CEMENT

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: In 2019, U.S. portland cement production increased by 2.5% to 86 million tons, and masonry cement production continued to remain steady at 2.4 million tons. Cement was produced at 96 plants in 34 States, and at 2 plants in Puerto Rico. U.S. cement production continued to be limited by closed or idle plants, underutilized capacity at others, production disruptions from plant upgrades, and relatively inexpensive imports. In 2019, sales of cement increased slightly and were valued at $12.5 billion. Most cement sales were to make concrete, worth at least $65 billion. In 2019, it was estimated that 70% to 75% of sales were to ready-mixed concrete producers, 10% to concrete product manufactures, 8% to 10% to contractors, and 5% to 12% to other customer types. Texas, California, Missouri, Florida, Alabama, Michigan, and Pennsylvania were, in descending order of production, the seven leading cement-producing States and accounted for nearly 60% of U.S. production.

Salient Statistics—United States:[1]	2015	2016	2017	2018	2019[e]
Production:					
Portland and masonry cement[2]	84,405	84,695	86,356	86,368	88,500
Clinker	76,043	75,633	76,678	77,112	78,000
Shipments to final customers, includes exports	93,543	95,397	97,935	99,406	100,000
Imports of hydraulic cement for consumption	10,376	11,742	12,288	13,764	15,000
Imports of clinker for consumption	879	1,496	1,209	967	1,100
Exports of hydraulic cement and clinker	1,543	1,097	1,035	940	1,000
Consumption, apparent[3]	92,150	95,150	97,160	98,480	102,000
Price, average mill value, dollars per ton	106.50	111.00	117.00	121.00	123.50
Stocks, cement, yearend	7,230	7,420	7,870	8,580	8,850
Employment, mine and mill, number[e]	12,300	12,700	12,500	12,300	12,500
Net import reliance[4] as a percentage of apparent consumption	11	13	13	14	15

Recycling: Cement is not recycled, but significant quantities of concrete are recycled for use as a construction aggregate. Cement kilns can use waste fuels, recycled cement kiln dust, and recycled raw materials such as slags and fly ash. Various secondary materials can be incorporated as supplementary cementitious materials (SCMs) in blended cements and in the cement paste in concrete.

Import Sources (2015–18):[5] Canada, 35%; Greece, 16%; China, 14%; Turkey, 11%; and other, 24%.

Tariff: Item	Number	Normal Trade Relations 12–31–19
Cement clinker	2523.10.0000	Free.
White portland cement	2523.21.0000	Free.
Other portland cement	2523.29.0000	Free.
Aluminous cement	2523.30.0000	Free.
Other hydraulic cement	2523.90.0000	Free.

Depletion Allowance: Not applicable. Certain raw materials for cement production have depletion allowances.

Government Stockpile: None.

Prepared by **Kenneth C. Curry [(703) 648–7793, kcurry@usgs.gov]**

CEMENT

Events, Trends, and Issues: Construction spending decreased in 2019, owing to a decline in private residential and nonresidential spending. Cement shipments into North Carolina and South Carolina increased owing to reconstruction following a hurricane in 2018. The leading cement-consuming States were Texas, California, and Florida, in descending order by tonnage.

No new company mergers were reported in 2019, but one European cement company entered into an agreement to purchase a Mexican cement company's plant in Pennsylvania, pending regulatory approval.

No major cement plant upgrades were completed during the year, but several minor upgrades were ongoing at a few domestic plants. One cement company began work on an upgrade to one of its plants in Indiana, with completion expected in 2022. Another company continued to work on securing permits for a new white cement plant in Texas, which would be the third white cement plant in the country. Many plants have installed emissions-reduction equipment to comply with the 2010 National Emissions Standards for Hazardous Air Pollutants (NESHAP). It remains possible that some kilns could be shut, idled, or used in a reduced capacity to comply with NESHAP, which would constrain U.S. clinker capacity.

World Production and Capacity:

	Cement production[e]		Clinker capacity[e]	
	2018	2019	2018	2019
United States (includes Puerto Rico)	87,000	89,000	103,000	103,000
Brazil	53,000	55,000	60,000	60,000
China	2,200,000	2,200,000	2,000,000	1,970,000
Egypt	81,200	76,000	48,000	48,000
India	300,000	320,000	280,000	280,000
Indonesia	75,200	74,000	78,000	78,000
Iran	58,000	60,000	80,000	81,000
Japan	55,300	54,000	53,000	53,000
Korea, Republic of	57,500	55,000	50,000	50,000
Russia	53,700	57,000	80,000	80,000
Turkey	72,500	51,000	90,000	92,000
Vietnam	90,200	95,000	90,000	90,000
Other countries (rounded)	870,000	900,000	720,000	720,000
World total (rounded)	4,050,000	4,100,000	3,700,000	3,700,000

World Resources: Although reserves at individual plants are subject to exhaustion, limestone and other cement raw materials are geologically widespread and abundant, and overall shortages are unlikely in the future.

Substitutes: Most portland cement is used to make concrete, mortars, or stuccos, and competes in the construction sector with concrete substitutes, such as aluminum, asphalt, clay brick, fiberglass, glass, gypsum (plaster), steel, stone, and wood. Certain materials, especially fly ash and ground granulated blast furnace slag, develop good hydraulic cementitious properties by reacting with lime, such as that released by the hydration of portland cement. Where readily available (including as imports), these SCMs are increasingly being used as partial substitutes for portland cement in many concrete applications and are components of finished blended cements.

[e]Estimated.

[1]Portland plus masonry cement unless otherwise noted; excludes Puerto Rico unless otherwise noted.

[2]Includes cement made from imported clinker.

[3]Defined as production of cement (including from imported clinker) + imports (excluding clinker) - exports + adjustments for stock changes.

[4]Defined as imports (cement and clinker) – exports.

[5]Hydraulic cement and clinker; includes imports into Puerto Rico.