

Perlite

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The U.S. perlite industry established record highs in crude and expanded production in 1977. Total crude ore mined was 871,000 tons, or 144,000 tons more than 1976. The quantity and value of crude perlite sold and used by producers totaled 597,000 tons and \$10.8 million, respectively, both record highs. New Mexico continued to be the major perlite-producing State with 89% of the total crude perlite mined.

Producers of expanded perlite at 80 plants in 33 States also established a record high production in 1977 to meet the increasing demand for perlite insulation products. The total quantity of expanded perlite sold or used was 498,000 tons valued at nearly

\$53.6 million, or increases of 15% and 31% over the previous records established in 1976. Illinois continued to be the leading State in output of expanded perlite.

Average value of crude perlite sold or used in 1977 was \$18 per ton compared with \$17 per ton in 1976. Average value of expanded perlite sold or used increased from \$94.87 per ton in 1976 to \$107.60 per ton, in line with rising costs of production, energy use, pollution control, and transportation.

Market demand remained strong for nearly all perlite end uses in 1977 with insulation board products showing the greatest increase (33%) over that of 1976.

Table 1.—Crude and expanded perlite produced and sold or used by producers in the United States

(Thousand short tons and thousand dollars)

Year	Crude perlite					Expanded perlite			
	Quantity mined	Sold		Used at own plant to make expanded material		Total quantity sold and used	Quantity produced	Sold or used	
		Quantity	Value	Quantity	Value			Quantity	Value
1973 -----	759	238	2,771	306	2,819	544	424	418	28,005
1974 -----	676	275	3,544	280	3,480	555	423	419	30,808
1975 -----	706	239	3,407	273	3,874	512	401	394	34,258
1976 -----	727	288	4,908	265	4,489	553	438	432	41,017
1977 -----	871	298	5,514	299	5,239	597	504	498	53,558

DOMESTIC PRODUCTION

A record 871,000 tons of crude perlite was mined by 11 companies from 12 operations in 6 States in 1977. Five mining operations in New Mexico produced a record total of 776,000 tons of ore, or 89% of the U.S. total, followed by Arizona, California, Idaho, Colorado, and Nevada in descending order of production. The quantity of crude perlite

sold or used by producers in New Mexico was a record 521,000 tons, or 8% greater than the previous record quantity (481,000 tons) established in 1976.

Crude perlite sold or used by domestic producers in 1977 also established record highs in quantity (597,000 tons) and value (\$10.8 million). The 8% increase in quan-

tity in 1977 was primarily due to the increased demand for use of perlite in the construction industry, and the 14% increase in value reflected for the most part the rising costs for mining, processing, and shipping of perlite encountered by domestic producers during the year.

Producers of crude perlite during the year were Filters International, Inc., Harborlite Corp., and Guzman Construction Co. in Arizona; American Perlite Corp. in California; Persolite Products, Inc. in Colorado; Oneida Perlite Corp. in Idaho; Delamor Perlite Co. (Delamar-Mackie) and United States Gypsum Co. in Nevada; and Grefco, Inc., Johns-Manville Sales Corp., Silbrico Corp., and United States Gypsum Co. in New Mexico.

Alltime highs were also set for expanded perlite produced in 1977, and both quantity and value of perlite sold by expanders.

Compared with 1976, expanded perlite produced at 80 plants in 33 States totaled 504,000 tons, or an increase of 15%, and the quantity and value of expanded perlite sold or used increased 15% and 31%, respectively.

Leading States in descending order of the quantity of expanded perlite produced in 1977 were Illinois, Mississippi, California, Virginia, Texas, Pennsylvania, Kentucky, Colorado, New Jersey, Florida, Indiana, and Ohio. In descending order of the value of expanded perlite sold or used, the leading States were Illinois, California, Kentucky, Texas, Pennsylvania, New Jersey, Mississippi, Virginia, Florida, and Colorado. California had nine producing plants in 1977, followed by Texas with seven, Pennsylvania and Indiana with six each, and Illinois with five.

Table 2.—Expanded perlite produced and sold or used by producers in the United States

State	1976				1977			
	Quantity produced (short tons)	Sold or used			Quantity produced (short tons)	Sold or used		
		Quantity (short tons)	Value (thousands)	Average value per ton ¹		Quantity (short tons)	Value (thousands)	Average Value per ton ¹
Arkansas					618	600	\$90	\$150.00
California	28,050	27,359	\$3,282	\$119.97	41,547	40,924	4,886	119.38
Florida	23,784	23,611	1,552	65.73	27,439	26,193	2,175	83.04
Indiana	15,171	15,102	1,228	81.28	19,757	19,757	1,828	92.53
Iowa	991	932	140	150.00	1,027	976	154	157.27
Kansas	5,700	5,644	689	122.08	5,250	5,105	715	140.06
Missouri	6,776	6,715	878	130.68	6,270	6,155	838	136.21
New York	11,714	11,703	952	81.34	12,830	12,977	1,012	77.99
Ohio	33,085	33,122	2,707	81.74	35,262	34,916	3,467	99.29
Pennsylvania	38,073	37,830	3,857	101.97	35,553	34,786	3,721	106.97
Texas	274,745	270,327	25,732	95.19	318,894	315,376	34,672	109.94
Other States ²								
Total	438,089	432,345	41,017	94.87	504,442	497,765	53,558	107.60

¹Average value per ton based on unrounded data.

²Includes Colorado, Georgia, Idaho, Illinois, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Nevada, New Hampshire, New Jersey, North Carolina, Oregon, Tennessee, Utah, Virginia, West Virginia, Wisconsin, Wyoming, and unidentified quantity and value sold or used in 1977 only.

CONSUMPTION AND USES

Domestic consumption of expanded perlite increased 15% in quantity over that of 1976 and totaled 498,000 tons to set a record for the second straight year. The new record consumption total in 1977 was largely due to the increased demand for insulation board products using perlite for energy conservation in new construction. The distribution of expanded perlite by end-use categories is shown in percent in table 3. In descending order of quantity sold or used, the principal uses of expanded perlite in 1977 were roof-insulation board, filter aids,

acoustical ceiling tile, plaster aggregates, horticultural aggregates, and concrete aggregates. Expanded perlite sold or used for the three leading end uses (insulation board, filter aids, and acoustical tile) combined accounted for 347,000 tons, or 70% of the total quantity and 62% of the total sales value.

Although, as shown in table 3, three end-use categories declined in percent of use, three increased, and three remained unchanged, the market pattern for nearly all end uses of expanded perlite remained

strong in 1977. Compared with 1976, sales for filter aids decreased from 21% to 17%, but declined by only 6,700 tons; horticultural aggregates decreased from 9% to 7%, but showed a gain of 5,400 tons; concrete aggregates declined from 7% to 5%, but increased in quantity by 4,800 tons; plaster aggregates increased from 6% to 8%, a gain of only 1,000 tons; masonry and cavity fill insulation increased from 3% to 4%, or a gain of 5,900 tons; and "other" uses increased from 41% to 46%, primarily because of a 33% increase in roof insulation board. The three end uses that remained unchanged—low-temperature insulation (2%), fillers

(1%), and formed products (10%)—had a combined 9,900-ton increase in sales in 1977.

Table 3.—End use of expanded perlite
(Percent)

Use	1976	1977
Filter aid	21	17
Plaster aggregate	6	8
Concrete aggregate	7	5
Horticultural aggregate	9	7
Low-temperature insulation	2	2
Masonry and cavity fill insulation	3	4
Fillers	1	1
Formed products	10	10
Other (including insulation board)	41	46

PRICES

Processed (crushed, cleaned, and sized) crude perlite was sold by producers to expanders at an average price of \$18.50 per ton, or an increase of \$1.46 per ton over that in 1976. Crude perlite used by producers in their own expanding plants was valued at \$17.52 per ton, or an increase of \$0.58 per ton compared with that of 1976. Compared with 1976, the weighted average price of crude processed perlite increased \$1.02 per ton to \$18.01.

Expanded perlite sold or used, according to producers, was valued at \$107.60 per ton, or an increase of \$12.73 per ton compared with that in 1976. Average values for expanded perlite by State ranged from \$60 to \$228 per ton compared with the 1976 range of \$40 to \$167 per ton. Average prices for expanded perlite end uses in 1977 ranged from \$60 per ton for acoustical tile to \$224 per ton for low-temperature insulation products.

WORLD REVIEW

Hungary.—Crude perlite production in 1976 was reported to be 106,000 tons, a 34% increase over the 1975 quantity mined. The crude perlite was processed and expanded at plants in Tokaj and Balaton. Approximately 70% of the crude ore production is exported annually to European countries.

Philippines.—Crude perlite output in 1977 was 1,645 tons, or 10% lower than in 1976. Two companies mined perlite on the northern island of Luzon. Perlite Industries and Minerals Corp. (Pimcor) mined perlite near Legaspi and expanded perlite at Muntinlupa, and Trinity Lodge Mining Corp. mined near Albay and expanded the ore at San Pedro, Laguna.

Turkey.—A number of perlite deposits in eastern and western Turkey are commercially exploited. Approximately 58,000 tons of crude perlite was produced in 1977, primarily for local construction industry uses. Plans have been formulated to construct a processing plant and an expanding plant at Cumaovasi in western Turkey to meet a growing demand for perlite in the country.²

United Kingdom.—Imports of crude processed perlite ore, primarily from Greece and Italy (94%), were 117,500 tons in 1977, or a decline of 13% from the 135,000 tons imported in 1976. The imported ore was expanded in Great Britain, primarily for use in plaster aggregate products.

TECHNOLOGY

In 1977, the Perlite Institute, Inc., New York, published separately revised information on perlite loose fill insulation and perlite plaster aggregate. Technical data sheet No. 2-4 on loose fill insulation describes the insulation qualities of expanded perlite in high- and low-temperature and cryogenic applications at various densities.

Catalog 90 on perlite plaster is a revised edition of information pertaining to perlite-portland cement and perlite-gypsum plaster applications.

¹Industry economist, Division of Nonmetallic Minerals.

²Industrial Minerals (London). Turkey. Foundations Laid for Perlite Plant. No. 114, March 1977, p. 12.

