



2017 Minerals Yearbook

PERLITE [ADVANCE RELEASE]

PERLITE

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In 2017, the amount of domestic processed crude perlite sold and used increased by 10% to 479,000 metric tons (t) from 437,000 t in 2016 (table 1). The average unit value of processed crude perlite increased by 13%, compared with that of 2016. In 2017, expanded perlite production was 545,000 t. The 21-year (1997 through 2017) average annual tonnages for sold and used expanded perlite and processed crude perlite were 591,000 metric tons per year (t/yr) and 500,000 t/yr, respectively. Although sales and use of expanded perlite and processed crude perlite fluctuated, the trend shows an overall decrease in quantities sold and used and an overall increase in unit values (fig. 1). The amount of expanded perlite sold and used in 2017 was 545,000 t, a decrease of 22% compared with 695,000 t in 1997. The amount of processed crude perlite sold and used was 479,000 t in 2017, a decrease of 32% compared with 706,000 t in 1997.

Exports of processed crude perlite were estimated to have been approximately 18,000 t in 2017, whereas imports of processed crude perlite were estimated at about 171,000 t (table 1). World production from 17 countries decreased slightly to 4.43 million metric tons (Mt) in 2017, compared with 4.52 Mt in 2016 (tables 1, 4). Percentages throughout this chapter were calculated using unrounded data.

Production

Domestic production data for perlite were compiled by the U.S. Geological Survey (USGS) from two voluntary annual surveys—one for domestic mine operations (mined and processed crude perlite) and one for expanding plants. Processed crude perlite was produced by six companies with eight mines (table 3). Of the nine mines surveyed, eight were active, and six responded, a 75% response rate. According to data collected by the USGS, the 479,000 t of processed crude perlite sold and used in 2017 was valued at \$35.1 million, an increase in quantity of 10% and an increase in value of 23% from those in 2016. The 545,000 t of expanded perlite sold or used by domestic producers was valued at \$182 million, a 3% increase in quantity and a 5% increase in value compared with revised 2016 data (table 1).

The processed crude perlite reported in table 1 was mined in Arizona (Imerys S.A., France), Idaho (Hess Perlite), Nevada (EP Minerals, LLC and Wilkin Mining & Trucking, Inc.), New Mexico (Dicaperl Minerals Corp. and Imerys S.A.), and Oregon (Cornerstone Industrial Minerals Corp.). In November 2016, Sunrise Resources plc (United Kingdom) announced plans to develop a pozzolan project in Esmeralda County, NV, at two mineral deposits with positive initial testing for perlite. In 2017, Sunrise Resources completed a first drill program and testing (Sunrise Resources plc, 2019).

Perlite was expanded at 59 plants in 27 States. Of the 61 plants surveyed, one was inactive; 34 plant operators

responded to the USGS survey, representing 58% of the active plants and 69% of the production. Production information for nonresponding companies was estimated using previously reported data, with adjustments based on currently reported production trends. The expanding plants used domestic or imported processed crude perlite.

Consumption

Construction uses of expanded perlite consisted of concrete aggregate, formed products, masonry- and cavity-fill insulation, and plaster aggregate. Expanded perlite consumed for construction-related uses was about 273,000 t, accounting for 50% of the total production. Horticultural uses for perlite increased to 106,000 t, accounting for 20% of the total production. In 2017, expanded perlite consumption increased for concrete aggregate, fillers, filter aid, formed products, horticultural aggregate, and plaster aggregate, compared with that of 2016, but decreased for low temperature insulation, masonry- and cavity-fill insulation, and unspecified uses (table 2, fig. 2). According to data from the U.S. Census Bureau, the annual value of construction put in place in the United States increased from \$1.186 trillion in 2016 to \$1.233 trillion in 2017; private residential construction increased by 10% to \$523 billion in 2017 from the previous year; total private construction increased to \$953 billion, an increase of 6% from that of 2016; and total public construction decreased slightly to \$280 billion in 2017 (U.S. Census Bureau, undated). Increased construction partially contributed to the increase in expanded perlite consumption.

The perlite industry has experienced a 50% increase in horticultural use since 1997. Supporting the long-term increase is the use of perlite for hydroponic systems, the use in soil mixtures, and the exclusive use by some marijuana growers. By 2017, 30 States and the District of Columbia had programs that legalized marijuana for medicinal purposes, and 7 States and the District of Columbia also had legalized marijuana for recreational use (Speights, 2020). Other States were considering at least partial legalization that could result in the increased consumption of perlite to support increased planting and growing of marijuana.

Prices

The average unit value of processed crude perlite sold to expanders in 2017 was \$73 per metric ton, a 12% increase compared with that of 2016. In 2017, the average unit value of perlite consumed by perlite expanding plants was \$95 per metric ton, an 8% increase from that of the prior year. The average unit value of expanded perlite in 2017 was \$334 per metric ton, slightly higher than that in 2016 (table 1, fig. 1).

Expanded perlite unit values ranged from \$207 per metric ton for formed products to \$882 per metric ton for low-temperature insulation (table 2). The wide range is a function of the end use and quality of the perlite required for various products.

Foreign Trade

Because the U.S. Census Bureau reported trade in perlite and vermiculite in a combined category in the Harmonized Tariff Schedule of the United States under code 2530.10.0000 (vermiculite, perlite, and chlorites, unexpanded), foreign trade for perlite was estimated on the basis of the source of imported material published by the U.S. Census Bureau.

In 2017, exports of processed crude perlite by the United States were estimated to be 18,000 t, 12% higher than those in 2016. Most of the perlite was exported to Canada (92%). This likely was horticultural-grade perlite, to be mixed with peat and other ingredients to produce potting soils. Saudi Arabia received 4% and the Republic of Korea 2% of the total perlite exports from the United States.

The United States imported crude perlite mostly from Greece. Based on shipping data, the total amount imported was estimated to be 171,000 t. In 2017, the unit value of imported perlite was estimated to be \$129 per metric ton, a 19% increase from \$108 per metric ton a year earlier. Most of the imported perlite came through the customs districts of Boston, MA; Chicago, IL; Houston-Galveston, TX; Laredo, TX; Mobile, AL; New Orleans, LA; New York City, NY; Philadelphia, PA; and Savannah, GA, but a few shipments came through Los Angeles, CA. After arriving at any of these ports, perlite was shipped to expanding plants throughout the country. Imerys became a major importer of the perlite from Greece after it purchased S&B Industrial Minerals S.A. (Greece) in February 2015.

World Review

In 2017, the total world production of crude perlite was 4.43 Mt, a slight decrease from the revised world total of 4.52 Mt in 2016 (table 4). The leading countries were, in order of descending production, China, Turkey, Greece, and the United States. Greece and Turkey remained the leading exporters of perlite. China was the leading producer of perlite, and it appears that most of it was consumed internally.

Outlook

The total consumption of perlite in the United States is expected to increase in 2018, if privately owned housing and commercial construction increase.

Perlite expanding plants, particularly in the eastern part of the United States, are expected to continue to purchase imported perlite, because it has become economically competitive with domestically produced perlite. In 2017, about one-quarter of the perlite consumed in the United States was imported.

References Cited

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GENERAL SOURCES OF INFORMATION

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Other

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TABLE 1
SALIENT PERLITE STATISTICS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

	2013	2014	2015	2016	2017
United States:					
Mine production ²	471	462	501 ^r	521 ^r	570
Processed crude:					
Sold:					
Quantity	340	388	380	424	468
Value	19,300	21,500	22,700	27,300	34,100
Average value	57	55	60	64	73
dollars per metric ton					
Used:					
Quantity	79	75	65	13	11
Value	3,800	3,960	4,230	1,140	1,040
Average value	48	53	65	88	95
dollars per metric ton					
Total, sold and used:					
Quantity	419	462	444	437	479
Value	23,100	25,500	26,900	28,400	35,100
Average value	55	55	61	65	73
dollars per metric ton					
Imports for consumption: ³					
Quantity	169 ^r	160 ^r	154 ^r	199 ^r	171
Value	20,600 ^r	19,200 ^r	18,100 ^r	21,500 ^r	22,100
Average value	122 ^r	120 ^r	117 ^r	108 ^r	129
dollars per metric ton					
Exports: ³					
Quantity	25 ^r	20 ^r	18 ^r	16 ^r	18
Value	3,450 ^r	3,920 ^r	2,480 ^r	2,010 ^r	2,180
Average value	138 ^r	196 ^r	138 ^r	125 ^r	121
dollars per metric ton					
Expanded:					
Production, quantity	467	481	503	537 ^r	545
Sold or used:					
Quantity	463	475	503	528 ^r	545
Value	148,000	153,000	168,000	173,000	182,000
Average value	320	323	333	327 ^r	334
dollars per metric ton					
World production	4,510 ^r	4,480 ^r	4,350 ^r	4,520 ^r	4,430

^rRevised.

¹Table includes data available through February 20, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Crude ore mined and stockpiled for processing.

³Source: U.S. Census Bureau, data adjusted by U.S. Geological Survey. Data are for "vermiculite, perlite and chlorites, unexpanded," Harmonized Tariff Schedule of the United States (HTS) code 2530.10.0000.

TABLE 2
EXPANDED PERLITE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY USE¹

Use	2016			2017		
	Quantity (metric tons)	Value (thousands)	Average value ² (dollars per metric ton)	Quantity (metric tons)	Value (thousands)	Average value ² (dollars per metric ton)
Concrete aggregate	1,780	\$674 ^r	\$378 ^r	1,930	\$711	\$369
Fillers	73,600	32,700	444	77,200	34,200	448
Filter aid	46,500 ^r	16,900 ^r	363 ^r	63,800	25,000	392
Formed products ³	245,000 ^r	52,000 ^r	212 ^r	245,000	50,700	207
High-temperature insulation	W	W	W	W	W	W
Horticultural aggregate	104,000 ^r	46,900 ^r	450 ^r	106,000	47,400	448
Low-temperature insulation	2,750	2,140 ^r	777 ^r	2,320	2,040	882
Masonry- and cavity-fill insulation	2,450 ^r	1,310	536 ^r	2,210	1,340	606
Plaster aggregate	20,200	9,570 ^r	473 ^r	23,800	11,300	474
Unspecified and other ⁴	31,400 ^r	10,500 ^r	334 ^r	22,400	9,290	405
Total or average	528,000 ^r	173,000 ^r	327 ^r	545,000	182,000	334

^rRevised. W Withheld to avoid disclosing company proprietary data.

¹Table includes data available through February 20, 2020. Data are rounded to no more than three significant digits; may not add to totals shown.

²Average value is based on unrounded data and is rounded to the nearest dollar.

³Includes acoustic ceiling panels, pipe insulation, roof insulation board, and unspecified formed products (weighted averages).

⁴Estimated and reported data, which includes absorbents, laundries, paint texturizers, and other miscellaneous uses unspecified. Unspecified and other uses were combined to avoid disclosing company proprietary data.

TABLE 3
ACTIVE PERLITE MINES AND EXPANDING PLANTS IN THE UNITED STATES IN 2017

Company	State	County or parish
Mines:		
Cornerstone Industrial Minerals Corp.	Oregon	Lake
Dicaperl Minerals Corp.	New Mexico	Socorro
Do.	do.	Taos
EP Minerals, LLC	Nevada	Churchill
Hess Perlite	Idaho	Oneida
Imerys S.A.	Arizona	Pinal
Do.	New Mexico	Taos
Wilkin Mining & Trucking, Inc.	Nevada	Lincoln
Expanding plants:		
A&B Group, Inc.	Louisiana	Calcasieu
Ambient Minerals, Inc.	Arkansas	Saline
American Garden Perlite, LLC	Florida	Polk
Armstrong World Industries, Inc.	do.	Baker
Do.	Georgia	Bibb
Do.	Oregon	Tillamook
Do.	Pennsylvania	Lancaster
Aurora Innovations	Oregon	Lake
Aztec Perlite Co.	California	San Diego
Carolina Perlite Co.	North Carolina	Rowan
Chicago Bridge & Iron Co. N.V.	Illinois	Kendall
Dicaperl Minerals Corp.	Indiana	Montgomery
Do.	Maine	Knox
Do.	New Jersey	Camden
Do.	Nevada	Churchill
Do.	Oklahoma	Oklahoma
Do.	Tennessee	Davidson
EP Minerals, LLC	Nevada	Pershing
Georgia-Pacific LLC	Missouri	Crawford
Do.	Oregon	Clackamas
Hess Perlite	Idaho	Oneida
Imerys S.A.	California	San Diego
Do.	Florida	Gadsden
Do.	Michigan	Kalamazoo
Do.	North Carolina	Franklin
Do.	do.	Burke
Do.	Texas	Harris
Do.	Wyoming	Sweetwater
IT Minerals LLC	Louisiana	Orleans
James Hardie Building Products, Inc.	Florida	Hillsborough
Johns Manville Corp.	Illinois	Will
Do.	Georgia	Glynn
Midwest Perlite Inc.	Wisconsin	Outagamie
Nestle Purina PetCare Co.	Missouri	St. Louis
NorCal Perlite Inc.	California	Contra Costa
Pennsylvania Perlite Corp.	Pennsylvania	Lehigh
Do.	do.	York
Persolite Products Inc.	Colorado	Fremont
PVP Industries, Inc.	Ohio	Trumbull
Saint-Gobain Corp.	Michigan	Baraga
Do.	Mississippi	Lauderdale
Schundler Co.	New Jersey	Middlesex
Silbrico Corp.	Illinois	Cook
Specialty Vermiculite Corp.	Florida	Broward
Do.	Arizona	Maricopa

See footnotes at end of table.

TABLE 3—Continued
ACTIVE PERLITE MINES AND EXPANDING PLANTS IN THE UNITED STATES IN 2017

Company	State	County or parish
Expanding plants:—Continued		
Sun Gro Horticulture Canada Ltd.	Arkansas	Jefferson
Do.	Michigan	Branch
Do.	Texas	Kaufman
Do.	North Carolina	Pasquotank
Supreme Perlite Co.	Oregon	Multnomah
Therm-O-Rock East, Inc.	Pennsylvania	Washington
Therm-O-Rock West, Inc.	Arizona	Maricopa
USG Corp.	Indiana	Martin
Do.	Minnesota	Carlton
Do.	Mississippi	Washington
Do.	Nevada	Washoe
Do.	Ohio	Ottawa
Do.	Texas	Nolan
Whittemore Co., Inc.	Massachusetts	Essex
Wilkin Mining & Trucking, Inc.	Nevada	Lincoln
Do., do. Ditto.		

TABLE 4
PERLITE: WORLD PRODUCTION, BY COUNTRY OR LOCALITY¹

(Metric tons)

Country or locality ²	2013	2014	2015	2016	2017
Argentina	24,737 ^r	22,680 ^r	23,282 ^r	17,905 ^r	17,000 ^e
Armenia	77,784 ^r	84,904 ^r	57,657 ^r	44,820 ^r	45,000 ^e
Australia	NA	5,000	7,000	8,000 ^e	1,000 ^e
Bulgaria ^e	5,000	5,000	5,000	5,000	5,000
China ^e	1,800,000	1,800,000	1,800,000	1,930,000 ^r	1,930,000
Greece, crude ³	890,000 ^e	985,328 ^r	890,670 ^r	921,410 ^r	700,000
Hungary ^{3,4}	36,000 ^r	38,000 ^r	40,000 ^e	42,200	42,200
Iran	55,101 ^r	42,646 ^r	63,030 ^r	17,083 ^r	20,000 ^e
Mexico ³	27,200	26,000	26,000 ^e	19,000 ^r	20,000 ^e
New Zealand	NA	22,000 ^e	25,000 ^e	25,000 ^e	25,000
Philippines	14,249	17,194	18,575 ^r	21,645 ^r	19,000 ^e
Slovakia	16,000	17,000	25,000 ^r	19,000 ^r	18,000 ^e
South Africa	1,078	1,100	1,000 ^e	1,000 ^e	1,000 ^e
Thailand	14,293	54,100	17,200	15,690 ^r	16,000 ^e
Turkey ³	1,075,949	897,125	843,242 ^r	909,254 ^r	1,000,000 ^e
United States ⁵	471,000	462,000	501,000 ^r	521,000 ^r	570,000
Zimbabwe ^e	1,000	1,000	1,000	1,000	1,000
Total	4,510,000 ^r	4,480,000 ^r	4,350,000 ^r	4,520,000 ^r	4,430,000

^eEstimated. ^rRevised. NA Not available.

¹Table includes data available through August 14, 2018. All data are reported unless otherwise noted. Totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the countries and (or) localities listed, Algeria, Cyprus, Georgia, Morocco, and Russia may have produced perlite, but available information was inadequate to make reliable estimates of output.

³Crude ore.

⁴Hungary reports perlite production in cubic meters, as follows: 2013—31,024; 2014—32,750; 2015—34,500 (estimated); 2016—36,427; and 2017—36,427. One cubic meter of perlite equals 1.159 metric tons.

⁵Mine production.

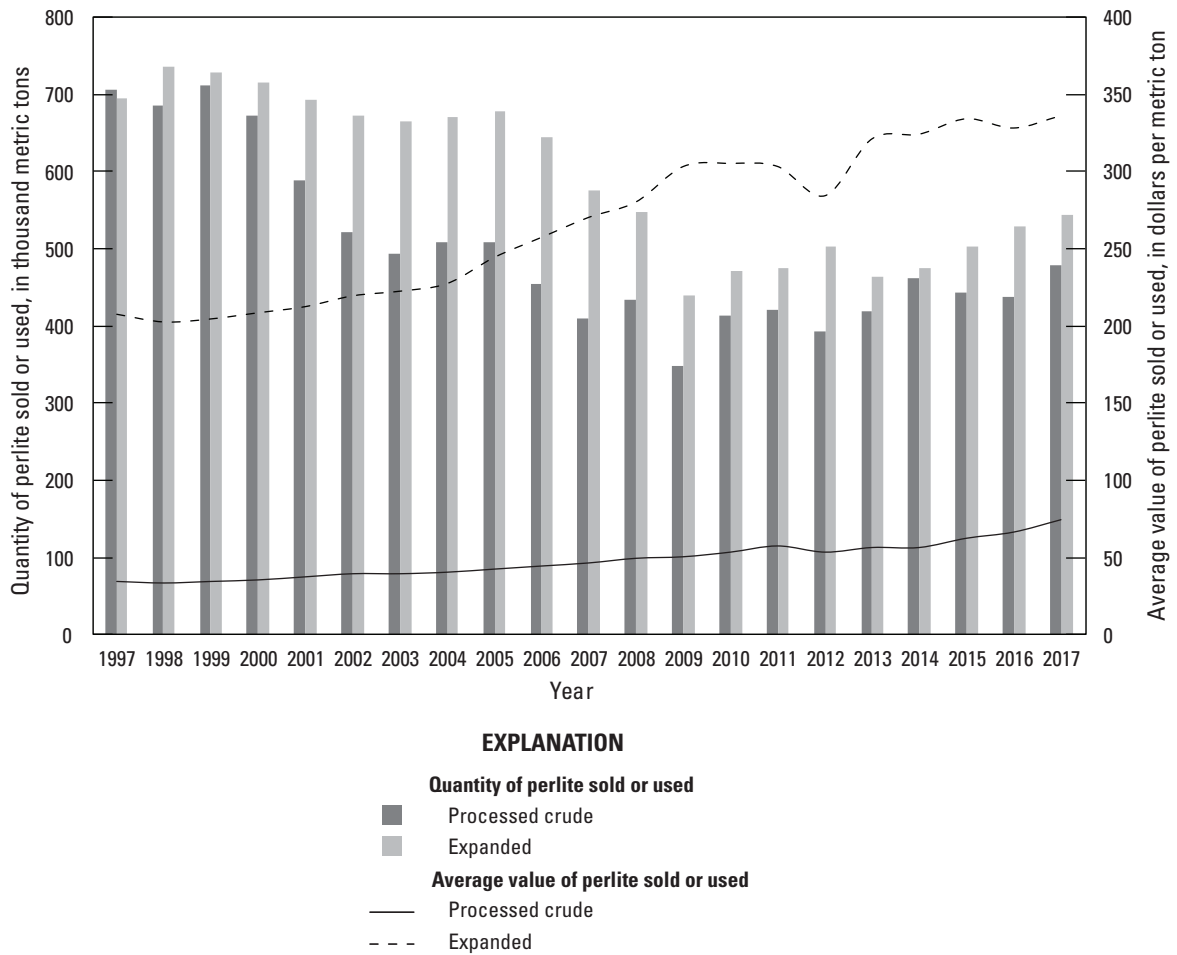


Figure 1. Quantity and average value of processed crude perlite sold or used and expanded perlite sold or used in the United States from 1997 through 2017.

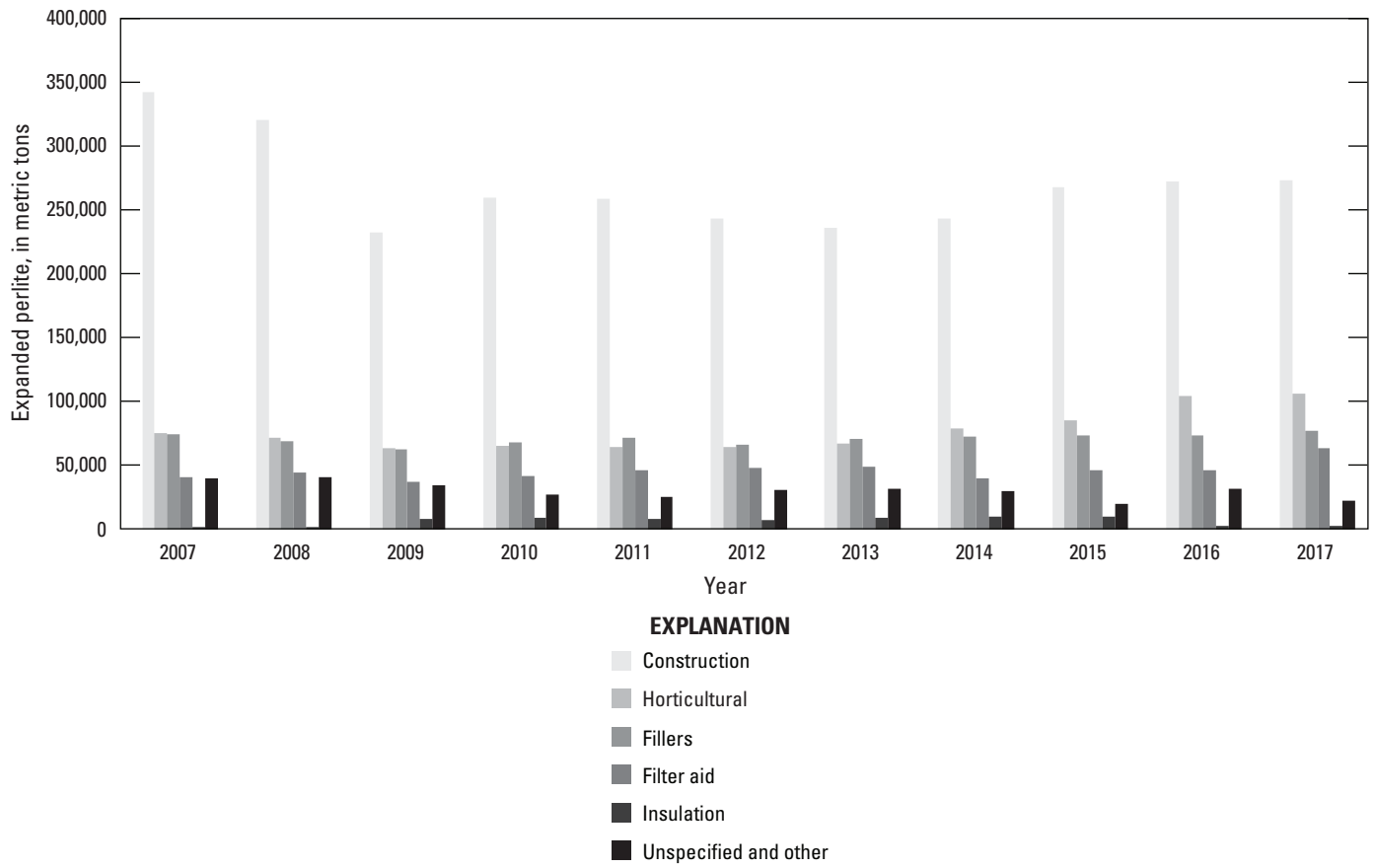


Figure 2. Estimated use of expanded perlite from 2007 through 2017.