

**SAND AND GRAVEL (CONSTRUCTION)<sup>1</sup>**(Data in million metric tons unless otherwise noted)<sup>2</sup>

**Domestic Production and Use:** Construction sand and gravel valued at \$8.9 billion was produced by an estimated 4,100 companies and government agencies from about 6,300 operations in 50 States. Leading producing States were, in order of decreasing tonnage, Texas, California, Michigan, Minnesota, Utah, Washington, New York, Arizona, Ohio, and Colorado, which together accounted for about 55% of total output. It is estimated that about 44% of construction sand and gravel was used as concrete aggregates; 25% for road base and coverings and road stabilization; 13% as asphaltic concrete aggregates and other bituminous mixtures; 12% as construction fill; 1% each for concrete products, such as blocks, bricks, and pipes; plaster and gunite sands; and snow and ice control; and the remaining 3% for filtration, golf courses, railroad ballast, roofing granules, and other miscellaneous uses.

The estimated output of construction sand and gravel in the United States, 443 million tons shipped for consumption in the first 6 months of 2016, was 8% higher than the 410 million tons estimated for the same period in 2015. Additional production information by quarter for each State, geographic region, and the United States is reported in the U.S. Geological Survey quarterly Mineral Industry Surveys for Crushed Stone and Sand and Gravel.

<b>Salient Statistics—United States:</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016<sup>e</sup></b>
Production	812	847	897	937	1,010
Imports for consumption	4	4	4	4	3
Exports	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Consumption, apparent	815	851	901	941	1,010
Price, average value, dollars per metric ton	7.65	7.89	8.09	8.58	8.80
Employment, mine and mill, number <sup>4</sup>	37,100	36,400	34,600	34,700	34,700
Net import reliance <sup>5</sup> as a percentage of apparent consumption	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )

**Import Sources (2012–15):** Canada, 90%; Mexico, 5%; and other, 5%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–16</b>
Sand, silica and quartz, less than 95% silica	2505.10.5000	Free.
Sand, other	2505.90.0000	Free.
Pebbles and gravel	2517.10.0015	Free.

**Depletion Allowance:** Common varieties, 5% (Domestic and foreign).

**Government Stockpile:** None.

## SAND AND GRAVEL (CONSTRUCTION)

**Events, Trends, and Issues:** Construction sand and gravel production was about 1.01 billion tons in 2016, an increase of 7% compared with that of 2015. Apparent consumption also increased to about 1.01 billion tons. Consumption of construction sand and gravel was higher in 2016 because of increased consumption during every quarter since the second quarter of 2013, with an average increase of 6% over the same period of the previous year. With significantly stronger construction activity across the country in 2016, and recovery in the private sector and residential construction experiencing a level of growth not seen since late 2005, consumption of construction aggregates is likely to continue to increase. It is expected that the increased consumption in 2016 from that in 2015 will reach or exceed the historical annual average of the past 50 years, which was a 2% to 4% increase per year.

The construction sand and gravel industry remained concerned with environmental, health, permitting, safety, and zoning regulations. Movement of sand and gravel operations away from densely populated regions was expected to continue where regulations and local sentiment discouraged them. Resultant regional shortages of construction sand and gravel would likely result in higher-than-average price increases in industrialized and urban areas.

### World Mine Production and Reserves:

	Mine production <sup>e</sup>		Reserves <sup>6</sup>
	2015	2016	
United States	937	1,010	Reserves are controlled largely by land use and (or) environmental concerns.
Other countries <sup>7</sup>	NA	NA	
World total	NA	NA	

**World Resources:** Sand and gravel resources of the world are plentiful. However, because of environmental restrictions, geographic distribution, and quality requirements for some uses, sand and gravel extraction is uneconomic in some cases. The most important commercial sources of sand and gravel have been glacial deposits, river channels, and river flood plains. Use of offshore deposits in the United States is mostly restricted to beach erosion control and replenishment. Other countries routinely mine offshore deposits of aggregates for onshore construction projects.

**Substitutes:** Crushed stone, the other major construction aggregate, is often substituted for natural sand and gravel, especially in more densely populated areas of the Eastern United States. Crushed stone remains the dominant choice for construction aggregate use. Increasingly, recycled asphalt and portland cement concretes are being substituted for virgin aggregate, although the percentage of total aggregate supplied by recycled materials remained very small in 2016.

<sup>e</sup>Estimated. NA Not available.

<sup>1</sup>See also Sand and Gravel (Industrial) and Stone (Crushed).

<sup>2</sup>See [Appendix A](#) for conversion to short tons.

<sup>3</sup>Less than ½ unit.

<sup>4</sup>Including office staff. Source: Mine Safety and Health Administration.

<sup>5</sup>Defined as imports – exports.

<sup>6</sup>See [Appendix C](#) for resource and reserve definitions and information concerning data sources.

<sup>7</sup>No reliable production information is available for most countries owing to the wide variety of ways in which countries report their sand and gravel production. Some countries do not report production for this mineral commodity. Production information for some countries is available in the country chapters of the USGS Minerals Yearbook.