decrease resulted from increased consumption of the less expensive abrasive grades pumice. Oregon remained as the largest source of pumice followed in descending order by, Idaho, New Mexico, California, Arizona, and Kansas.

Domestic production data for pumice and pumicite were developed by the USGS from a voluntary survey of U.S. operations. Fourteen companies with 15 active operations contributed 100% of the quantity and value of sold and used as shown in table 1. Four of the companies, with four operations, did not respond to the 1995 survey. Sold and used data from these companies were estimated. The ten companies that responded contributed about 78% of the 612,000 tons reported in table 1.

Domestic producers were Tufflite Inc., Phoenix, AZ; California Industrial Minerals Co., Friant, CA; Glass Mountain Pumice Inc., Tulalake, CA; U.S. Pumice Co., Chatsworth, CA; Amcor Precast, Idaho Falls, ID; Hess Pumice Products, Malad City, ID; Producers Pumice, Meridian, ID; Calvert Corp., Norton, KS; Kansas Minerals Inc., Mankato, KS; Copar Pumice Co. Inc., Espanola, NM; Western Mobile New Mexico, Inc., Santa Fe, NM; Utility Block Co., Albuquerque, NM; Cascade Pumice Co., Bend, OR; and Central Oregon Pumice Co., Bend, OR.

Consumption

The amount of pumice sold or used by U.S. producers rose due to increased consumption in the abrasives, concrete, and laundries markets. Abrasive sales nearly quadrupled to 111,000

tons, from 31,000 tons in 1995. This spectacular increase was spurred on by rising foreign demand which prompted one producer to double its production capacity for some grades of abrasive pumice. Consumption for miscellaneous uses increased as well. Demand for stonewashing (or laundry) grade pumice unexpectedly increased in 1996 and domestic producers were able to supply this demand. Industry insiders speculated that commercial laundries' experiments with alternate materials including diatomite, perlite, and chemical treatments, had limited success and therefore laundries were returning to pumice. Additionally, imports of stonewashing grade pumice apparently decreased as well, although hard numbers were not available. The laundries continued to experience either disposal or environmental problems with most of the stonewashing aides.

The most important market for pumice remained building block, consuming 48% of the total pumice sold or used in the United States. However, the amount of pumice sold for building block dropped nearly 9%, from 320,000 tons to 292,000 tons. Other important uses, in descending order, were for abrasives (18%), horticulture and landscaping (11%), stonewashing laundries (8%), and concrete aggregate (7.5%). The remaining pumice and pumicite was used for absorbent, diluents, fill, and other unspecified uses. (*See table 2.*)

Foreign Trade

Pumice imports in 1996 dropped 9% compared with 1995 to 215,000 tons. Greece continued to be the largest source of imports although the amount of pumice imported from Greece fell 3.4% to 198,000 tons. Previous reports of imports from Zaire in 1994 and 1995 to the United States were incorrect as it was determined that the tonnage should have been assigned to Greece. Other major exporting countries to the United States were Ecuador, Italy, and Turkey. Besides these countries, 19 other countries exported pumice to the United States in 1996. (*See table 3.*)

Exports dropped to 13,000 tons with a value of \$6.3 million. Receiving countries were led by Canada, 54%, followed by Japan, 11%; Surinam, 10%; and the United Kingdom, 9%. The remainder of exports went to 26 other countries on every continent except Antarctica.

World Review

The USGS estimates world pumice (and related materials) production at 11.1 million tons. Globally, Italy remained the dominant producer of pumice and pozzolan, with annual production around 5 million tons. Other leading countries in the

production of pumice and related materials where Chile, Ethiopia, France, Germany, Greece, Spain, Turkey, and the United States. Besides these countries, 17 other countries produced pumice around the world. (*See table 4.*)

Outlook

Consumption of pumice and pumicite in 1997 is expected to remain at about the same levels as in 1996, as construction activity is expected to continue at a steady level in 1997. Trade should pickup in 1997, with both imports and exports exceeding

1996 levels.

SOURCES OF INFORMATION

Bates, R.L., 1969, *Geology of the Industrial Rocks and Minerals*, Dover Publications, Inc., New York, p. 39-50.

Bush, A.L., 1973, *Lightweight aggregates*, in Brobst, D.A., and Pratt, W.P., eds., *United States Mineral Resources: U.S. Geological Survey Professional Paper 820*, p. 333-355.

Industrial Minerals Magazine (London).

TABLE 1
SALIENT PUMICE AND PUMICITE STATISTICS 1/

(Thousand metric tons and thousand dollars)

	1992	1993	1994	1995	1996
United States: Sold and used by producers:					
Pumice and pumicite	481	469	490	529	612
Value (f.o.b. mine and/or mill)	\$14,900	\$12,000	\$11,800	\$13,200	\$14,800
Average value per ton	\$30.99	\$25.68	\$24.08	\$24.99	\$24.19
Exports e/	11	18	18	16	13
Imports for consumption	257	143	143	238	215
Apparent consumption 2/	727	594	615	728	814
World: Production, pumice and related volcanic materials	11,200 r/	11,700 r/	11,500 r/	11,000 r/	11,100 e/

e/ Estimated. r/ Revised.

1/ Data are rounded to three significant digits.

2/ Production plus imports, minus exports, plus adjustments for Government and industry stock changes.

TABLE 2
PUMICE AND PUMICITE SOLD AND USED BY PRODUCERS IN THE UNITED STATES, BY USE 1/

(Thousand metric tons and thousand dollars)

Use	1995		1996	
	Quantity	Value	Quantity	Value
Abrasives 2/	31	3,560	111	4,590
Building block (includes decorative)	320	3,400	292	4,250
Concrete admixture and aggregate	32	599	46	820
Horticulture and landscaping	69	1,680	66	1,910
Laundries	41	2,090	49	1,340
Other 3/	36	1,890	48	1,860
Total	529	13,200	612	14,800

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

2/ Includes cleaning and scouring compounds.

3/ Includes absorbent, diluents, fill, and other unspecified uses.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF PUMICE, BY CLASS AND COUNTRY 1/

(Thousand metric tons and thousand dollars)

Country	Crude or unmanufactured		Wholly or partly unmanufactured	
	Quantity	Value	Quantity	Value
1995:				
Ecuador	25	294	--	--
Greece 2/	205 r/	14,900 r/	--	--
Italy	(3/)	281	1	246
Mexico	(3/)	63	--	--
Turkey	7	894	--	--
Zaire	(4/)	(4/)	--	--
Other 5/	(3/)	17	(3/)	83
Total	237	16,400	1	329
1996:				
Ecuador	3	185	--	--
Greece 2/	198	13,400	--	--
Italy	(3/)	265	(3/)	158
Mexico	(3/)	31	(3/)	27
Turkey	14	1,920	(3/)	10
Other 6/	(3/)	151	(3/)	513
Total	215	16,000	(3/)	708

r/ Revised.

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

2/ The Journal of Commerce Port Import/Export Reporting Service data.

3/ Less than 1/2 unit.

4/ Revised to zero.

5/ Includes Austria, Canada, Germany, Guatemala, the Republic of Korea, Spain, Taiwan, and the United Kingdom.

6/ Includes Austria, Canada, China, France, Germany, Guatemala, Honduras, Iceland, Indonesia, Japan, the Republic of Korea, the Netherlands, New Zealand, Nicaragua, the Philippines, Spain, Taiwan, and the United Kingdom.

Source: Bureau of the Census.

TABLE 4
PUMICE AND RELATED MATERIALS: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Metric tons)

Country 3/	1992	1993	1994	1995	1996 e/
Argentina 4/	89,060	98,631 r/	114,082 r/	52,255 r/	60,000
Austria: Trass	7,493	9,102	5,620	6,000 e/	6,000
Burkina Faso e/	10,000	10,000	11,000	11,000	11,000
Cameroon: Pozzolan e/	130,000	130,000	130,000	130,000	130,000
Cape Verde: Pozzolan e/	53,000	25,000	5,000	5,000	1,000
Chile: Pozzolan	384,744	448,250	452,000 r/	450,000 e/	450,000
Costa Rica e/	8,000	8,000	8,000	8,000	8,000
Dominica: Pumice and volcanic ash e/	100,000	100,000	100,000	100,000	100,000
Ecuador	20,600	12,230	8,665 r/	9,000 r/ e/	9,000
Ethiopia	49,000 e/	40,000 e/	127,000 r/	360,000 r/	400,000
France: Pozzolan and lapilli	404,000	526,000	490,000 r/	427,000 r/	450,000
Germany: Pumice (marketable)	591,000 e/	647,000	504,000 r/	625,000 e/	600,000
Greece:					
Pumice	635,578 r/	600,000 r/ e/	635,470 r/	600,000 r/ e/	600,000
Pozzolan	644,785 r/	600,000 r/ e/	649,608 r/	600,000 r/ e/	600,000
Guadeloupe: Pumice e/	220,000	210,000	210,000	210,000	210,000
Guatemala: Pumice	6,591	6,300	6,000 e/	6,200 e/	6,300
Iceland e/	33,514 5/	45,000	23,000	30,000	25,000
Iran	330,016	185,000	200,000 e/	200,000 e/	200,000
Italy: e/					
Pumice and pumiceous lapilli	600,000	700,000	700,000	650,000	600,000
Pozzolan	4,400,000	4,500,000	4,500,000	4,000,000	4,000,000
Macedonia: Volcanic tuff e/	100,000	75,000	75,000	75,000	75,000
Martinique: Pumice e/	140,000	130,000	130,000	130,000	130,000
New Zealand	112,476	69,179	116,840 r/	77,054 r/	80,000
Serbia and Montenegro: Volcanic tuff	108,792	74,230	75,000 e/	75,000 e/	75,000
Slovenia: Volcanic tuff e/	50,000	40,000	40,000	40,000	40,000
Spain e/ 6/	800,000	700,000	700,000	600,000	600,000
Turkey	736,316	1,224,114	947,174 r/	1,000,000 r/ e/	1,000,000
United States (sold and used by producers)	481,000	469,000	490,000	529,000	612,000 5/
Total	11,200,000 r/	11,700,000 r/	11,500,000 r/	11,000,000 r/	11,100,000

e/ Estimated. r/ Revised.

1/ World totals, U.S. data, and estimated data are rounded to three significant digits; may not add to totals shown.

2/ Table includes data available through Apr. 29, 1997.

3/ Pumice and related volcanic materials are also produced in a number of other countries, including (but not limited to) Japan, Mexico, the former U.S.S.R., and Zaire; output is not reported quantitatively, and available information is inadequate for the formulation of reliable estimates of output levels.

4/ Unspecified volcanic materials produced mainly for use in construction products (includes pumice, perlite, pozzolan and toba).

5/ Reported figure.

6/ Includes Canary Islands.