

## 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 \$6.2 billion was produced by an estimated 4,000 companies from about 6,400 operations in 50 States. Leading producing States, in order of decreasing tonnage, were Texas, California, Arizona, Colorado, Wisconsin, Michigan, Minnesota, New York, Nevada, and Ohio, which together accounted for about 50% of the total output. It is estimated that about 44% of construction sand and gravel was used as concrete aggregates; 23% for road base and coverings and road stabilization; 14% as construction fill; 12% as asphaltic concrete aggregates and other bituminous mixtures; 3% for plaster and gunite sands; 1% for concrete products, such as blocks, bricks, and pipes; and the remaining 3% for filtration, golf courses, railroad ballast, roofing granules, snow and ice control, and other miscellaneous uses.

The estimated output of construction sand and gravel in the 48 conterminous States, shipped for consumption in the first 6 months of 2009, was about 344 million tons, a decrease of 29% compared with the revised total for the same period in 2008. Additional production information by quarter for each State, geographic region, and the United States is published by the U.S. Geological Survey (USGS) in its quarterly Mineral Industry Surveys for Crushed Stone and Sand and Gravel.

<b>Salient Statistics—United States:</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009<sup>e</sup></b>
Production	1,280	1,320	1,230	1,040	800
Imports for consumption	7	5	4	3	3
Exports	1	1	(3)	1	1
Consumption, apparent	1,290	1,320	1,240	1,050	802
Price, average value, dollars per ton	5.86	6.47	7.01	7.48	7.70
Employment, mines, mills, and shops, number	37,700	38,500	38,000	35,200	30,400
Net import reliance <sup>4</sup> as a percentage of apparent consumption	(3)	1	(3)	(3)	(3)

**Recycling:** Asphalt road surface layers, cement concrete surface layers, and concrete structures were recycled on an increasing basis.

**Import Sources (2005-08):** Canada, 75%; Mexico, 19%; The Bahamas, 4%; and other, 2%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-09</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:** As the U.S. economy continued to falter, construction sand and gravel output dropped for the third straight year, down by about 25%, or nearly 240 million tons, compared with that of 2008. Demand for construction aggregate fell because total U.S. construction again saw a double-digit percentage decline compared with construction in 2008. It is estimated that 2010 domestic production will be about equal to the 2009 levels of 800 million tons as housing construction and home prices begin to recover from the historically low levels of 2009, but will have difficulty growing as revenues to governments are affected by lower home values. Decreased revenues could curtail publicly funded construction projects, which in turn would lower demand for construction sand and gravel.

Crushed stone, the other major construction aggregate, continues to replace natural sand and gravel, especially in more densely populated areas of the Eastern United States. The construction sand and gravel industry continues to be concerned with environmental, health, permitting, safety, and zoning regulations. Movement of sand and gravel operations away from densely populated centers is expected to continue where environmental, land development, and local zoning regulations discourage them. Consequently, shortages of construction sand and gravel would support higher-than-average price increases in industrialized and urban areas.

### World Mine Production and Reserves:

	Mine production		Reserves <sup>5</sup>
	2008	2009 <sup>e</sup>	
United States	1,040	800	The reserves are controlled largely by land use and/or environmental concerns.
Other countries <sup>6</sup>	NA	NA	
World total	NA	NA	

**World Resources:** Sand and gravel resources of the world are large. 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 remains the predominant 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 2009.

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

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

<sup>2</sup>See Appendix A for conversion to short tons.

<sup>3</sup>Less than ½ unit.

<sup>4</sup>Defined as imports – exports.

<sup>5</sup>See Appendix C for definitions. Reserve base estimates were discontinued in 2009; see [Introduction](#).

<sup>6</sup>No reliable production information for most countries is available 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.