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# 2018 Minerals Yearbook

## CEMENT [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

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# Cement

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**Domestic survey tables were prepared by Christine K. Pisut, statistical assistant.**

In 2018, production of portland and masonry cement in the United States, excluding Puerto Rico, was 86.4 million metric tons (Mt), essentially unchanged from that in 2017 (table 1). Production in 2018 was 13% lower than the record-high 99.3 Mt in 2005. Overall cement consumption, as measured by sales to domestic final customers, increased by 2% to 98.7 Mt from that in 2017 (table 9), 23% lower than the 2005 record-high consumption of 127.9 Mt. The average mill net value ("price") for cement increased by 3.4% to a record-high $121.00 per metric ton, surpassing the previous record set in 2017 (table 13). The overall value of sales increased by 5.3% to $11.9 billion (tables 11, 12), 7.3% lower than the record of $12.8 billion set in 2006. World production of cement decreased slightly to 4.05 billion metric tons (Gt) (tables 1, 22).

Except where otherwise indicated, data and trends in this report exclude those in Puerto Rico. This report covers hydraulic varieties of cement broadly classified as portland cement (including blended cements and other varieties listed in table 15) and masonry cement (including portland-lime and plastic cements). Other types of hydraulic cement and clinker are included in some of the trade data (tables 16–18, 21) and within the world production data (table 22). The tables in this report exclude supplementary cementious materials (SCMs), such as fly ash, other pozzolans, and ground granulated blast furnace slag (GGBFS), except when incorporated in finished cement and clinker. General background information on cement manufacturing and the U.S. Geological Survey (USGS) cement canvasses can be found in van Oss (2005).

### Government Programs and Environmental Issues

Much of the cement consumption, within concrete, was for public-sector construction projects. Cement quantities sold for these projects were dependent on various Government-funding sources, especially for new construction rather than repairs. State and Federal funding for public-sector construction was essentially unchanged in 2018 from that in 2017 (Portland Cement Association, 2019). Public Law 114–94, "Fixing America's Surface Transportation Act" (FAST), authorized $41.4 billion in Federal Highway Program apportionments in fiscal year 2018 (Federal Highway Administration, 2018).

Large quantities of raw materials (mainly carbonate rocks, especially limestone) and fuels are burned at high temperatures to make clinker, resulting in emissions of large quantities of carbon dioxide ($CO_2$) and potentially significant emissions of nitrogen oxides, sulfur oxides, mercury and other metals, volatile organic carbon compounds, and particulates. These emissions are increasingly more strictly regulated. The cement industry is one of the leading industrial emitters of $CO_2$, a greenhouse gas (GHG).

For 2018, overall $CO_2$ emissions by the U.S. cement industry were calculated to be about 66.0 Mt, or 0.86 metric tons (t) of $CO_2$ per ton of clinker produced, slightly lower than those in 2017. Overall emissions were calculated from an average of two methods for estimating emissions from fuel combustion at individual plants. One method uses "standard heat" values of fuel quantities consumed (table 7), which calculated $CO_2$ emissions of 68.0 Mt from the U.S. cement industry. The other method totals heat values reported by individual plants, which calculated $CO_2$ emissions of 65.0 Mt. The emission factor(s) from the Intergovernmental Panel on Climate Change (IPCC) is used to calculate process emissions from the calcination of limestone (Hanle and others, 2006). The calculations do not take into account any deductions from calcination for including materials such as ferrous slags and coal combustion ashes. Including these deductions could reduce the calculated calcination-related emissions.

Certain fuels, including alternative or waste fuels, can reduce plant-level $CO_2$ emissions and may be allowed to be deducted from some other reporting protocols for combustion emissions. These fuels are lower in carbon per unit heat produced than other fuels (considered carbon neutral, such as certain biofuels) or may have credits allowed for their use (certain waste fuels). No fuel deductions were made to the average of 66.0 Mt, discussed above. Plant-level emissions from combustion can be reduced through use of alternative raw materials and fuels, upgrading to more fuel-efficient kiln line technology, and use of SCMs and crushed limestone or other fillers in finished cement and concrete to reduce its clinker content.

The U.S. Environmental Protection Agency (EPA) applied emissions factors, similar to those described above, to clinker production data published by the USGS to calculate GHG emissions associated with the U.S. cement industry. The USGS and EPA calculations, based on the IPCC methodology, have an estimated 5% uncertainty. The EPA compared its calculations to the results of mandatory GHG reporting by major emitter industries. These data began for the 2010 (emissions) data year and are available through 2018 as summary spreadsheets for each year (U.S. Environmental Protection Agency, 2019); these data are in close agreement with the USGS estimate noted above.

As part of the Clean Air Act, the EPA developed the national emission standards for hazardous air pollutants (NESHAP). The NESHAP regulations were finalized in 2013 and amended in July 2015 (U.S. Environmental Protection Agency, 2015). The NESHAP regulations established new limits for stationary sources on emissions of mercury, total hydrocarbons, particulate matter (as a surrogate for nonvolatile metal pollutants), and hydrochloric acid. NESHAP does not apply to plants that burn hazardous wastes, which fall under different performance standards and emissions limits.

## Production

In 2018, portland cement production was 84.0 Mt, essentially unchanged from 2017 (table 3) and 11% lower than the 93.9 Mt produced in the record year of 2005. Production of masonry cement was 2.39 Mt, essentially unchanged from 2017 (table 4) and 56% lower than the 5.4 Mt produced in the record year of 2005. The USGS obtained the 2018 data in this report through the USGS annual canvass of 139 U.S. industrial cement and clinker production facilities and certain independent terminals. Responses were received from 134 facilities, a response rate of 96%. Estimates were made for nonrespondents based on monthly data or past annual reporting. The data compiled from the surveys did not include a few importers that did not participate in the canvasses, accounting for an estimated additional 0.5% of portland cement sales.

Reported annual cement production capacity (grinding capacity) was 119 Mt, unchanged from 2017 (table 3). Grinding capacity utilization was 70.4%, essentially unchanged from 2017 and 14% lower than the 82% in the record production year of 2005. A grinding capacity utilization of 85% or higher is considered to represent the industry operating at full capacity. Grinding capacity data include portland and masonry cements. The grinding capacity utilization percentages found in table 3 are calculated from only portland-cement production. Capacity changes can reflect changes in demand for cements of various degrees of fineness, grinding equipment upgrades, shifts of some grinding capacity to other products (such as GGBFS), new plants and plant upgrades, and plant closures.

In 2018, the 10 leading cement companies were, in descending order of portland cement production, LafargeHolcim Ltd; CEMEX, Inc.; Lehigh Hanson, Inc.; CRH Americas, Inc.; Buzzi Unicem USA, Inc. (including Alamo Cement Co.); Argos USA Corp.; Eagle Materials Inc.; CalPortland Co.; Martin Marietta Materials, Inc.; and GCC of America, Inc. The U.S. cement industry continued to be heavily consolidated, with 61% of U.S. portland-cement production from the top 5 companies and 81% from the top 10. Of the 10 leading companies, Eagle Materials and Martin Marietta were the only U.S.-owned companies at yearend. Overall, about 89% of U.S. cement capacity was foreign owned in 2018.

In 2018, clinker production was 77.1 Mt, essentially unchanged from 2017 (tables 1, 5) and 13% below the record production of 88.6 Mt in 2006. Most district-level changes in production were only 0.4 Mt or less except for the Texas, northern district, which increased by 0.5 Mt. A plant's apparent annual clinker capacity is dependent upon total reported downtime of the plant's kiln(s).

Clinker production capacity utilization increased to 76% in 2018 (table 5) from 74% in 2017 and was still well below the 86% in 2005. The reported subset for average days of routine maintenance increased by 15% to 31 days in 2018. Some multikiln plants continued to rely on a single (generally the newest and most energy efficient) kiln for most of their clinker production. The continued idle or semi-idle status of a plant's older kilns may reflect barriers to their restart including unknown operational idiosyncrasies, poor kiln conditions, and the possibility of exceeding NESHAP limits. Thus, the active kiln count and plant capacities may be lower than those listed in table 5, although actual capacity utilization percentages may be higher. In some districts, kiln-capacity utilization may have been constrained by increased reliance on cement imports in the local markets.

The U.S. cement industry's consumption of nonfuel raw materials increased in 2018 compared with that in 2017 for the production of clinker, to 129 Mt from 128 Mt, and cement, to 10.6 Mt from 9.38 Mt (table 6). A variety of raw materials can be substituted to make clinker at cement plants. For the major raw materials consumed, changes tend to parallel clinker production, whereas some minor raw materials may experience significant changes in the activity of just a few plants.

Table 6 lists the nonfuel raw materials used to produce cement and clinker in the United States. In 2018, the use of limestone for clinker production was unchanged at 101 Mt, which aligned with unchanging clinker production from 2017 to 2018. The use of limestone for cement production decreased by 6.8% to 2.86 Mt, which did not align with the essentially unchanged cement production. Therefore, higher quantities of material other than limestone were used to make cement. Use of cement kiln dust increased as a raw material for clinker and cement production. Use of GGBFS as a raw material in the production of cement increased by 11%; however, sales of GGBFS-blended cement decreased by 15%. This decrease in sales may reflect a mischaracterization of sales or incomplete reporting. Fly ash consumed for clinker decreased by 24% to 1.83 Mt and for cement increased by 13% to 184,000 t. These trends aligned with the decrease in sales of blended cement containing fly ash (table 15).

Based on data collected through the USGS survey, total fly ash consumption for blended cement and clinker of 2.01 Mt was less than the 3.1 Mt reported by the American Coal Ash Association (ACAA), whereas the total bottom ash consumption of 1.73 Mt (table 6) was more than the 1.2 Mt reported by the ACAA. The differences may reflect misidentification of various types of ashes and slag by USGS canvass respondents but also could reflect the difference between tonnages sold for a specific purpose (ACAA) and tonnages actually consumed by the cement plants (table 6). The total synthetic gypsum consumption reported to the USGS, but not specifically listed in table 6, of 2.0 Mt was slightly higher than the sales of 1.9 Mt to the cement industry reported by the ACAA (American Coal Ash Association, 2019).

Table 7 details fuel consumption by the U.S. cement industry. As with nonfuel raw materials, data shifts can reflect activities at just a few plants. Only consumption of natural gas and liquid waste fuels increased in 2018 and consumption of all other fuel types decreased.

In 2018, total unit heat consumption (gross heat basis) was 4.0 billion joules per metric ton (GJ/t) of clinker, essentially unchanged from 2017. Wet kiln plants averaged 7.5 GJ/t of clinker, compared with 7.6 GJ/t of clinker in 2017. Dry kiln plants, responsible for 98% of clinker production in 2018, averaged 4.0 GJ/t of clinker, compared with 3.9 GJ/t of clinker in 2017. In 2018, the leading fuel sources for total heat consumed were bituminous coal, 44%; natural gas and petroleum coke, 20% each; waste fuels, 15%; and fuel oil (not including any reported with liquid wastes), less than 1%.

Electricity consumed by U.S. cement plants in 2018 is shown in table 8. Average consumption, compared with that in 2017, decreased slightly for the remaining operational wet plants but increased for dry plants.

**Industry Structure Changes**

In recent years, a number of mergers and acquisitions took place in the North American cement industry. In February, HeidelbergCement, AG. (Germany) announced its subsidiary Lehigh Hanson, Inc.'s intent to sell its 51% stake in the Lehigh White Cement Co. (HeidelbergCement, AG., 2018). In April, Cemintir Holding, SpA. (Netherlands) announced that it had acquired an additional 38.75% stake in Lehigh White from Lehigh Hanson. This gave Cemintir a 63.25% operating stake in Lehigh White and direct management of the asset. The remaining shares in Lehigh White were owned by Cemex, Inc. (Mexico) (Cementir Holding SpA., 2018). In June, CRH plc. (Ireland) announced that it had completed the purchase of Ash Grove Cement Co. To complete the purchase, CRH sold its Trident, MT, plant to Groupo Cementos de Chihuahua (GCC) (Mexico) (CRH plc., 2018; Grupo Cementos de Chihuahua, S.A.B. de C.V., 2018a).

A number of plant upgrades were underway or completed during the year. The St. Marys Cement plant expansion in Charlevoix, MI, was completed in June 2018 (S. Wang, Accounting Manager, St. Marys Cement, oral commun., August 9, 2019). In July, Lehigh Hanson announced an expansion and modernization at its Mitchell, IN, plant, with completion expected by 2022 (Lehigh Hanson, Inc., 2018). In December, GCC announced the completion of an expansion at its plant in Rapid City, SD (Grupo Cementos de Chihuahua, S.A.B. de C.V., 2018b). Several other minor upgrades were ongoing across the country.

**Consumption**

Cement consumption data were reported in terms of sales (shipments) to final domestic customers. The data were derived from the USGS annual canvass (tables 1, 11, 12, 14), which pertained to sales by location of the reporting entities and monthly surveys (table 9, which is the only table to represent State-level sales). Sales in both datasets included domestically produced cement, from domestic and imported clinker, and imported cement.

In 2018, portland cement sales, based on monthly survey data, increased by 2.1% to 96.3 Mt; masonry cement sales were unchanged at 2.41 Mt (table 9). Cement consumption can be correlated generally with construction spending levels. However, some factors constrain such a comparison, including cement usage for repairs rather than new construction, lags in construction timeframe affecting when cement is consumed, and the type of construction.

The Portland Cement Association converts U.S. Census Bureau data on construction spending from current dollars to 2009 constant dollars. In these terms, 2018 construction spending was essentially unchanged at $1,036.6 billion. The total cement "intensity" in 2018 increased slightly to 95.2 t of cement consumed per $1 million of construction spending. The largest sector of total construction spending was residential construction, which was essentially unchanged at $413.4 billion, including new construction, which was essentially unchanged at $262.6 billion. The major components of new construction were single-family housing (masonry cement and brick and block dependent), which was essentially unchanged at $216.6 billion, and multifamily housing (concrete dependent), which decreased by 3.6% to $46 billion. Nonresidential building construction (concrete dependent) decreased slightly to $245.6 billion. Public-sector construction was essentially unchanged at $211.6 billion. Within public-sector construction, buildings were essentially unchanged at $94.7 billion and highways and streets decreased by 2.2% to $73.8 billion. The remaining public-sector categories, combined, increased by 6.9% to $43.1 billion (Portland Cement Association, 2019).

In 2018, the quantity of reported cement sales to ready-mix concrete producers was essentially unchanged at 68.3 Mt and was 71% of total cement sold (table 14). The actual percentage was likely larger because some sales of cement to ready-mix concrete producers were reported in other sales categories, such as airport and road paving contractors, which use ready-mix concrete. The quantity of cement sold to concrete product manufacturers, including those categories broken out in footnote 7 of table 14, increased to 11.1 Mt (3.7%); including sales for precast and prestressed, which increased to 3.82 Mt (5.8%); sales for brick and block, which increased to 3.55 Mt (3.8%); sales for other or unspecified uses, which may include uses in any of the other broken out categories, and which were essentially unchanged at 2.65 Mt; and sales for pipe, which increased to 1.10 Mt (4.8%).

Cement sold to contractors, including those categories listed in footnote 8 of table 14, increased to 8.40 Mt (13%); including sales for road paving, which decreased to 3.45 Mt (2%); sales for other or unspecified uses, increased to 2.55 Mt (83%); sales for soil cement decreased to 2.28 Mt (7.3%); and sales for airport uses increased to 124,000 t (46%). Sales for building materials dealers increased to 3.68 Mt (9.5%). Sales for oil well, mining, and waste stabilization, broken out in footnote 9 of table 14, increased to 2.84 Mt (9.7%); including sales for oil well drilling, which increased to 2.36 Mt (13%); sales for mining increased to 326,000 t (2.2%); and sales for waste stabilization decreased to 157,000 t (14%). The increase in portland cement sales for oil well drilling was generally aligned with the 17% increase in the average weekly drill count during 2018 (Baker Hughes Inc., 2019).

Portland cement sales by type of cement are broken out in table 15. In 2018, sales of general use and moderate heat cements (Types I and II) decreased to 70.0 Mt (2.4%). Sulfate-resistant varieties (Type V and Type II/V hybrids reported as Type V), including equivalent cements sold under ASTM International C1157 specifications, increased to 18.3 Mt (22%). High early strength cement (Type III) sales decreased to 2.82 Mt (5.4%); oil well cement (including non-American Petroleum Institute varieties) sales increased to 1.93 Mt (14%); and white cement sales decreased slightly to 867,000 t. Total sales of blended cements decreased to 1.95 Mt (4.4%), including sales of 561,000 t of blended cement with GGBFS, a 15% decrease from

that in 2017, and sales of 248,000 t of blended cement with fly ash, a 62% decrease from that in 2017.

### Stocks

In 2018, yearend stocks of clinker were essentially unchanged at 5.34 Mt (tables 1, 5). Yearend stocks of portland cement, including blended cement, increased by 9.4% to 8.24 Mt (table 3). Yearend stocks of masonry cement increased by 3.9% to 345,000 t (table 4). Ending stocks of clinker and cement are sensitive to market conditions, omission of stocks at terminals, weather-affected yearend sales, and stock buildups ahead of planned kiln shutdowns. Individual respondents sometimes report stocks at a plant that includes terminals across multiple districts and that receive and ship cement from more than one plant, which can affect the regional breakout of stocks.

### Prices

U.S. cement prices (mill net values), broken out by white and gray portland cement, are listed in table 13. Price data by district for total portland and masonry cement are listed in tables 11 and 12, respectively. Mill net values are ex-factory average values for cement sold, including bagging and palletizing charges for cement sold in bags or packages. Most portland cement is sold in bulk and most masonry cement is sold in bags or packages (table 10). Mill net values, except for independently reporting terminals which report on a "terminal net" basis, exclude charges to terminals where much of the cement was sold and are, thus, better viewed as price indexes rather than the purchase price for cement. The value data mainly show general regional variations and trends over time and small unit price differences are of little statistical significance. Unlike sales tonnages, price data include a significant component of estimates in some districts.

The estimated average price for portland cement increased to $119.50 per metric ton (3.5%). Gray portland cement's price increased to $119.00 per metric ton (3.9%), whereas that for white portland cement decreased slightly to $214.00 per metric ton. Masonry cement's average price increased slightly to $164.50 per metric ton (table 13). Because most masonry cement is sold in bagged or packaged form, its average price is sensitive to even small shifts in bulk sales. Unit values for portland cement increased in all but two districts (table 11).

### Foreign Trade

Export data from the U.S. Census Bureau are provided in table 16, and import data are in tables 17–21. Exports have been only a small fraction of the U.S. cement industry's sales but did reach a record high of 1.75 Mt in 2012; exports have since declined as a result of increasing domestic cement demand. In 2018, exports decreased by 9.2% to 940,000 t (table 16), and reported shipments to final customers in foreign countries decreased by 11% to 562,000 t (table 9). Most United States cement exports were to Canada, which received 77% of exports in 2018 (table 16).

Total imports of cement and clinker increased by 9.1% to 14.7 Mt (tables 1, 17) in 2018. The total imports in 2018 remained well below the record high of 35.6 Mt in 2006. Imports in 2018 supplied some of the growth in cement sales noted previously. The leading import sources of cement and clinker in 2018, in decreasing order of tonnage, were Canada, China, Greece, and Turkey. Imports of gray portland cement increased by 12% to 11.7 Mt (table 19) and accounted for 79% of the total imports.

Data for cement imports from Mexico were incomplete for 2017 and 2018, especially total cement entering the El Paso, TX, customs district (table 18), because of sub-$2,500 truckloads that were registered as "informal entries." Most of what is shown for this district in table 18 is white cement. The missing cement was estimated to be about 0.4 Mt in 2018.

White cement imports increased by 9.5% to 1.39 Mt (table 20). White cement imports significantly exceeded the reported white cement sales of 867,000 t in table 15. If the white cement sales that were produced domestically are removed, the imports to sales difference increases further. Thus, the data for white cement imports may include some gray cement or clinker; importers may have used the wrong tariff code. In addition, white cement may have been a significant fraction of the cement imported by importers that do not participate in the USGS survey.

Imports of clinker decreased by 20% to 967,000 t (table 21) in 2018. The decrease was largely the result of lower imports from Turkey and Greece. Imports from Canada were essentially unchanged but were likely underreported, by an estimated 0.3 Mt, because of sub-$2,500 truckloads that, were registered as "informal entries." Clinker imports from France were 116,000 t, an increase of 61% in 2018, and in the past have been used to manufacture aluminous cement.

For cement and clinker combined, the 10 leading custom districts for imports in 2018, in descending order of tonnage, were Houston-Galveston, TX; Detroit, MI; Seattle, WA; San Francisco, CA; New York, NY; Cleveland, OH; Columbia-Snake, OR and WA; Tampa, FL; Miami, FL; and Philadelphia, PA (table 18) and accounted for 73% of total imports.

### World Review

Production of hydraulic cement, by country, is listed in table 22. For most countries, the data include all forms of hydraulic cement and some data may be based on reported exports of clinker. Some country data may be incomplete. For the United States, data are for portland and masonry cement only.

World production of hydraulic cement in 2018 decreased slightly to 4.05 Gt from the revised 4.11 Gt in 2017. Cement was produced in 160 countries, but production was very unevenly distributed. China's production, which was 54% of the world total in 2018, decreased by an estimated 131 Mt to 2.20 Gt but still accounted for more than seven times the production of India, which had the second highest world production. The remaining top 15 producers in 2018, in descending order, were Vietnam, the United States, Egypt, Indonesia, Turkey, Iran, the Republic of Korea, Japan, Russia, Brazil, Mexico, Saudi Arabia, and Pakistan, producing 28% of the world cement total in 2018.

In terms of regional production in 2018, Asia and the Pacific accounted for about 74% of the world total; the region included 7 of the 15 leading producing countries. The Asia and the Pacific region was followed by Africa, at 5.9%; Western Europe (including Turkey), 5.2%; the Middle East, 4.3%; North

America (including Mexico), 3.7%; Central America and South America (including the Caribbean), 3.3%; the Commonwealth of Independent States, 2.6%; and Eastern Europe, 1.2%.

### Outlook

Continued uncertainties in public-sector and housing construction are expected to constrain growth in cement sales in 2019 to less than 3%. Production of cement is expected to increase slightly in 2019, depending on increased levels of public-sector construction spending. Some plants are expected to continue to idle kilns, largely for environmental reasons. Because domestic production capacity is expected to be inadequate to meet the overall demand for cement, imports of cement are expected to continue to increase by 8% (Curry, 2020).

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## GENERAL SOURCES OF INFORMATION

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  Monitor, The, monthly.
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Rock Products, monthly.
Slag Cement Association, annual survey.
U.S. Census Bureau.
World Cement, monthly.

TABLE 1
SALIENT CEMENT STATISTICS[1, 2]

(Thousand metric tons unless otherwise specified)

| | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| United States: | | | | | | |
| Production: | | | | | | |
| Cement[3] | | 82,535 | 84,405 | 84,695 | 86,356 | 86,400 |
| Clinker | | 74,372 | 76,043 | 75,633 | 76,678 | 77,112 |
| Shipments from mills and terminals:[3, 4] | | | | | | |
| Quantity | | 88,900 | 92,000 | 94,300 | 96,900 | 98,500 |
| Value[5] | thousand dollars | 8,940,000 | 9,800,000 | 10,500,000 | 11,300,000 | 11,900,000 |
| Average value[5] | dollars per metric ton | 100.50 | 106.50 | 111.00 | 117.00 | 121.00 |
| Stocks, yearend: | | | | | | |
| Cement | | 6,140 | 7,230 | 7,420 | 7,870 | 8,580 |
| Clinker | | 4,530 | 4,840 | 5,430 | 5,330 | 5,340 |
| Exports | | 1,397 | 1,543 | 1,097 | 1,035 | 940 |
| Imports:[6] | | | | | | |
| Cement | | 7,584 | 10,376 [7] | 11,742 | 12,288 [7] | 13,764 |
| Clinker | | 720 | 879 [8] | 1,496 [8] | 1,209 | 967 |
| Total[9] | | 8,303 | 11,254 [7, 8] | 13,237 [8] | 13,497 [7] | 14,731 |
| Consumption, apparent[10] | | 89,220 | 92,150 | 95,150 | 97,160 | 98,480 |
| World, production[e, 11] | | 4,150,000 | 4,070,000 | 4,150,000 | 4,110,000 [r] | 4,050,000 |

[e]Estimated. [r]Revised.
[1]Table includes data available through April 6, 2020. Unless otherwise indicated, data are for portland (including blended) and masonry cements only. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.
[2]Excludes Puerto Rico.
[3]Includes imported cement and cement made from imported clinker. Includes less than 0.5% per year of double-counted portland cement used to produce masonry cement; exact quantity is unknown owing to stockpiles.
[4]Shipments to final domestic customers. Data are from an annual survey of plants and terminals and may differ from the totals in table 9, which are based on consolidated monthly surveys from companies.
[5]Free on board mill or independently reporting terminal.
[6]All forms of hydraulic cement or clinker.
[7]Adjusted by the U.S. Geological Survey to include cement that was misregistered by the importer under the tariff code for another commodity.
[8]Adjusted by the U.S. Geological Survey to exclude granulated blast furnace slag misregistered by the importer under the tariff code for clinker.
[9]May not add to totals shown because of independent rounding.
[10]Production (including that from imported clinker) of cement plus imports of cement minus exports of cement minus the change in yearend cement stocks.
[11]Total hydraulic cement. May include clinker exports for some countries.

TABLE 2
COUNTY BASIS OF SUBDIVISION OF STATES IN CEMENT TABLES

| State subdivision | Defining counties |
|---|---|
| California, northern | Alpine, Fresno, Kings, Madera, Mariposa, Monterey, Tulare, Tuolumne, and all counties farther north. |
| California, southern | Inyo, Kern, Mono, San Luis Obispo, and all counties farther south. |
| Illinois, excluding Chicago | All counties other than those in metropolitan Chicago. |
| Illinois, metropolitan Chicago | Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will. |
| New York, eastern | Delaware, Franklin, Hamilton, Herkimer, Otsego, and all counties farther east and south, except those within metropolitan New York. |
| New York, western | Broome, Chenango, Lewis, Madison, Oneida, St. Lawrence, and all counties farther west. |
| New York, metropolitan | New York City (Bronx, Kings, New York, Queens, and Richmond), Nassau, Rockland, Suffolk, and Westchester. |
| Pennsylvania, eastern | Adams, Cumberland, Juniata, Lycoming, Mifflin, Perry, Tioga, Union, and all counties farther east. |
| Pennsylvania, western | Centre, Clinton, Franklin, Huntingdon, Potter, and all counties farther west. |
| Texas, northern | Angelina, Bell, Concho, Crane, Culberson, El Paso, Falls, Houston, Hudspeth, Irion, Lampasas, Leon, Limestone, McCulloch, Reagan, Reeves, Sabine, San Augustine, San Saba, Tom Green, Trinity, Upton, Ward, and all counties farther north. |
| Texas, southern | Brazos, Burnet, Crockett, Jasper, Jeff Davis, Llano, Madison, Mason, Menard, Milam, Newton, Pecos, Polk, Robertson, San Jacinto, Schleicher, Tyler, Walker, Williamson, and all counties farther south. |

TABLE 3
PORTLAND AND BLENDED CEMENT PRODUCTION, CAPACITY, AND STOCKS IN THE UNITED STATES, BY DISTRICT[1]

(Thousand metric tons unless otherwise specified)

| | 2017 | | | | | 2018 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| District[2] | Number of plants | Production[3] | Grinding capacity[4] | Percentage utilized[5] | Yearend stocks[6] | Number of plants | Production[3] | Grinding capacity[4] | Percentage utilized[5] | Yearend stocks[6] |
| Maine and New York | 4 | 1,846 | 3,258 | 56.7 | 213 | 4 | 1,977 | 3,258 | 60.7 | 226 |
| Pennsylvania | 7 | 3,629 | 5,790 [7] | 62.7 [7] | 264 [7] | 7 | 3,373 | 5,790 [7] | 58.3 [7] | 276 [7] |
| Illinois | 3 | 1,337 | 2,531 | 52.8 | 242 | 3 | 1,057 | 2,531 | 41.7 | 122 |
| Indiana and Ohio | 6 | 3,458 | 4,960 [7] | 69.7 [7] | 302 | 6 | 3,366 | 4,960 [7] | 67.8 [7] | 371 [7] |
| Michigan | 3 | 3,773 | 4,973 | 75.9 | 408 | 3 | 3,620 | 4,973 | 72.8 | 320 |
| Iowa, Nebraska, South Dakota | 4 | 3,552 | 4,340 [7] | 81.8 [7] | 469 | 4 | 3,073 | 4,340 [7] | 70.8 [7] | 485 [7] |
| Kansas | 2 | 2,302 | 3,172 | 72.6 | 175 | 2 | 2,297 | 3,172 | 72.4 | 228 |
| Missouri | 5 | 9,385 | 11,253 | 83.4 | 1,490 | 5 | 9,233 | 11,253 | 82.1 | 1,820 [7] |
| Florida | 8 | 5,942 | 10,067 | 59.0 | 307 | 8 | 6,384 | 10,234 | 62.4 | 493 |
| Georgia, Maryland, Virginia, West Virginia | 6 | 5,904 | 7,738 | 76.3 | 386 | 6 | 5,653 | 7,738 | 73.1 | 307 |
| South Carolina | 3 | 2,972 | 6,100 [7] | 48.7 [7] | 177 [7] | 3 | 2,774 | 6,097 | 45.5 | 192 |
| Alabama, Kentucky, Tennessee | 8 | 6,561 | 10,277 | 63.8 | 602 | 8 | 6,782 | 10,277 | 66.0 | 688 |
| Arkansas and Oklahoma | 4 | 2,368 | 3,760 [7] | 63.0 [7] | 226 [7] | 4 | 2,462 | 3,757 | 65.5 | 223 |
| Texas, northern | 6 | 5,137 | 7,949 | 64.6 | 332 | 6 | 5,393 | 8,001 | 67.4 | 389 |
| Texas, southern | 5 | 6,187 | 7,730 | 80.0 | 417 | 5 | 6,070 [7] | 7,730 [7] | 78.5 [7] | 343 [7] |
| Arizona and New Mexico | 4 | 2,479 | 3,715 | 66.7 | 126 | 4 | 2,894 | 3,720 | 77.8 | 153 |
| Colorado and Wyoming | 4 | 3,130 | 4,138 | 75.6 | 303 | 4 | 3,059 | 4,138 | 73.9 | 285 |
| Montana, Nevada, Utah | 5 | 2,522 | 3,318 | 76.0 | 230 | 5 | 2,581 | 3,318 | 77.8 | 238 |
| Alaska and Hawaii | -- | -- | -- | -- | 70 | -- | -- | -- | -- | 74 |
| California | 8 | 9,957 | 11,454 | 86.9 | 477 [7] | 8 | 10,381 | 11,454 | 90.6 | 600 |
| Oregon and Washington | 4 | 1,523 | 2,472 | 61.6 | 167 | 4 | 1,545 | 2,563 | 60.3 | 203 |
| Importers[8] | -- | -- | -- | -- | 153 [7] | -- | -- | -- | -- | 204 [7] |
| Total[9] | 99 | 83,963 | 119,000 [7] | 70.6 [7] | 7,530 [7] | 99 | 84,000 [7] | 119,000 [7] | 70.4 [7] | 8,240 [7] |
| Puerto Rico | 2 | 443 | 1,780 | 24.9 | 52 [7] | 2 | 630 [7] | 1,780 [7] | 35.4 [7] | 34 [7] |
| Grand total[9] | 101 | 84,406 | 121,000 [7] | 69.8 [7] | 7,590 [7] | 101 | 84,600 [7] | 121,000 [7] | 69.9 [7] | 8,270 [7] |

-- Zero.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits. Includes data for white cement. Includes cement made from imported clinker.

[2]District assignation is the location of the reporting facilities. Specific districts include importers where district assignations were possible.

[3]Data include a small amount of portland cement subsequently consumed at the plant to make masonry cement; the amount thus double-counted cannot be determined precisely because of the involvement of cement stockpiles, but is less than 0.5% of the grand totals listed.

[4]Based on fineness needed to produce a plant's normal output mix, including masonry cement, and allowing for downtime for routine maintenance.

[5]Calculated relative to portland cement output; utilization would be higher if calculated to include output of masonry cement.

[6]Includes imported cement, stocks of domestic and imported cement at mills, terminals assigned to plants (some of which may be outside the district indicated), and cement in transit.

[7]Includes estimates for nonrespondents or facilities that provided incomplete information; data have been rounded to three significant digits.

[8]Includes only those importers or terminals for which district assignations were not possible.

[9]May not add to totals shown because of independent rounding.

TABLE 4
MASONRY CEMENT PRODUCTION AND STOCKS IN THE UNITED STATES, BY DISTRICT[1]

(Thousand metric tons unless otherwise specified)

| | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| District[2] | Number of active plants | Production[3] | Yearend stocks[4] | Number of active plants | Production[3] | Yearend stocks[4] |
| Maine and New York | 4 | 26 | 8 | 4 | 31 | 10 |
| Pennsylvania | 7 | 168 | 37 [5] | 7 | 143 | 29 [5] |
| Indiana and Ohio | 6 | 252 | 33 | 4 | 187 | 26 |
| Michigan | 3 | 74 | 34 | 3 | 74 | 32 |
| Iowa, Nebraska, South Dakota | 1 | W | W | -- | W | W |
| Kansas and Missouri | 3 | W | W | 3 | W | W |
| Florida | 5 | 417 | 28 | 5 | 577 | 38 |
| Georgia, Maryland, Virginia, West Virginia | 5 | 287 | 30 | 5 | 304 | 29 |
| South Carolina | 3 | 174 | 15 [5] | 3 | 186 | 20 |
| Alabama, Kentucky, Tennessee | 7 | 266 | 44 | 6 | 244 | 70 |
| Arkansas and Oklahoma | 4 | 130 | 19 [5] | 4 | 93 | 18 |
| Texas | 6 | 287 | 17 | 6 | 274 [5] | 18 [5] |
| Arizona and New Mexico | 3 | 35 | 4 | 3 | 41 | 5 |
| Colorado, Montana, Nevada, Utah, Wyoming | 2 | W | W | 1 | W | W |
| California | 4 | 229 | 26 | 4 | 207 | 20 |
| Importers[6] | -- | -- | 5 [5] | -- | -- | 3 [5] |
| Total[7] | 63 | 2,392 | 332 [5] | 58 | 2,390 [5] | 345 [5] |
| Puerto Rico | -- | -- | -- | -- | -- | -- |
| Grand total[7] | 63 | 2,392 | 332 [5] | 58 | 2,390 [5] | 345 [5] |

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits. Includes masonry, portland-lime, plastic, and stucco cements.

[2]District assignation is the location of the reporting facilities. Specific districts include importers where district assignations were possible.

[3]Includes cement produced from imported clinker.

[4]Includes imported cement and stocks of domestic and imported cement at mills, and terminals assigned to plants (some of which may be outside the district indicated), and in transit.

[5]Includes estimates for nonrespondents or facilities that provided incomplete information.

[6]Includes only those importers or terminals for which district assignations were not possible.

[7]May not add to totals shown because of independent rounding.

TABLE 5
CLINKER CAPACITY AND PRODUCTION IN THE UNITED STATES IN 2018, BY DISTRICT[1]

| District | Number of active plants[2] | | | | Number of kilns[3] | Daily capacity[3, 4, 5] (thousand metric tons) | Average days of routine maintenance[6] | Apparent annual capacity[3, 7] (thousand metric tons) | Production (thousand metric tons) | Percentage of capacity utilized | Yearend stocks (thousand metric tons) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Process used | | | | | | | | | | |
| | Dry | Wet | Both[4] | Total | | | | | | | |
| Maine and New York | 3 | -- | -- | 3 | 3 | 8.8 | 46.0 | 2,857 | 1,761 | 61.7 | 166 |
| Pennsylvania | 5 | 2 | -- | 7 | 11 | 17.0 [8] | 46.7 [8] | 5,390 [8] | 3,122 | 57.9 [8] | 282 [8] |
| Illinois | 3 | -- | -- | 3 | 5 | 5.8 | 17.4 | 1,918 | 1,006 | 52.5 | 192 |
| Indiana and Ohio | 4 [9] | 2 | -- | 6 | 11 | 13.4 | 29.5 | 4,472 | 3,199 | 71.5 | 256 |
| Michigan | 2 | -- | -- | 2 | 6 | 11.6 | 28.2 | 3,915 | 2,698 | 68.9 | 128 |
| Iowa, Nebraska, South Dakota | 4 | -- | -- | 4 | 5 | 10.3 | 28.4 | 3,479 | 2,763 | 79.4 | 261 |
| Kansas | 2 | -- | -- | 2 | 3 | 7.8 | 44.3 | 2,528 | 2,211 | 87.5 | 99 |
| Missouri | 5 | -- | -- | 5 | 5 | 30.4 [8] | 36.2 [8] | 9,910 [8] | 8,514 | 85.9 [8] | 493 [8] |
| Florida | 7 | -- | -- | 7 | 10 | 22.7 | 24.9 | 7,624 | 6,166 | 80.9 | 239 |
| Georgia, Maryland, Virginia, West Virginia | 5 | -- | -- | 5 | 5 | 20.2 | 30.4 | 6,695 | 5,205 | 77.8 | 273 |
| South Carolina | 3 | -- | -- | 3 | 3 | 11.4 | 34.3 | 3,688 | 2,686 | 72.8 | 40 |
| Alabama, Kentucky, Tennessee | 8 | -- | -- | 8 | 8 | 26.5 | 28.3 | 8,969 | 6,137 | 68.4 | 255 |
| Arkansas and Oklahoma | 4 | -- | -- | 4 | 7 | 10.0 | 20.9 | 3,393 | 2,344 | 69.1 | 181 |
| Texas, northern | 5 [9] | 1 | -- | 6 | 8 | 21.2 | 25.9 | 7,189 | 5,104 | 71.0 | 510 |
| Texas, southern | 5 | -- | -- | 5 | 7 | 20.3 [8] | 24.6 [8] | 6,930 [8] | 5,540 | 79.9 [8] | 555 [8] |
| Arizona and New Mexico | 4 | -- | -- | 4 | 5 | 9.1 | 22.8 | 3,122 | 2,608 | 83.5 | 159 |
| Colorado and Wyoming | 4 | -- | -- | 4 | 5 | 11.9 | 16.6 | 4,140 | 2,732 | 66.0 | 119 |
| Montana, Nevada, Oregon, Utah, Washington | 5 | 2 | -- | 7 | 8 | 13.0 | 27.1 | 4,364 | 3,780 | 86.6 | 492 |
| California | 8 | -- | -- | 8 | 9 | 35.1 | 41.4 | 11,263 | 9,535 | 84.7 | 635 |
| Total[10] | 86 [9] | 7 | -- | 93 | 124 | 307.0 [8] | 30.1 [8] | 102,000 [8] | 77,112 | 75.7 [8] | 5,340 [8] |
| Puerto Rico | 1 | -- | -- | 1 | 1 | W | W | W | W | W | W |
| Grand total[10] | 87 [9] | 7 | -- | 94 | 125 | W | W | W | W | W | W |

W Withheld to avoid disclosing company proprietary data. -- Zero.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.

[2]Includes all plants (gray or white) that produced clinker for at least 1 day during the year, as well as idle facilities able to be restarted, fully permitted, in less than 6 months.

[3]Plants that can operate wet and dry kilns, whether or not both types were active during the year. Includes plants that converted from wet to dry technology during the year.

[4]Includes kilns active for at least 1 day during the year. For kilns idle all year, excludes those that cannot be restarted, fully permitted, in less than 6 months.

[5]Sum of reported kiln capacities for all plants in a district.

[6]Total days of routine maintenance (summed for all kilns) divided by the number of kilns.

[7]Sum of apparent annual capacities for all kilns. For each kiln, the statistic is calculated as 365 days minus days reported for routine maintenance and then multiplied by the unrounded daily capacity.

[8]Contains estimates for some facilities; data have been rounded to no more than three significant digits.

[9]Includes one semiwet kiln in Indiana and one semidry kiln in northern Texas.

[10]May not add to totals shown because of independent rounding.

TABLE 6
RAW MATERIALS USED TO PRODUCE CLINKER AND CEMENT IN THE UNITED STATES[1, 2]

(Thousand metric tons)

| Material | 2017 | | 2018 | |
|---|---|---|---|---|
| | Clinker | Cement[3] | Clinker | Cement[3] |
| Calcareous: | | | | |
| Limestone (aragonite, chalk, coral, marble) | 101,000 | 3,070 | 101,000 | 2,860 |
| Cement rock (includes marl) | 9,260 | 35 | 10,800 | 74 |
| Cement kiln dust[4] | 5 | 259 | 8 | 277 |
| Lime[4] | 228 | 9 | 29 | 5 |
| Other | 55 | 14 | 75 | 9 |
| Aluminous: | | | | |
| Clay | 4,040 | -- | 4,230 | -- |
| Shale and schist | 2,660 | 39 | 2,280 | 61 |
| Other[5] | 690 | -- | 967 | -- |
| Ferrous: | | | | |
| Iron ore | 785 | -- | 973 | -- |
| Mill scale | 703 | -- | 766 | -- |
| Other[6] | 11 | -- | 27 | -- |
| Siliceous: | | | | |
| Sand, calcium silicates | 3,220 | -- | 3,370 | -- |
| Sandstone, quartzite, soils, nonpozzolanic rocks | 805 | -- | 529 | -- |
| Fly ash | 2,420 | 163 | 1,830 | 184 |
| Other ash, including bottom ash | 1,690 | -- | 1,730 | -- |
| Granulated blast furnace slag[7] | -- | 289 | 50 | 322 |
| Other blast furnace slag | 6 | -- | -- | -- |
| Steel slag | 289 | -- | 276 | -- |
| Other slag | 302 | -- | 96 | -- |
| Natural rock pozzolans[8] | 7 | 11 | 7 | 82 |
| Other pozzolans[9] | 64 | 2 | 228 | 3 |
| Other: | | | | |
| Gypsum and anhydrite | (10) | 4,720 | (10) | 4,790 |
| Miscellaneous[11] | 14 | 30 | 10 | 353 |
| Total[12] | 128,000 | 8,650 | 129,000 | 9,020 |
| Clinker, imported, raw materials equivalent[13] | -- | 734 | -- | 1,630 |
| Grand total[12] | 128,000 | 9,380 | 129,000 | 10,600 |

-- Zero.
[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.
[2]Excludes Puerto Rico.
[3]Includes portland, blended, and masonry cements.
[4]Data are thought to be underreported.
[5]Includes alumina, aluminum dross, bauxite, spent catalysts, and other aluminous materials.
[6]Includes iron sludges, pyrite, and other ferrous materials.
[7]Includes ground and unground material.
[8]Includes pozzolana and burned clays or shales (except where directly reported as clay or shale).
[9]Includes diatomite, silica fume, other microcrystalline silica, and other pozzolans, even if not used as such.
[10]Included with "Calcareous: Other."
[11]Includes fluorspar and other materials not listed above.
[12]May not add to totals shown because of independent rounding.
[13]Converted as 1.7 times the weight of foreign clinker consumed.

TABLE 7
CLINKER PRODUCED AND FUEL CONSUMED BY THE U.S. CEMENT INDUSTRY, BY KILN PROCESS[1, 2]

| | Production | | | Conventional fuels[3] | | | | Waste fuels[3] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Kiln process | Number of plants[4] | Quantity (thousand metric tons) | Percentage of total | Coal[5] (thousand metric tons) | Petcoke (thousand metric tons) | Oil[6] (thousand liters) | Natural gas[7] (thousand cubic meters) | Tires (thousand metric tons) | Solid (thousand metric tons) | Liquid (thousand liters) |
| 2017: | | | | | | | | | | |
| Wet | 7 | 1,420 | 1.9 | 135 | 30 | 131 | 56,200 | -- | 14 | 184,000 |
| Dry[8] | 84 | 75,259 | 98.1 | 5,200 | 2,000 | 34,900 | 1,390,000 | 359 | 1,140 | 706,000 |
| Both[9] | 1 | W | W | W | W | W | W | W | W | W |
| Total[10, 11] | 92 | 76,678 | 100.0 | 5,330 | 2,030 | 35,000 | 1,440,000 | 359 | 1,150 | 891,000 |
| 2018: | | | | | | | | | | |
| Wet | 7 | 1,413 | 1.8 | 140 | 25 | 1,700 | 53,800 | -- | 13 | 180,000 |
| Dry[8] | 85 | 75,699 | 98.2 | 4,980 | 1,890 | 30,300 | 1,640,000 | 340 | 1,070 | 714,000 |
| Both[9] | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total[10] | 92 | 77,112 | 100.0 | 5,120 | 1,920 | 32,000 | 1,690,000 | 340 | 1,080 | 894,000 |

W Withheld to avoid disclosing company proprietary data. -- Zero.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.

[2]Excludes Puerto Rico.

[3]All fuel data have been rounded to no more than three significant digits.

[4]Excludes idle plants that, although retained as active in terms of clinker capacity, had no production during 2017–18.

[5]All reported to be bituminous.

[6]Distillate and residual fuel oils. Excludes used oils that were reported under liquid wastes.

[7]Includes landfill gas and propane.

[8]Includes one semiwet plant and one semidry plant.

[9]Plants that can operate wet and dry kilns, whether or not both types were active during the year. Includes plants that converted from wet to dry technology during the year.

[10]May not add to totals shown because of independent rounding.

[11]Data for the category "Both" have been included in those for "Dry" plants to avoid disclosing company proprietary data.

TABLE 8
ELECTRICITY CONSUMED BY U.S. CEMENT PLANTS, BY PLANT PROCESS[1]

| Plant process | Electricity consumed[2] | | | | | | | Cement produced[3] (thousand metric tons) | Average consumption (kilowatthours per ton of cement produced) |
|---|---|---|---|---|---|---|---|---|---|
| | Generated | | Purchased | | Total[4] | | | | |
| | Number of plants | Quantity (million kilowatthours) | Number of plants | Quantity (million kilowatthours) | Number of plants | Quantity (million kilowatthours) | Percentage of total | | |
| 2017: | | | | | | | | | |
| Integrated plants: | | | | | | | | | |
| Wet | -- | -- | 7 | 248 | 7 | 248 | 2 | 1,612 | 154 |
| Dry[5] | 3 | 210 | 84 | 11,300 | 84 r | 11,500 | 98 | 83,628 | 135 |
| Both[6, 7] | -- | -- | 1 | W | 1 | W | W | W | W |
| Total or average[4] | 3 | 210 | 92 | 11,500 r | 92 r | 11,700 r | 100 | 85,240 | 289 |
| Grinding plants[8] | -- | -- | 3 | 99 | 3 | 99 | -- | 1,008 | 99 |
| Exclusions[9] | -- | -- | 2 | XX | 2 | XX | -- | 108 | XX |
| 2018: | | | | | | | | | |
| Integrated plants: | | | | | | | | | |
| Wet | -- | -- | 7 | 240 | 7 | 240 | 2 | 1,568 | 153 |
| Dry[5] | 3 | 214 | 85 | 11,400 | 85 | 11,600 | 98 | 83,709 | 139 |
| Both[6] | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total or average[4] | 3 | 214 | 92 | 11,600 | 92 | 11,800 | 100 | 85,277 | 139 |
| Grinding plants[8] | -- | -- | 3 | 99 | 3 | 99 | -- | 989 | 100 |
| Exclusions[9] | -- | -- | 2 | XX | 2 | XX | -- | 102 | XX |

[r]Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable. -- Zero.
[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.
[2]Excludes Puerto Rico.
[3]Portland and masonry cement.
[4]May not add to totals shown because of independent rounding.
[5]Includes one semidry plant and one semiwet plant.
[6]Plants that can operate wet and dry kilns, whether or not both types were active during the year. Includes plants that converted from wet to dry technology during the year.
[7]Data for the category "Both" have been included in those for "Dry" plants to avoid disclosing company proprietary data.
[8]Plants that did not produce clinker but ground clinker from outside sources. Excludes plants that only made masonry cement or just reground one type of portland cement into another, or which reported a substantial component of grinding of excess granulated blast furnace slag. Excludes two plants that were reported under "Dry" as noted in footnote 5.
[9]Plants at which production of portland cement was by regrinding of one type into another or which reported production only of masonry cement.

TABLE 9
CEMENT SHIPMENTS TO FINAL CUSTOMER, BY DESTINATION AND ORIGIN[1, 2]

(Thousand metric tons)

| Destination and origin | Portland cement | | Masonry cement | |
|---|---|---|---|---|
| | 2017 | 2018 | 2017 | 2018 |
| Destination: | | | | |
| Alabama | 1,161 | 1,239 | 79 | 75 |
| Alaska[3] | 132 | 138 | -- | -- |
| Arizona | 2,211 | 2,767 | 33 | 38 |
| Arkansas | 836 | 814 | 50 | 41 |
| California, northern | 3,741 | 3,923 | 41 | 33 |
| California, southern | 6,487 | 6,723 | 179 | 158 |
| Colorado | 2,441 | 2,347 | 5 | 5 |
| Connecticut[3] | 570 | 551 | 13 | 13 |
| Delaware[3] | 181 | 172 | 5 | 5 |
| District of Columbia[3] | 235 | 220 | (4) | (4) |
| Florida | 6,498 | 7,099 | 481 | 586 |
| Georgia | 3,053 | 3,133 | 148 | 143 |
| Hawaii[3] | 322 | 294 | 1 | 1 |
| Idaho[3] | 537 | 601 | -- | -- |
| Illinois, excluding Chicago | 1,319 | 1,271 | 7 | 5 |
| Illinois, metropolitan Chicago[3] | 1,595 | 1,595 | 16 | 15 |
| Indiana | 1,916 | 1,928 | 40 | 43 |
| Iowa | 1,984 | 1,980 | (4) | (4) |
| Kansas | 1,288 | 1,248 | 4 | 3 |
| Kentucky | 1,108 | 1,034 | 51 | 48 |
| Louisiana[3] | 1,744 | 1,699 | 47 | 44 |
| Maine | 215 | 207 | 1 | (4) |
| Maryland | 1,194 | 1,155 | 31 | 26 |
| Massachusetts[3] | 1,030 | 1,004 | 9 | 9 |
| Michigan | 2,106 | 2,076 | 55 | 46 |
| Minnesota[3] | 1,627 | 1,557 | 1 | 1 |
| Mississippi[3] | 678 | 641 | 36 | 33 |
| Missouri | 1,821 | 1,766 | 10 | 10 |
| Montana | 333 | 329 | (4) | (4) |
| Nebraska | 1,317 | 1,277 | (4) | (4) |
| Nevada | 1,319 | 1,347 | 4 | 3 |
| New Hampshire[3] | 198 | 194 | 6 | 6 |
| New Jersey[3] | 1,409 | 1,308 | 38 | 36 |
| New Mexico | 535 | 626 | 3 | 2 |
| New York, eastern | 498 | 454 | 6 | 7 |
| New York, western[3] | 672 | 705 | 10 | 9 |
| New York, metropolitan[3] | 1,802 | 1,813 | 47 | 42 |
| North Carolina[3] | 2,556 | 2,529 | 166 | 153 |
| North Dakota[3] | 561 | 578 | 1 | 1 |
| Ohio | 3,215 | 3,246 | 69 | 67 |
| Oklahoma | 1,707 | 1,785 | 27 | 33 |
| Oregon | 950 | 1,048 | (4) | (4) |
| Pennsylvania, eastern | 1,675 | 1,582 | 39 | 32 |
| Pennsylvania, western | 1,037 | 1,018 | 23 | 22 |
| Rhode Island[3] | 116 | 120 | (4) | (4) |
| South Carolina | 1,662 | 1,643 | 71 | 70 |
| South Dakota | 500 | 467 | -- | -- |
| Tennessee | 1,610 | 1,768 | 144 | 137 |
| Texas, northern | 7,232 | 7,365 | 124 | 135 |
| Texas, southern | 7,595 | 7,906 | 207 | 200 |
| Utah | 1,471 | 1,480 | -- | -- |
| Vermont[3] | 104 | 113 | -- | (4) |
| Virginia | 1,908 | 1,860 | 66 | 56 |
| Washington | 1,735 | 1,967 | (4) | (4) |
| West Virginia | 433 | 432 | 8 | 7 |

See footnotes at end of table.

TABLE 9—Continued
CEMENT SHIPMENTS TO FINAL CUSTOMER, BY DESTINATION AND ORIGIN[1, 2]

(Thousand metric tons)

| Destination and origin | Portland cement | | Masonry cement | |
|---|---|---|---|---|
| | 2017 | 2018 | 2017 | 2018 |
| Destination:—Continued | | | | |
| Wisconsin[3] | 1,852 | 1,884 | 10 | 9 |
| Wyoming | 282 | 262 | -- | -- |
| Total[5] | 94,316 | 96,289 | 2,411 | 2,411 |
| Puerto Rico | 512 | 629 | -- | -- |
| Foreign countries and (or) localities[6] | 632 | 562 | (4) | (4) |
| Grand total[5] | 95,460 | 97,480 | 2,411 | 2,411 |
| Origin: | | | | |
| United States | 83,645 | 84,344 | 2,392 | 2,397 |
| Puerto Rico | 453 | 642 | -- | -- |
| Foreign countries and (or) localities[7] | 11,362 | 12,494 | 20 | 15 |
| Total shipments[5] | 95,460 | 97,480 | 2,411 | 2,411 |

-- Zero.
[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits. Includes cement produced from imported clinker and imported cement shipped by domestic producers and importers.
[2]Data are developed from consolidated monthly surveys of shipments by companies and may differ from data in tables 1, 10–12, and 14–15, which are from annual surveys of individual plants and importers.
[3]Has no cement plants.
[4]Less than ½ unit.
[5]May not add to totals shown because of independent rounding.
[6]Includes shipments to U.S. possessions and territories.
[7]Imported cement sold to final customers in the United States as reported by domestic producers and other importers. Data do not match the imports in tables 17–20.

TABLE 10
SHIPMENTS OF PORTLAND CEMENT IN THE UNITED STATES, BY TYPE OF CARRIER[1, 2]

(Thousand metric tons)

| Type of carrier | Plant to terminal | | Plant to customer | | Terminal to customer | | Total to customers[4] |
|---|---|---|---|---|---|---|---|
| | In bulk | In bags[3] | In bulk | In bags[3] | In bulk | In bags[3] | |
| 2017: | | | | | | | |
| Railroad | 12,400 | 3 | 683 | -- | 357 | 6 | 1,050 [r] |
| Truck | 4,460 | 54 | 48,600 | 955 | 43,400 | 306 | 93,300 |
| Barge and boat | 9,700 | -- | 109 | -- | 11 | -- | 120 |
| Total[4] | 26,600 | 56 | 49,400 | 955 | 43,800 | 312 | 94,500 [5] |
| 2018: | | | | | | | |
| Railroad | 10,500 | 12 | 823 | -- | 433 | 1 | 1,260 |
| Truck | 7,080 | 93 | 48,600 | 1,000 | 44,500 | 292 | 94,400 |
| Barge and boat | 4,350 | -- | 452 | -- | 6 | -- | 458 |
| Total[4] | 22,000 | 104 | 49,900 | 1,000 | 44,900 | 293 | 96,100 [5] |

[r]Revised. -- Zero.
[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits.
[2]Includes imported cement and cement made from imported clinker. Excludes Puerto Rico.
[3]Includes packages, bags, and supersacks.
[4]May not add to totals shown because of independent rounding.
[5]Shipments are based on an annual survey of plants and importers; may differ from totals in table 9, which are based on consolidated monthly data.

TABLE 11
PORTLAND CEMENT SHIPPED IN THE UNITED STATES, BY DISTRICT[1]

| District[2] | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value[4] | | | Value[4] | |
| | Quantity[3] (thousand metric tons) | Total (thousands) | Average (per metric ton) | Quantity[3] (thousand metric tons) | Total (thousands) | Average (per metric ton) |
| Maine and New York | 2,857 | $344,513 | $120.59 | 2,675 | $323,969 | $121.13 |
| Pennsylvania[5] | 3,990 | 409,000 | 102.50 | 3,410 | 359,000 | 105.50 |
| Illinois | 1,322 | 157,440 | 119.05 | 1,313 | 160,221 | 122.03 |
| Indiana and Ohio | 3,652 | 437,392 | 119.76 | 3,580 [5] | 450,000 [5] | 126.00 [5] |
| Michigan | 4,530 [5] | 530,000 [5] | 117.00 [5] | 4,623 | 639,761 | 138.39 |
| Iowa, Nebraska, South Dakota | 4,285 | 541,824 | 126.45 | 3,910 [5] | 507,000 [5] | 130.00 [5] |
| Kansas | 1,695 | 172,951 | 102.04 | 1,727 | 176,976 | 102.49 |
| Missouri | 8,506 | 998,000 [5] | 117.50 [5] | 8,470 [5] | 972,000 [5] | 115.00 [5] |
| Florida | 6,441 | 693,513 | 107.68 | 6,983 | 762,801 | 109.24 |
| Georgia, Maryland, Virginia, West Virginia | 6,002 | 651,566 | 108.55 | 6,016 | 671,585 | 111.63 |
| South Carolina | 3,050 [5] | 368,000 [5] | 121.00 [5] | 2,847 | 356,342 | 125.14 |
| Alabama, Kentucky, Tennessee | 6,150 | 725,372 | 117.96 | 6,283 | 781,162 | 124.33 |
| Arkansas and Oklahoma | 2,315 | 250,302 | 108.13 | 2,372 | 263,456 | 111.08 |
| Texas, northern | 6,821 | 822,084 | 120.52 | 7,001 | 890,462 | 127.19 |
| Texas, southern | 6,563 | 767,784 | 116.99 | 6,620 [5] | 793,000 [5] | 120.00 [5] |
| Arizona and New Mexico | 2,913 | 317,848 | 109.12 | 3,455 | 393,407 | 113.88 |
| Colorado and Wyoming | 2,625 | 363,821 | 138.62 | 2,646 | 376,946 | 142.44 |
| Montana, Nevada, Utah | 3,110 | 414,927 | 133.40 | 2,692 | 366,566 | 136.17 |
| Alaska and Hawaii | 415 | 67,329 | 162.15 | 395 | 63,974 | 161.78 |
| California | 10,782 | 1,103,796 | 102.37 | 11,668 | 1,245,703 | 106.76 |
| Oregon and Washington | 2,295 | 270,019 | 117.65 | 2,547 | 318,223 | 124.92 |
| Importers[5, 6] | 4,180 | 518,000 | 124.00 | 4,860 | 630,000 | 129.50 |
| Total or average[5, 7] | 94,500 | 10,900,000 | 115.50 | 96,100 | 11,500,000 | 119.50 |
| Puerto Rico | 504 [5] | W | W | 629 [5] | W | W |
| Grand total[7] | 95,000 [5] | W | W | 96,700 [5] | W | W |

W Withheld to avoid disclosing company proprietary data.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits. Includes gray and white portland cement. Includes cement made from imported clinker.

[2]The location of the reporting entities, not necessarily the location of sales (see table 9 for sales data, by State). Specific districts include shipments by importers where district assignations were possible.

[3]Tonnages are those by reporting entities in the district but may include shipments into other districts. They differ from the data in table 9, which are the actual reported sales into the specific States.

[4]Values are mill net or ex-plant (free on board) valuations of total sales to final customers, including sales from plants' external distribution terminals. The data are ex-terminal for independently reporting terminals. Data include all varieties of portland cement and both bulk and bag shipments. Unless otherwise specified, data are presented unrounded. Unrounded or not, unit value data should be viewed as value indicators, accurate to no more than the nearest $0.50 or $1.00 per metric ton.

[5]Data are rounded to three significant digits (unit values to the nearest $0.50) because they include estimates.

[6]Importers for which district assignations were not possible.

[7]May not add to totals shown because of independent rounding.

TABLE 12
MASONRY CEMENT SHIPPED IN THE UNITED STATES, BY DISTRICT[1, 2]

| District[3] | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value[5] | | | Value[5] | |
| | Quantity[4] (thousand metric tons) | Total (thousands) | Average (per metric ton) | Quantity[4] (thousand metric tons) | Total (thousands) | Average (per metric ton) |
| Maine and New York | 33 | $4,695 | $141.33 | 50 | $6,715 | $134.13 |
| Pennsylvania | 142 | 23,100 [6] | 162.50 | 125 | 19,200 [6] | 153.00 [6] |
| Illinois, Indiana, Ohio | 219 | 37,640 | 171.86 | 168 | 29,497 | 175.69 |
| Michigan | 79 | 12,800 [6] | 162.00 [6] | 73 | 10,900 [6] | 148.00 [6] |
| Iowa, Nebraska, South Dakota | W | W | W | W | W | W |
| Kansas and Missouri | 64 | 12,217 | 189.94 | 59 | 11,102 | 188.17 |
| Florida | 469 | 67,262 | 143.38 | 568 | 81,940 | 144.34 |
| Georgia, Maryland, Virginia, West Virginia | 252 | 53,869 | 213.43 | 265 | 55,759 | 210.72 |
| South Carolina | 193 | 29,300 [6] | 151.50 [6] | 183 | 36,035 | 196.43 |
| Alabama, Kentucky, Mississippi, Tennessee | 308 | 50,749 | 164.51 | 287 | 48,800 [6] | 170.00 [6] |
| Arkansas and Oklahoma | 96 | 13,104 | 136.99 | 90 | 11,747 | 131.21 |
| Texas | 280 | 49,000 [6] | 175.00 [6] | 267 [6] | 45,800 [6] | 171.50 [6] |
| Arizona and New Mexico | 36 | 4,291 | 117.57 | 42 | 5,075 | 121.55 |
| Colorado, Montana, Nevada, Utah, Wyoming | W | W | W | W | W | W |
| Alaska and Hawaii | 1 | 514 | 350.10 | 1 | 410 | 363.50 |
| California, Oregon, Washington | 224 | 27,200 [6] | 121.50 [6] | 179 | 23,800 [6] | 132.50 [6] |
| Importers[7] | 24 | 5,010 [6] | 212.00 [6] | 25 | 5,410 [6] | 214.50 [6] |
| Total or average[8] | 2,429 | 392,000 [6] | 161.50 [6] | 2,390 [6] | 393,000 [6] | 164.50 [6] |
| Puerto Rico | -- | -- | -- | -- | -- | -- |
| Grand total or average[8] | 2,429 | 392,000 [6] | 161.50 [6] | 2,390 [6] | 393,000 [6] | 164.50 [6] |

W Withheld to avoid disclosing company proprietary data. -- Zero.

[1]Table includes data available through April 6, 2020. Even where presented unrounded, data are thought to be accurate to no more than three significant digits. Shipments are those by cement companies to final customers and include imported cement and cement made from imported clinker. Excludes sales of masonry cement by portland cement final customers who made masonry cement from purchased portland cement.

[2]Data include true masonry, plastic, portland-lime, and stucco cements.

[3]District is the location of the reporting entities, not necessarily the location of sales (see table 9 for sales data, by State). Specific districts include shipments by importers where district assignations were possible.

[4]Tonnages are those by reporting entities in the district but may include shipments into other districts. They differ from the data in table 9, which are the actual reported sales into the specific States.

[5]Values are mill net or ex-plant valuations of total sales to final customers, including sales from plants external distribution terminals. The data are ex-terminal for independently reporting terminals. Data include both bulk and bag shipments. Unless otherwise specified, data are presented unrounded. Unrounded or not, unit value data should be viewed as value indicators, accurate to no more than the nearest $0.50 or even $1.00 per metric ton.

[6]Data are rounded to no more than three significant digits (unit values to the nearest $0.50) because they include estimates.

[7]Importers for which district assignations were not possible.

[8]May not add to totals shown because of independent rounding.

TABLE 13
AVERAGE MILL NET VALUE OF CEMENT SOLD IN THE UNITED STATES[1, 2]

(Dollars per metric ton)

| Year | Portland cement | | | Masonry cement | All cement |
|---|---|---|---|---|---|
| | Gray | White[3] | All | | |
| 2017 | 114.50 | 216.50 | 115.50 | 161.50 | 117.00 |
| 2018 | 119.00 | 214.00 | 119.50 | 164.50 | 121.00 |

[1]Table includes data available through April 6, 2020. Values are average of sales to final customers, free on board the plant or independently reporting terminal. Values include any bagging charges, but exclude delivery charges to customers or to external terminals. Data exclude Puerto Rico.

[2]Data are rounded to the nearest $0.50 per metric ton.

[3]Data for white cement include a component of resales showing significant price markups.

TABLE 14
PORTLAND CEMENT SHIPMENTS IN 2018, BY DISTRICT AND TYPE OF CUSTOMER[1]

(Thousand metric tons)

| District[2] | Ready-mixed concrete | Concrete product manufacturers | Contractors | Building material dealers | Oil well, mining, waste stabilization | Government and other[3] | Total[4] |
|---|---|---|---|---|---|---|---|
| Maine and New York | 2,010 | 337 | 65 | 195 | 24 | 45 | 2,675 |
| Pennsylvania | 1,770 | 893 | 239 | 240 | 43 | 222 | 3,410 [5] |
| Illinois | 805 | 59 | 21 | 7 | 229 | 192 | 1,313 |
| Indiana and Ohio | 2,620 | 447 | 232 | 89 | 107 | 89 | 3,580 [5] |
| Michigan | 3,540 | 394 | 535 | 136 | 8 | 11 | 4,623 |
| Iowa, Nebraska, South Dakota | 2,910 | 386 | 330 | 53 | 115 | 113 | 3,910 [5] |
| Kansas | 1,210 | 178 | 277 | 41 | 23 | -- | 1,727 |
| Missouri | 6,320 | 763 | 1,010 | 185 | 57 | 141 | 8,470 [5] |
| Florida | 4,890 | 1,190 | 318 | 463 | 1 | 115 | 6,983 |
| Georgia, Maryland, Virginia, West Virginia | 3,770 | 1,020 | 548 | 499 | 9 | 172 | 6,016 |
| South Carolina | 1,880 | 402 | 339 | 194 | 1 | 34 | 2,847 |
| Alabama, Kentucky, Tennessee | 4,620 | 943 | 402 | 214 | 11 | 93 | 6,283 |
| Arkansas and Oklahoma | 1,640 | 147 | 384 | 27 | 163 | 15 | 2,372 |
| Texas, northern | 4,210 | 431 | 1,080 | 132 | 958 | 191 | 7,001 |
| Texas, southern | 4,560 | 705 | 670 | 210 | 365 | 105 | 6,620 [5] |
| Arizona and New Mexico | 2,460 | 592 | 153 | 115 | 94 | 40 | 3,455 |
| Colorado and Wyoming | 2,090 | 130 | 148 | 58 | 172 | 53 | 2,646 |
| Montana, Nevada, Utah | 1,960 | 238 | 85 | 76 | 284 | 46 | 2,692 |
| Alaska and Hawaii | 378 | 15 | 3 | -- | -- | -- | 395 |
| California | 8,380 | 1,220 | 1,330 | 621 | 116 | 6 | 11,668 |
| Oregon and Washington | 2,080 | 184 | 83 | 81 | 30 | 84 | 2,547 |
| Importers[6] | 4,160 | 394 | 143 | 39 | 33 | 86 | 4,860 [5] |
| Total[4] | 68,300 | 11,100 | 8,390 | 3,680 | 2,840 | 1,850 | 96,100 [5] |
| Puerto Rico | 291 | 48 | 14 | 274 | -- | 2 | 629 [5] |
| Grand total[4] | 68,500 | 11,100 [7] | 8,400 [8] | 3,950 | 2,840 [9] | 1,860 [10] | 96,700 [5] |

-- Zero.

[1]Table includes data available through April 6, 2020. Except for district totals, data have been rounded to three significant digits, but are likely accurate to only two significant digits. District totals are likely accurate to no more than three significant digits. Includes imported cement and cement made from imported clinker.

[2]The location of the reporting entity, not the location of sales (see table 9 for sales data, by State). Specific districts include shipments by importers where district assignations were possible.

[3]Includes shipments to miscellaneous customer types and for which customer types were not specified.

[4]May not add to totals shown because of independent rounding.

[5]Includes estimates for nonrespondents or facilities that provided incomplete information.

[6]Shipments by importers where district assignations were not possible.

[7]Includes pipe—1,100; brick and block—3,550; precast and prestressed—3,820; and other or unspecified—2,650.

[8]Includes airport—124; soil cement—2,280; road paving—3,450; and other or unspecified—2,550.

[9]Includes waste stabilization—157; mining—326; and oil well drilling—2,360.

[10]Includes other or unspecified—1,810.

TABLE 15
PORTLAND CEMENT SHIPMENTS IN THE UNITED STATES, BY TYPE OF CEMENT[1, 2, 3]

(Thousand metric tons)

| Type of cement[4] | 2017 | 2018 |
|---|---|---|
| General use and moderate heat (Types I and II)[5, 6] | 71,700 | 70,000 |
| High early strength (Type III) | 2,980 | 2,820 |
| Sulfate resistant (Type V)[5] | 15,000 | 18,300 |
| Block | 106 | 157 |
| Oil well | 1,690 | 1,930 |
| White[7] | 880 | 867 |
| Blended:[8] | | |
| Portland, natural pozzolans | 44 | 54 |
| Portland, ground granulated blast furnace slag | 662 | 561 |
| Portland, fly ash | 661 | 248 |
| Portland, other pozzolans[9] | 672 | 1,090 |
| Total blended[10] | 2,040 | 1,950 |
| Expansive and regulated fast setting | -- | -- |
| Miscellaneous[11] | 24 | 40 |
| Grand total[10] | 94,500 | 96,100 |

-- Zero.
[1]Table includes data available through April 6, 2020. Includes sales of imported cement. Excludes Puerto Rico.
[2]Data are rounded to no more than three significant digits.
[3]Gray portland-type cements unless otherwise specified.
[4]Sold mostly under American Society for Testing and Materials (ASTM) specifications ATSM C150, ASTM C595, and ASTM C1157.
[5]Type II/V and similar sulfate-resisting hybrids are included within Type V, as are Type HS and similar cements in ASTM C1157.
[6]Includes ASTM C1157 general use and moderate heat cements that contain no pozzolans.
[7]White or colored portland-type cements. Most are Types I or II but may include Types III and V and block cements.
[8]Cements sold under ASTM C595 and those under ASTM C1157 that contain pozzolans.
[9]Includes blends with cement kiln dust, silica fume, other pozzolans, limestone and blends containing multiple pozzolans.
[10]May not add to totals shown because of independent rounding.
[11]Includes low heat (Type IV), waterproof, and other portland-type cements.

TABLE 16
U.S. EXPORTS OF HYDRAULIC CEMENT AND CLINKER, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Country or locality | 2017 | | 2018 | |
|---|---|---|---|---|
| | Quantity | Value[2] | Quantity | Value[2] |
| Aruba | 1 | 412 | 1 | 487 |
| Australia | 2 | 813 | 1 | 662 |
| Bahamas, The | 38 | 6,242 | 53 | 14,378 |
| Bermuda | 3 | 249 | 1 | 112 |
| Canada | 845 | 120,824 r | 725 | 100,345 |
| Cayman Islands | 2 | 585 | 2 | 511 |
| Chile | 3 | 749 | 2 | 445 |
| China | 2 | 1,802 | 1 | 954 |
| Dominican Republic | 1 | 548 | 1 | 533 |
| Germany | (3) | 222 | 1 | 526 |
| Guyana | 1 | 259 | 2 | 498 |
| Haiti | 14 | 1,269 | (3) | 38 |
| Honduras | 1 | 128 | (3) | 28 |
| Hong Kong | 1 | 353 | (3) | 20 |
| Ireland | 1 | 441 | (3) | 91 |
| Jamaica | 1 | 155 | (3) | 176 |
| Japan | 14 | 2,283 | 18 | 2,824 |
| Korea, Republic of | 14 | 2,046 | 12 | 1,958 |
| Liberia | -- | -- | 3 | 798 |
| Marshall Islands | 8 | 877 | (3) | 360 |
| Mexico | 56 | 11,197 | 78 | 15,401 |
| Micronesia | 1 | 74 | (3) | 7 |
| Mozambique | -- | -- | 2 | 306 |
| New Zealand | (3) | 169 | 1 | 588 |
| Oman | (3) | 264 | 3 | 413 |
| Panama | 3 | 1,159 | 1 | 627 |
| Qatar | (3) | 486 | 2 | 449 |
| Russia | 2 | 574 | 5 | 1,631 |
| Saudi Arabia | 1 | 186 | (3) | 95 |
| South Africa | 1 | 312 | (3) | 215 |
| Sweden | 1 | 393 | (3) | 87 |
| Taiwan | 1 | 186 | (3) | 89 |
| Thailand | (3) | 12 | 1 | 122 |
| Trinidad and Tobago | (3) | 123 | 10 | 1,684 |
| Turks and Caicos Islands | 1 | 185 | (3) | 141 |
| United Kingdom | 1 | 588 | 2 | 573 |
| Venezuela | 7 | 3,974 | 2 | 264 |
| Other [71 countries and (or) localities] | 7 | 3,802 r | 7 | 3,512 |
| Total[4] | 1,035 | 163,941 r | 940 | 151,947 |
| Puerto Rico: | | | | |
| Aruba | 24 | 1,188 | (3) | 36 |
| Brazil | 3 | 174 | -- | -- |
| British Virgin Islands | 19 | 2,331 | 18 | 2,378 |
| Curacao | 10 | 672 | (3) | 12 |
| Dominica | -- | -- | 2 | 154 |
| Guadeloupe | 18 | 3,277 | -- | -- |
| Martinique | 14 | 2,581 | -- | -- |
| Netherlands | 14 | 672 | 1 | 147 |
| Panama | -- | -- | 1 | 264 |
| St. Lucia | -- | -- | 3 | 239 |
| Turks and Caicos Islands | 4 | 457 | 1 | 153 |
| Other [3 countries and (or) localities] | (3) | 25 r | (3) | 274 |
| Total[4] | 106 | 11,380 | 27 | 3,657 |
| Grand total[4] | 1,141 | 175,321 r | 967 | 155,603 |

See footnotes at end of table.

TABLE 16—Continued
U.S. EXPORTS OF HYDRAULIC CEMENT AND CLINKER, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

[r]Revised. -- Zero.
[1]Table includes data available through April 6, 2020. Data are unrounded but are thought to be accurate to no more than three significant digits. Includes portland and masonry cements.
[2]Free alongside ship (f.a.s.) value. The value of exports at the U.S. seaport or border point of export is based on the transaction price, including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier. The value excludes the cost of loading the carrier.
[3]Less than ½ unit.
[4]Data may not add to totals shown because of independent rounding.

Source: U.S. Census Bureau.

TABLE 17
U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| Brazil | 4 | 2,131 | 2,141 | 8 | 5,311 | 5,343 |
| Bulgaria | 131 | 7,108 | 7,873 | 31 | 2,042 | 2,771 |
| Canada[4] | 4,352 | 435,686 r | 444,991 r | 5,326 | 526,419 | 543,074 |
| China | 2,036 [5] | 97,834 [5] | 132,908 [5] | 2,007 | 100,291 | 136,813 |
| Colombia | (6) | 114 | 114 | 64 | 4,707 | 5,642 |
| Croatia | 22 | 8,367 | 9,921 | 29 | 10,804 | 12,799 |
| Denmark | 190 | 22,464 r | 30,743 | 209 | 22,969 | 29,410 |
| Egypt | 183 | 19,594 | 26,397 | 131 | 13,690 | 18,511 |
| France | 91 | 33,151 | 33,404 | 117 | 41,196 | 41,403 |
| Germany | 1 | 363 | 420 | 1 | 249 | 553 |
| Greece | 2,221 | 97,582 | 124,721 | 1,964 | 93,780 | 124,978 |
| Ireland | -- | -- | -- | 19 | 1,758 | 1,760 |
| Italy | 195 | 8,778 | 13,659 | 116 | 5,668 | 8,556 |
| Japan | 1 | 594 | 632 | 1 | 688 | 746 |
| Korea, Republic of | 646 | 25,025 | 35,693 | 680 | 28,472 | 40,496 |
| Malta[7] | 5 | 549 | 551 | -- | -- | -- |
| Mexico[4] | 686 | 59,238 | 68,463 | 1,024 | 89,210 | 108,586 |
| Morocco | 8 | 410 | 485 | 12 | 648 | 970 |
| Netherlands | 3 | 3,122 | 3,414 | 3 | 3,236 | 3,631 |
| Poland | 4 | 3,338 | 3,776 | 9 | 7,621 | 8,973 |
| Portugal | 89 | 7,285 | 7,968 | -- | -- | -- |
| Spain | 601 | 32,650 | 48,486 | 429 | 27,875 | 35,688 |
| Sweden | 271 | 14,736 | 20,585 | 436 | 19,905 | 32,184 |
| Taiwan | 305 | 16,007 | 21,772 | 303 | 15,818 | 21,505 |
| Thailand | 17 | 2,012 | 2,932 | 19 | 2,652 | 3,617 |
| Turkey[7] | 1,433 | 76,351 | 104,322 | 1,791 | 100,958 | 144,243 |
| United Kingdom | 2 | 1,450 r | 1,719 r | 2 | 1,439 | 1,639 |
| Other [7 countries and (or) localities] | (6) | 63 r | 65 r | (6) | 148 | 185 |
| Total[4, 8] | 13,497 [5] | 976,002 r, [5] | 1,148,153 r, [5] | 14,731 | 1,127,553 | 1,334,075 |
| Puerto Rico: | | | | | | |
| Colombia | -- | -- | -- | 8 | 959 | 1,559 |
| Dominican Republic | 16 | 1,260 | 1,438 | (6) | 21 | 21 |
| Greece | 100 | 6,636 | 8,437 | -- | -- | -- |
| Mexico | 10 | 1,215 | 1,571 | 12 | 1,410 | 1,830 |
| Portugal | (6) r | 62 | 86 | 10 | 1,386 | 1,814 |
| Spain | -- | -- | -- | 44 | 2,251 | 2,251 |
| Turkey | -- | -- | -- | 301 | 17,069 | 18,438 |
| Other [3 countries and (or) localities] | (6) | 81 | 99 | (6) | 131 | 151 |
| Total[8] | 126 | 9,253 | 11,631 | 375 | 23,227 | 26,063 |
| Grand total[4, 8] | 13,623 [5] | 985,255 r, [5] | 1,159,783 r, [5] | 15,106 | 1,150,780 | 1,360,138 |

rRevised. -- Zero.

[1]Table includes data available through April 6, 2020. Data are unrounded but are thought to be accurate to no more than three significant digits. Includes portland, masonry, and other hydraulic cements.

[2]Customs value. The price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

[3]Cost, insurance, and freight (c.i.f.) value. The value represents the customs value plus insurance, freight, and other delivery charges to the first port of entry, but excludes costs of offloading, other U.S. port handling charges, and demurrage.

[4]Data are underreported with respect to clinker from Canada, and cement from Mexico, owing to additional material coming in as "informal entries."

[5]Adjusted by the U.S. Geological Survey to credit 27,816 metric tons of portland cement from China, with a customs value of $1,043,100 and a c.i.f. value of $1,068,000, misreported by the importer as sand.

[6]Less than ½ unit.

[7]Malta has no cement plants; material is believed to be from Turkey.

[8]Data may not add to totals shown because of independent rounding.

Source: U.S. Census Bureau.

TABLE 18

U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY CUSTOMS DISTRICT AND COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Customs district and country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| Anchorage, AK: | | | | | | |
| Canada | 6 | 1,117 r | 1,127 r | 5 | 1,547 | 1,558 |
| Korea, Republic of | 88 | 3,377 | 5,481 | 96 | 3,986 | 6,327 |
| Total[4] | 94 | 4,494 r | 6,608 r | 101 | 5,533 | 7,885 |
| Baltimore, MD: | | | | | | |
| China | 3 | 454 | 712 | 1 | 173 | 242 |
| Other [4 countries and (or) localities] | (5) | 209 r | 246 r | (5) | 268 | 316 |
| Total[4] | 4 | 663 | 959 | 2 | 441 | 558 |
| Boston, MA: | | | | | | |
| Canada | 58 | 4,918 | 4,918 | 29 | 3,489 | 3,622 |
| Greece | 14 | 672 | 672 | -- | -- | -- |
| Other [3 countries and (or) localities] | (5) | 49 | 60 | (5) | 93 | 108 |
| Total[4] | 73 | 5,639 | 5,650 | 29 | 3,582 | 3,730 |
| Buffalo, NY: | | | | | | |
| Canada | 484 | 46,066 | 48,205 | 468 | 46,051 | 47,758 |
| Other [3 countries and (or) localities] | (5) | 4 | 4 | (5) | 26 | 27 |
| Total[4] | 484 | 46,069 | 48,209 | 468 | 46,078 | 47,785 |
| Charleston, SC: | | | | | | |
| Egypt | -- | -- | -- | 2 | 103 | 147 |
| Turkey | 30 | 1,342 | 1,428 | 18 | 907 | 1,489 |
| Other [4 countries and (or) localities] | (5) | 81 | 87 | (5) | 120 | 146 |
| Total[4] | 30 | 1,423 | 1,515 | 21 | 1,130 | 1,782 |
| Chicago, IL: | | | | | | |
| China | 1 | 164 | 238 | -- | -- | -- |
| Germany | 1 | 83 | 94 | (5) | 2 | 2 |
| Other [7 countries and (or) localities] | (5) | 256 | 282 | 1 | 634 | 701 |
| Total[4] | 2 | 503 | 614 | 1 | 636 | 704 |
| Cleveland, OH: | | | | | | |
| Canada | 632 | 60,660 | 62,216 | 725 | 72,318 | 73,769 |
| China | 1 | 86 | 123 | (5) | 36 | 55 |
| Morocco | 2 | 87 | 102 | 5 | 253 | 505 |
| Netherlands | 1 | 1,041 | 1,140 | 1 | 1,052 | 1,195 |
| Poland | 1 | 912 | 1,117 | 3 | 1,896 | 2,316 |
| Other [4 countries and (or) localities] | 1 | 409 | 505 | 1 | 482 | 515 |
| Total[4] | 637 | 63,195 | 65,203 | 734 | 76,037 | 78,354 |
| Columbia-Snake, OR, WA: | | | | | | |
| Canada | 114 | 9,295 | 9,457 | 66 | 5,396 | 5,471 |
| China | 33 | 1,644 | 2,148 | 41 | 1,779 | 2,808 |
| Korea, Republic of | 557 | 21,358 | 29,914 | 570 | 23,502 | 32,905 |
| Netherlands | -- | -- | -- | (5) | 20 | 22 |
| Total[4] | 704 | 32,297 | 41,519 | 677 | 30,697 | 41,205 |
| Dallas-Fort Worth, TX, Poland | (5) | 182 | 194 | (5) | 193 | 233 |
| Detroit, MI: | | | | | | |
| Canada[6] | 1,306 | 115,788 | 117,953 | 1,433 | 127,005 | 129,635 |
| China | (5) | 94 | 103 | 2 | 655 | 694 |
| Other [5 countries and (or) localities] | (5) | 77 r | 85 r | (5) | 229 | 249 |
| Total[4, 6] | 1,307 | 115,960 | 118,140 | 1,435 | 127,889 | 130,578 |
| El Paso, TX: | | | | | | |
| China | (5) | 147 | 148 | (5) | 202 | 204 |
| Mexico[6] | 230 | 25,085 | 29,561 | 424 | 39,953 | 50,908 |
| Total[4, 6] | 230 | 25,232 | 29,709 | 425 | 40,156 | 51,112 |
| Great Falls, MT: | | | | | | |
| Canada | 92 | 12,231 | 12,414 | 218 | 28,001 | 28,455 |
| Croatia | (5) | 45 | 57 | -- | -- | -- |
| Total[4] | 93 | 12,276 | 12,471 | 218 | 28,001 | 28,455 |
| Honolulu, HI, Taiwan | 305 | 16,002 | 21,766 | 303 | 15,812 | 21,497 |

See footnotes at end of table.

TABLE 18—Continued
U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY CUSTOMS DISTRICT AND COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Customs district and country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| Houston-Galveston, TX: | | | | | | |
| Canada | -- | -- | -- | 228 | 11,427 | 15,854 |
| China | 352 | 12,505 | 21,301 | 351 | 14,208 | 23,010 |
| Egypt | 91 | 9,584 | 12,809 | 71 | 7,735 | 10,013 |
| Greece | 380 | 15,599 | 25,153 | 344 | 14,703 | 27,522 |
| Italy | 194 | 8,708 | 13,568 | 116 | 5,660 | 8,548 |
| Mexico | 37 | 1,489 | 2,101 | 51 | 2,355 | 3,241 |
| Poland | 2 | 1,783 | 1,922 | 5 | 4,673 | 5,375 |
| Portugal | 63 | 6,091 | 6,245 | -- | -- | -- |
| Spain | 453 | 19,364 | 26,281 | 192 | 8,917 | 12,688 |
| Turkey | 393 | 22,407 | 32,182 | 846 | 41,567 | 60,900 |
| Other [4 countries and (or) localities] | (5) | 236 | 280 | (5) | 73 | 87 |
| Total[4] | 1,965 | 97,766 | 141,842 | 2,203 | 111,318 | 167,237 |
| Laredo, TX: | | | | | | |
| Mexico | 165 | 23,680 | 24,507 | 180 | 25,427 | 26,295 |
| Spain | -- | -- | -- | 87 | 6,368 | 6,369 |
| Turkey | 14 | 589 | 1,122 | -- | -- | -- |
| Other [2 countries and (or) localities] | (5) | 25 | 26 | -- | -- | -- |
| Total[4] | 179 | 24,294 | 25,655 | 267 | 31,795 | 32,664 |
| Los Angeles, CA: | | | | | | |
| China | 30 | 3,400 | 4,491 | 12 | 1,333 | 1,753 |
| Egypt | 19 | 2,082 | 3,032 | 21 | 2,083 | 3,037 |
| Mexico | -- | -- | -- | 115 | 6,135 | 8,036 |
| Thailand | 8 | 993 | 1,444 | 8 | 1,171 | 1,613 |
| Turkey | 31 | 3,469 | 6,344 | 40 | 5,067 | 8,090 |
| Other [6 countries and (or) localities] | (5) | 230 | 253 | (5) | 166 | 195 |
| Total[4] | 89 | 10,175 | 15,563 | 196 | 15,956 | 22,726 |
| Miami, FL: | | | | | | |
| Egypt | 32 | 3,479 | 4,568 | 18 | 1,935 | 2,811 |
| Mexico | 32 | 1,657 | 2,332 | 12 | 582 | 870 |
| Spain | 105 | 10,339 | 13,027 | 120 | 11,417 | 14,789 |
| Sweden | 270 | 14,482 | 20,293 | 416 | 18,815 | 30,748 |
| Turkey | 81 | 5,675 | 8,396 | 68 | 7,089 | 9,823 |
| Other [7 countries and (or) localities] | (5) | 14 r | 15 | (5) | 25 | 29 |
| Total[4] | 520 | 35,647 r | 48,631 | 633 | 39,863 | 59,070 |
| Milwaukee, WI, Morocco | 6 | 323 | 383 | 7 | 395 | 465 |
| Minneapolis, MN: | | | | | | |
| Ireland | -- | -- | -- | 19 | 1,758 | 1,760 |
| Turkey | 44 | 3,560 | 3,565 | 39 | 3,592 | 3,595 |
| Total[4] | 44 | 3,560 | 3,565 | 59 | 5,350 | 5,355 |
| Mobile, AL: | | | | | | |
| Greece | 45 | 2,824 | 3,436 | -- | -- | -- |
| Turkey | 99 | 5,261 | 6,622 | -- | -- | -- |
| Other [2 countries and (or) localities] | (5) | 23 | 25 | (5) | 59 | 64 |
| Total[4] | 144 | 8,108 | 10,083 | (5) | 59 | 64 |
| New Orleans, LA: | | | | | | |
| China | 84 | 3,584 | 3,659 | 127 | 6,182 | 6,273 |
| Croatia | 19 | 7,250 | 8,556 | 23 | 8,749 | 10,236 |
| Turkey | 40 | 2,447 | 2,551 | 28 | 1,829 | 1,975 |
| Other [5 countries and (or) localities] | 1 | 186 | 192 | 1 | 166 | 423 |
| Total[4] | 144 | 13,467 | 14,957 | 179 | 16,927 | 18,908 |

See footnotes at end of table.

TABLE 18—Continued

U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY CUSTOMS DISTRICT AND COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Customs district and country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| New York City, NY: | | | | | | |
| Canada | -- | -- | -- | 92 | 5,242 | 5,247 |
| Denmark | 20 | 2,282 | 3,051 | 22 | 2,599 | 4,280 |
| Greece | 891 | 36,910 | 47,026 | 735 | 31,082 | 42,764 |
| Malta[7] | 5 | 549 | 551 | -- | -- | -- |
| Spain | 2 | 687 | 848 | (5) | 12 | 14 |
| Turkey[7] | 532 | 23,873 | 30,103 | 339 | 16,678 | 23,648 |
| Other [9 countries and (or) localities] | 1 | 372 r | 443 r | 1 | 532 | 606 |
| Total[4] | 1,450 | 64,672 | 82,021 | 1,188 | 56,145 | 76,559 |
| Norfolk, VA: | | | | | | |
| Brazil | 4 | 2,131 | 2,141 | 8 | 5,259 | 5,289 |
| Bulgaria | 131 | 7,108 | 7,873 | 31 | 2,042 | 2,771 |
| China | 2 | 1,144 | 1,286 | 1 | 855 | 965 |
| Colombia | -- | -- | -- | 64 | 4,595 | 5,530 |
| France | 91 | 32,998 | 33,224 | 117 | 40,975 | 41,157 |
| Greece | 101 | 4,077 | 5,614 | 111 | 6,756 | 8,349 |
| Turkey | -- | -- | -- | 10 | 767 | 1,177 |
| United Kingdom | 1 | 1,091 | 1,207 | 1 | 1,099 | 1,214 |
| Other [4 countries and (or) localities] | (5) | 351 | 394 | (5) | 117 | 131 |
| Total[4] | 331 | 48,900 | 51,738 | 345 | 62,466 | 66,582 |
| Ogdensburg, NY: | | | | | | |
| Canada | 384 | 58,210 | 58,936 | 284 | 43,550 | 45,083 |
| Other [4 countries and (or) localities] | (5) | 25 | 28 | (5) | 11 | 11 |
| Total[4] | 384 | 58,235 | 58,964 | 284 | 43,561 | 45,094 |
| Pembina, ND: | | | | | | |
| Canada | 179 | 24,717 | 25,055 | 169 | 23,466 | 23,744 |
| Germany | (5) | 5 | 5 | -- | -- | -- |
| Total[4] | 179 | 24,721 | 25,060 | 169 | 23,466 | 23,744 |
| Philadelphia, PA: | | | | | | |
| China | 1 | 155 | 214 | 1 | 158 | 236 |
| Croatia | 3 | 891 | 1,094 | 5 | 1,774 | 2,185 |
| Egypt | 25 | 2,721 | 3,732 | 5 | 548 | 772 |
| Greece | 294 | 12,147 | 12,236 | 299 | 12,786 | 12,788 |
| Netherlands | 1 | 1,211 | 1,324 | 1 | 792 | 884 |
| Turkey | 5 | 612 | 741 | 167 | 9,945 | 11,406 |
| Other [3 countries and (or) localities] | (5) | 149 r | 176 r | (5) | 316 | 376 |
| Total[4] | 328 | 17,885 r | 19,517 r | 478 | 26,319 | 28,648 |
| Portland, ME: | | | | | | |
| Canada | 13 | 1,909 | 2,096 | 25 | 2,402 | 2,591 |
| Germany | -- | -- | -- | (5) | 14 | 15 |
| Total[4] | 13 | 1,909 | 2,096 | 25 | 2,416 | 2,607 |
| Providence, RI: | | | | | | |
| Canada | 74 | 4,277 | 4,279 | 243 | 15,120 | 15,124 |
| Greece | 231 | 13,841 | 15,225 | -- | -- | -- |
| Turkey | 140 | 5,702 | 9,106 | 146 | 6,415 | 11,608 |
| Total[4] | 446 | 23,820 | 28,610 | 389 | 21,535 | 26,733 |
| San Diego, CA: | | | | | | |
| Mexico | 85 | 348 | 382 | 2 | 439 | 454 |
| Taiwan | (5) | 5 | 5 | -- | -- | -- |
| Total[4] | 85 | 353 | 387 | 2 | 439 | 454 |

See footnotes at end of table.

TABLE 18—Continued

U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY CUSTOMS DISTRICT AND COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Customs district and country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| San Francisco, CA: | | | | | | |
| China | 1,143 [8] | 54,247 [8] | 71,934 [8] | 1,121 | 56,279 | 75,972 |
| Egypt | 5 | 561 | 737 | 4 | 412 | 598 |
| Mexico | 126 | 6,277 | 8,597 | 204 | 11,941 | 15,576 |
| Thailand | 8 | 987 | 1,440 | 10 | 1,418 | 1,920 |
| Turkey | 2 | 278 | 491 | 8 | 1,026 | 1,382 |
| Other [3 countries and (or) localities] | (5) | 50 | 51 | -- | -- | -- |
| Total[4] | 1,284 [8] | 62,398 [8] | 83,250 [8] | 1,347 | 71,077 | 95,448 |
| Savannah, GA: | | | | | | |
| Egypt | 11 | 1,149 | 1,488 | 9 | 874 | 1,133 |
| Greece | 18 | 1,743 | 1,755 | 124 | 7,834 | 7,909 |
| Portugal | 26 | 1,195 | 1,723 | -- | -- | -- |
| Spain | 27 | 1,696 | 7,082 | 30 | 1,150 | 1,812 |
| Turkey | 23 | 1,115 | 1,644 | 39 | 2,787 | 5,371 |
| Other [8 countries and (or) localities] | 1 | 498 | 589 | 1 | 617 | 769 |
| Total[4] | 106 | 7,395 | 14,281 | 203 | 13,262 | 16,995 |
| Seattle, WA: | | | | | | |
| Canada[6] | 863 | 73,842 | 74,522 | 1,017 | 92,348 | 93,157 |
| China | 386 | 20,103 | 26,430 | 338 | 17,941 | 24,063 |
| Japan | 1 | 268 | 268 | (5) | 198 | 198 |
| Korea, Republic of | -- | -- | -- | 14 | 564 | 840 |
| Other [7 countries and (or) localities] | 1 | 113 | 167 | 1 | 248 | 330 |
| Total[4, 6] | 1,250 | 94,325 | 101,387 | 1,370 | 111,300 | 118,588 |
| St. Albans, VT, Canada | 146 | 22,656 | 23,814 | 287 | 47,553 | 49,117 |
| St. Louis, MO, Other [5 countries and (or) localities] | (5) | 255 | 285 | 1 | 590 | 730 |
| Tampa, FL: | | | | | | |
| Canada | -- | -- | -- | 12 | 480 | 947 |
| China | -- | -- | -- | 11 | 473 | 513 |
| Denmark | 170 | 20,171 | 27,679 | 187 | 20,348 | 25,103 |
| Greece | 246 | 9,771 | 13,605 | 350 | 20,615 | 25,643 |
| Mexico | 12 | 702 | 984 | 37 | 2,378 | 3,206 |
| Sweden | -- | -- | -- | 20 | 900 | 1,203 |
| Turkey | -- | -- | -- | 34 | 2,482 | 2,494 |
| Total[4] | 429 | 30,643 | 42,267 | 651 | 47,676 | 59,110 |
| U.S. Virgin Islands, Turkey | -- | -- | -- | (5) | 11 | 15 |
| Wilmington, NC: | | | | | | |
| Canada | -- | -- | -- | 24 | 1,023 | 1,942 |
| Spain | 14 | 557 | 1,239 | -- | -- | -- |
| Turkey | -- | -- | -- | 9 | 794 | 1,264 |
| Other [2 countries and (or) localities] | (5) | 2 | 2 | (5) | 73 | 78 |
| Total[4] | 14 | 559 | 1,241 | 34 | 1,889 | 3,285 |
| U.S. total[4, 6] | 13,497 [8] | 976,002 [r, 8] | 1,148,153 [r, 8] | 14,731 | 1,127,553 | 1,334,075 |
| San Juan, PR: | | | | | | |
| Colombia | -- | -- | -- | 8 | 959 | 1,559 |
| Dominican Republic | 16 | 1,260 | 1,438 | (5) | 21 | 21 |
| Greece | 100 | 6,636 | 8,437 | -- | -- | -- |
| Mexico | 10 | 1,215 | 1,571 | 12 | 1,410 | 1,830 |
| Portugal | (5) | 62 | 86 | 10 | 1,386 | 1,814 |
| Spain | -- | -- | -- | 44 | 2,251 | 2,251 |
| Turkey | -- | -- | -- | 301 | 17,069 | 18,438 |
| Other [3 countries and (or) localities] | (5) | 81 | 99 | (5) | 131 | 151 |
| Total[4] | 126 | 9,253 | 11,631 | 375 | 23,227 | 26,063 |
| Grand total[4, 6] | 13,623 [8] | 985,255 [r, 8] | 1,159,783 [r, 8] | 15,106 | 1,150,780 | 1,360,138 |

See footnotes at end of table.

TABLE 18—Continued

U.S. IMPORTS FOR CONSUMPTION OF HYDRAULIC CEMENT AND CLINKER, BY CUSTOMS DISTRICT AND COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

[r]Revised. -- Zero.

[1]Table includes data available through April 6, 2020. Includes all varieties of hydraulic cement and clinker. Data are unrounded but are thought to be accurate to no more than three significant digits.

[2]Customs value. The price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

[3]Cost, insurance, and freight (c.i.f.) value. The value represents the customs value plus insurance, freight, and other delivery charges to the first port of entry, but excludes costs of offloading, other U.S. port handling charges, and demurrage.

[4]Data may not add to totals shown because of independent rounding.

[5]Less than ½ unit.

[6]Data are underreported with respect to clinker from Canada and cement from Mexico owing to additional material coming in as "informal entries."

[7]Malta has no cement plants; material is thought to be from Turkey.

[8]Adjusted by the U.S. Geological Survey to credit 27,816 metric tons of portland cement from China, with a customs value of $1,043,100 and a c.i.f. value of $1,068,000, misreported by the importer as sand.

Source: U.S. Census Bureau.

TABLE 19
U.S. IMPORTS FOR CONSUMPTION OF GRAY PORTLAND CEMENT, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| Country or locality | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| Bulgaria | 131 | 7,108 | 7,873 | 31 | 2,042 | 2,771 |
| Canada | 3,053 | 314,671 r | 321,487 r | 3,918 | 394,584 | 408,262 |
| China | 1,988 [4] | 90,661 [4] | 123,672 [4] | 1,969 | 94,363 | 129,764 |
| Colombia | -- | -- | -- | 64 | 4,595 | 5,530 |
| Germany | 1 | 94 | 110 | (5) | 45 | 65 |
| Greece | 2,117 | 91,843 | 118,978 | 1,840 | 85,941 | 117,063 |
| Italy | 195 | 8,755 | 13,633 | 116 | 5,660 | 8,548 |
| Korea, Republic of | 646 | 24,735 | 35,395 | 679 | 28,053 | 40,072 |
| Mexico[6] | 325 | 18,204 | 25,576 | 689 | 41,911 | 59,091 |
| Morocco | 8 | 410 | 485 | 12 | 648 | 970 |
| Portugal | 89 | 7,285 | 7,968 | -- | -- | -- |
| Spain | 503 | 21,535 | 34,546 | 328 | 17,359 | 22,282 |
| Sweden | 270 | 14,482 | 20,293 | 436 | 19,715 | 31,951 |
| Taiwan | 305 | 16,007 | 21,772 | 303 | 15,812 | 21,497 |
| Turkey | 862 | 39,867 | 57,019 | 1,317 | 60,162 | 90,008 |
| Other [5 countries and (or) localities] | (5) | 19 r | 22 | 1 | 56 | 83 |
| Total[6, 7, 8] | 10,493 [4] | 655,675 r, 4 | 788,829 r, 4 | 11,704 | 770,948 | 937,961 |
| Puerto Rico: | | | | | | |
| Colombia | -- | -- | -- | 6 | 442 | 692 |
| Dominican Republic | 8 | 683 | 843 | (5) | 21 | 21 |
| Greece | 75 | 4,818 | 6,167 | -- | -- | -- |
| Turkey | -- | -- | -- | 79 | 6,145 | 7,495 |
| Total[7, 8] | 83 | 5,501 | 7,010 | 85 | 6,608 | 8,208 |
| Grand total[6, 7, 8] | 10,576 [4] | 661,177 r, 4 | 795,839 r, 4 | 11,788 | 777,556 | 946,169 |

rRevised. -- Zero.

[1]Table includes data available through April 6, 2020. Data are unrounded but are thought to be accurate to no more than three significant digits.

[2]The price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

[3]Cost, insurance, and freight (c.i.f.) value. The value represents the customs value plus insurance, freight, and other delivery charges to the first port of entry, but excludes costs of offloading, other U.S. port handling charges, and demurrage.

[4]Adjusted by the U.S. Geological Survey to credit 27,816 metric tons of portland cement from China, with a customs value of $1,043,100 and a c.i.f. value of $1,068,000, misreported by the importer as sand.

[5]Less than ½ unit.

[6]Data are underreported with respect to imports into the El Paso, TX, customs district owing to additional material coming in as "informal entries."

[7]Total imports do not include gray portland cement that was misregistered by importers under the white cement tariff code; these quantities are included in table 20.

[8]Data may not add to totals shown because of independent rounding.

Source: U.S. Census Bureau.

TABLE 20
U.S. IMPORTS FOR CONSUMPTION OF WHITE CEMENT, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3, 4] | Quantity | Customs[2] | C.i.f.[3, 4] |
| Canada | 293 | 37,547 | 38,558 | 305 | 39,924 | 40,784 |
| China | 36 | 3,912 | 5,230 | 27 | 2,196 | 2,808 |
| Denmark | 190 | 22,453 | 30,730 | 209 | 22,947 | 29,383 |
| Egypt | 182 | 19,546 | 26,332 | 130 | 13,641 | 18,435 |
| Greece | -- | -- | -- | 124 | 7,837 | 7,912 |
| Malta[5] | 5 | 549 | 551 | -- | -- | -- |
| Mexico | 277 | 29,863 | 30,785 | 211 | 31,913 | 32,889 |
| Spain | 95 | 9,927 | 12,481 | 100 | 10,496 | 13,381 |
| Thailand | 17 | 2,012 | 2,932 | 19 | 2,652 | 3,617 |
| Turkey[5] | 173 | 15,759 | 24,759 | 264 | 26,637 | 37,164 |
| Other [5 countries and (or) localities] | (6) r | 9 r | 10 r | (6) | 30 | 35 |
| Total[7] | 1,268 | 141,576 | 172,367 | 1,389 | 158,273 | 186,409 |
| Puerto Rico: | | | | | | |
| Mexico | 10 | 1,215 | 1,571 | 12 | 1,410 | 1,830 |
| Portugal | (6) | 62 | 86 | 10 | 1,386 | 1,814 |
| Other [2 countries and (or) localities] | -- | -- | -- | (6) | 56 | 75 |
| Total[7] | 10 | 1,277 | 1,657 | 22 | 2,852 | 3,719 |
| Grand total[7] | 1,278 | 142,853 | 174,024 | 1,411 | 161,126 | 190,127 |

rRevised. -- Zero.

[1]Table includes data available through April 6, 2020. Data are unrounded but are thought to be accurate to no more than three significant digits.

[2]The price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

[3]Cost, insurance, and freight (c.i.f.) value. The value represents the customs value plus insurance, freight, and other delivery charges to the first port of entry, but excludes costs of offloading, other U.S. port handling charges, and demurrage.

[4]Values of less than $100.00 (c.i.f.) per metric ton likely indicate the mistaken total or partial inclusion of data for gray portland or similar cement or clinker. This error happens when the importer records the wrong tariff number with the U.S. Customs and Border Protection. Values that exceed $200 per ton likely indicate misidentified specialty cement, not white cement.

[5]Malta has no cement plants; material is thought to be from Turkey.

[6]Less than ½ unit.

[7]Data may not add to totals shown because of independent rounding.

Source: U.S. Census Bureau.

TABLE 21
U.S. IMPORTS FOR CONSUMPTION OF CLINKER, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons and thousand dollars)

| Country or locality | 2017 | | | 2018 | | |
|---|---|---|---|---|---|---|
| | | Value | | | Value | |
| | Quantity | Customs[2] | C.i.f.[3] | Quantity | Customs[2] | C.i.f.[3] |
| Canada[4] | 673 | 52,468 | 52,791 | 679 | 52,845 | 53,161 |
| China | 5 | 701 | 803 | 6 | 1,569 | 1,673 |
| Egypt | (5) | 48 | 65 | -- | -- | -- |
| France | 72 | 24,833 | 24,877 | 116 | 39,814 | 39,910 |
| Greece | 104 | 5,686 | 5,686 | -- | -- | -- |
| Turkey | 355 | 17,053 | 18,834 | 167 | 9,437 | 11,631 |
| Other [2 countries and (or) localities] | -- | -- | -- | (5) | 21 | 23 |
| Total[4, 6] | 1,209 | 100,789 | 103,056 | 967 | 103,685 | 106,398 |
| Puerto Rico: | | | | | | |
| Dominican Republic | 7 | 475 | 475 | -- | -- | -- |
| Spain | -- | -- | -- | 44 | 2,251 | 2,251 |
| Turkey | -- | -- | -- | 222 | 10,880 | 10,880 |
| Total[6] | 7 | 475 | 475 | 266 | 13,131 | 13,131 |
| Grand total[4, 6] | 1,217 | 101,264 | 103,531 | 1,233 | 116,816 | 119,529 |

-- Zero.

[1]Table includes data available through April 6, 2020. Data are unrounded but are thought to be accurate to no more than three significant digits. For all types of hydraulic cement. Excludes Puerto Rico, which had no imports of clinker for the years shown.

[2]Customs value. The price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise to the United States.

[3]Cost, insurance, and freight (c.i.f.) value. The value represents the customs value plus insurance, freight, and other delivery charges to the first port of entry, but excludes costs of offloading, other U.S. port handling charges, and demurrage.

[4]Data are underreported with respect to additional material coming in as "informal entries."

[5]Less than ½ unit.

[6]Data may not add to totals shown because of independent rounding.

Source: U.S. Census Bureau.

TABLE 22
HYDRAULIC CEMENT: WORLD PRODUCTION, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons)

| Country or locality | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Afghanistan | 87 | 70 | 101 | 180 | 110 |
| Albania | 1,740 | 1,980 | 2,000 e | 2,000 e | 2,000 e |
| Algeria | 19,260 r | 20,250 r | 23,500 r, e | 26,900 e | 27,000 e |
| Angola | 5,100 | 5,240 r | 4,500 r, e | 460 r, e | 5,000 e |
| Argentina | 11,408 | 12,193 r | 10,899 r | 11,960 r | 11,842 |
| Armenia | 422 | 417 | 267 | 356 | 546 |
| Australia[e] | 9,000 | 9,500 | 9,600 | 9,700 | 10,200 |
| Austria | 4,400 | 4,810 | 4,800 r | 4,900 r | 5,200 |
| Azerbaijan | 2,941 | 2,683 | 2,310 | 2,955 | 3,445 |
| Bahrain[e] | 1,300 | 1,300 | 1,400 | 1,500 | 1,500 |
| Bangladesh[2] | 17,000 e | 28,000 e | 32,000 e | 32,000 r | 33,000 e |
| Barbados[e] | 160 | 160 | 160 | 160 | 160 |
| Belarus | 5,617 | 4,638 | 4,503 | 4,490 | 4,519 |
| Belgium | 6,364 | 6,275 | 6,255 | 6,513 r | 6,737 |
| Benin | 1,396 | 1,382 | 1,356 | 1,360 e | 1,370 e |
| Bhutan | 690 | 791 | 940 | 894 | 940 |
| Bolivia | 3,337 | 3,468 | 3,601 | 3,611 | 3,650 e |
| Bosnia and Herzegovina | 840 | 808 | 841 | 910 | 995 |
| Botswana | 15 | 15 | 15 | 15 | 16 e |
| Brazil | 71,254 | 65,283 | 57,557 r | 54,004 | 53,000 e |
| Brunei[e] | 240 | 230 | 250 r | 270 r | 290 |
| Bulgaria | 1,785 | 2,114 | 1,994 | 2,117 | 2,200 e |
| Burkina Faso | 403 | 263 | 300 e | 300 | 310 e |
| Burma[3] | 1,317 | 989 | 2,520 | 5,480 r | 4,160 e |
| Burundi[e] | 70 | 100 | 100 | 45 | 70 |
| Cambodia | 1,400 | 1,700 e | 2,100 e | 3,400 r | 4,900 e |
| Cameroon | 1,300 | 1,600 | 2,600 e | 2,800 r, e | 2,900 e |
| Canada | 11,879 | 12,167 | 11,693 r | 12,710 | 13,554 |
| Chad[e] | 200 | 200 | 250 r | 300 r | 350 |
| Chile[e] | 4,200 | 4,300 | 4,200 | 4,200 | 4,300 |
| China | 2,492,000 | 2,359,000 | 2,410,000 | 2,331,000 | 2,200,000 |
| Colombia | 12,384 | 13,153 | 12,495 | 12,299 r | 12,452 |
| Congo (Brazzaville)[e] | 460 | 700 | 950 | 1,050 | 1,160 |
| Congo (Kinshasa) | 330 | 399 | 253 | 900 | 1,843 |
| Costa Rica[e] | 1,500 | 1,600 | 1,600 | 1,800 | 1,900 |
| Côte d'Ivoire | 2,690 | 3,100 | 3,600 | 3,500 r | 4,000 e |
| Croatia | 2,359 | 2,340 | 2,267 | 2,515 r | 2,500 e |
| Cuba | 1,580 | 1,518 | 1,493 | 1,431 | 1,591 |
| Cyprus | 735 | 788 | 1,019 | 1,319 | 1,358 |
| Czechia | 3,511 | 3,781 | 3,937 | 4,043 | 4,430 |
| Denmark | 2,825 r | 3,047 r | 3,404 r | 3,554 r | 3,343 |
| Djibouti[e] | 170 | 180 | 180 | 190 r | 190 |
| Dominican Republic | 5,018 | 5,181 | 5,171 | 5,254 | 5,280 e |
| Ecuador[e] | 6,600 | 6,200 | 5,600 | 5,700 | 5,800 |
| Egypt | 52,080 | 53,940 | 55,000 | 68,500 r | 81,200 |
| El Salvador[e] | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Eritrea[e] | 230 | 200 | 200 | 210 | 280 |
| Estonia | 447 | 390 | 399 | 503 | 527 |
| Ethiopia[4] | 5,424 | 7,500 e | 8,300 e | 9,000 e | 9,300 e |
| Fiji | 188 | 204 | 219 | 141 | 143 |
| Finland[e] | 1,250 | 1,300 | 1,300 | 1,300 | 1,300 |
| France | 16,400 | 15,600 | 15,900 | 16,900 r | 17,200 e |
| French Guiana | 87 | 76 | 91 | 80 | 80 e |
| Gabon | 180 r | 200 r | 350 r, e | 340 r, e | 490 e |
| Georgia | 1,626 | 1,759 | 1,809 | 2,058 r | 2,092 |
| Germany | 32,099 | 31,150 | 32,737 | 33,991 | 33,633 |
| Ghana | 4,500 e | 3,830 | 4,000 e | 3,800 e | 4,000 e |
| Greece | 5,105 | 5,289 | 6,540 | 6,246 | 6,580 |
| Guadeloupe[e] | 300 | 300 | 300 | 300 | 310 |

See footnotes at end of table.

TABLE 22—Continued
HYDRAULIC CEMENT: WORLD PRODUCTION, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons)

| Country or locality | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Guatemala[e] | 3,500 | 3,500 | 3,600 | 3,700 | 3,800 |
| Guinea | 435 | 500 [e] | 500 | 500 [e] | 520 [e] |
| Guyana | 2 [e] | 100 [e] | 400 [e] | 400 | 410 [e] |
| Haiti[e] | 200 | 200 | 200 | 200 | 200 |
| Honduras[e] | 1,700 | 1,700 | 1,700 | 1,700 | 1,800 |
| Hong Kong[e] | 1,900 | 1,900 | 1,900 | 1,900 | 2,000 |
| Hungary[e] | 1,530 | 1,570 | 1,280 | 1,660 | 1,670 |
| India | 240,000 | 260,000 | 280,000 [e] | 281,000 [e] | 298,000 |
| Indonesia | 56,760 | 59,850 | 62,000 [e] | 69,279 [r] | 75,213 |
| Iran | 66,700 | 58,600 | 55,000 [e] | 55,000 [e] | 58,000 [e] |
| Iraq[e] | 9,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Ireland | 2,200 [r] | 2,980 [r] | 3,100 [r, e] | 3,200 [r, e] | 3,290 [e] |
| Israel | 6,603 | 6,904 | 7,150 | 6,361 | 6,500 [e] |
| Italy | 21,500 [r] | 20,800 [r] | 19,300 | 19,300 [r] | 19,000 [e] |
| Jamaica | 830 | 808 | 911 | 910 [e] | 930 [e] |
| Japan | 57,913 | 54,827 | 53,255 | 55,195 | 55,307 |
| Jordan | 4,400 | 4,500 | 4,800 | 5,060 [e] | 5,130 [e] |
| Kazakhstan | 8,140 | 8,729 | 9,204 | 9,398 | 9,500 [e] |
| Kenya | 5,883 | 6,353 | 6,715 | 6,163 | 5,636 |
| Korea, North | 6,680 | 6,700 | 7,080 | 6,840 | 6,900 [e] |
| Korea, Republic of | 47,048 | 52,044 | 56,747 | 57,400 [r] | 57,500 [e] |
| Kosovo[e] | 480 | 590 | 710 | 840 | 850 |
| Kuwait | 2,800 [r] | 3,100 [r] | 4,500 [r, e] | 4,400 [r, e] | 4,500 [e] |
| Kyrgyzstan | 1,730 | 1,496 | 1,302 | 1,505 [r] | 1,930 |
| Laos | 2,201 | 3,099 | 3,407 [r] | 3,938 [r] | 4,000 [e] |
| Latvia | 1,100 [e] | 1,100 | 1,000 [e] | 989 [r, e] | 1,000 [e] |
| Lebanon | 6,000 [r] | 5,500 [r] | 5,400 [r] | 5,500 [r] | 5,600 |
| Liberia | 295 | 298 | 241 | 285 | 314 |
| Libya | 7,000 | 5,000 | 4,250 [r] | 6,560 [r] | 6,200 |
| Lithuania | 903 | 980 | 1,010 | 1,023 | 1,151 |
| Luxembourg | 1,058 | 1,080 | 1,100 [e] | 1,100 [e] | 1,100 [e] |
| Macau | 590 [e] | 600 [e] | -- | -- | -- |
| Macedonia | 660 | 672 | 855 | 901 | 921 |
| Madagascar | 150 [r] | 150 [r] | 150 [r, e] | 180 [r, e] | 210 [e] |
| Malawi | 270 | 280 | 420 [e] | 211 [r] | 232 |
| Malaysia | 24,280 | 24,710 | 22,330 | 18,800 [r] | 20,000 [e] |
| Mali | 660 | 630 | 630 [e] | 630 [e] | 660 [e] |
| Martinique[e] | 150 | 150 | 150 | 150 | 150 |
| Mauritania | 870 | 860 | 630 [r] | 640 [r] | 670 |
| Mexico | 36,597 | 39,613 | 40,577 | 41,601 | 48,328 |
| Moldova | 1,220 [e] | 1,045 | 975 | 1,116 | 1,200 [e] |
| Mongolia | 411 | 410 | 432 | 675 | 934 |
| Morocco | 14,320 [r] | 14,460 [r] | 14,000 [r, e] | 15,000 [r, e] | 15,000 [e] |
| Mozambique | 1,512 [5] | 1,585 [5] | 2,446 | 2,350 | 2,400 [e] |
| Namibia | 731 | 796 | 778 | 780 [e] | 780 [e] |
| Nepal | 3,100 | 3,910 [r] | 5,000 [r, e] | 6,000 [r, e] | 9,000 [e] |
| Netherlands | 2,610 | 2,260 | 2,260 [e] | 2,300 [e] | 2,350 [e] |
| New Caledonia | 106 | 112 | 112 | 104 | 86 |
| New Zealand[e] | 1,100 | 1,200 | 900 | 360 | 450 |
| Nicaragua[e] | 700 | 700 | 700 | 900 | 910 |
| Niger | 21 | 51 | 51 [e] | 51 [e] | 52 [e] |
| Nigeria[e] | 20,000 | 21,000 | 22,000 | 19,000 | 21,000 |
| Norway[e] | 1,700 | 1,800 | 1,850 | 1,900 | 1,950 |
| Oman[e] | 5,100 | 5,300 | 5,500 | 5,700 [r] | 6,000 |
| Pakistan | 31,960 | 33,232 | 37,020 | 38,900 | 40,900 |
| Panama[e] | 2,190 | 2,200 | 2,200 | 1,900 | 2,000 |
| Papua New Guinea[e] | 200 | 200 | 200 | 200 | 200 |
| Paraguay[e] | 1,000 | 1,200 | 1,300 | 1,400 | 1,400 |
| Peru | 10,676 | 10,410 | 10,094 | 9,980 | 10,049 |

See footnotes at end of table.

TABLE 22—Continued
HYDRAULIC CEMENT: WORLD PRODUCTION, BY COUNTRY OR LOCALITY[1]

(Thousand metric tons)

| Country or locality | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Philippines | 21,305 | 24,050 | 25,000 e | 26,000 e | 26,000 e |
| Poland | 15,534 | 15,206 | 15,782 | 17,254 r | 18,957 |
| Portugal | 5,420 r | 5,620 r | 4,200 e | 4,700 r, e | 5,200 e |
| Qatar | 6,080 r | 6,880 r | 7,500 r, e | 7,200 r, e | 6,600 e |
| Reunion | 350 | 250 | 170 r, e | 180 r, e | 200 e |
| Romania | 7,621 | 8,356 | 8,038 | 8,442 r | 8,951 |
| Russia | 69,139 | 62,104 | 54,935 | 54,721 r | 53,678 |
| Rwanda[e] | 140 | 180 | 350 | 390 | 400 |
| Saudi Arabia | 57,223 | 61,900 | 55,943 | 47,134 | 42,181 |
| Senegal | 4,899 | 4,615 | 5,149 | 5,197 | 5,412 |
| Serbia | 1,605 | 1,654 | 1,801 | 1,908 | 1,950 e |
| Sierra Leone | 336 | 324 | 320 e | 324 e | 325 e |
| Slovakia | 3,319 | 3,466 | 3,518 | 3,782 | 3,800 e |
| Slovenia | 706 | 600 e | 700 e | 660 e | 680 e |
| South Africa | 12,068 | 12,992 | 13,000 | 14,000 e | 15,000 e |
| Spain | 14,587 | 15,000 e | 15,000 e | 14,500 | 14,600 e |
| Sri Lanka | 1,885 | 2,287 | 2,695 | 2,819 | 2,842 |
| Sudan | 3,478 | 3,708 | 4,013 | 4,326 | 4,053 |
| Suriname | 70 r | 70 r | 20 r | 30 r | 30 |
| Sweden[e] | 2,500 | 2,800 | 2,800 | 2,800 | 3,300 |
| Switzerland | 4,790 | 4,390 | 4,710 | 4,500 | 4,300 e |
| Syria | 1,850 r | 1,850 r | 1,600 r | 1,600 r, e | 1,600 e |
| Taiwan | 14,629 r | 13,445 | 12,126 | 10,876 | 10,939 |
| Tajikistan | 1,150 | 1,418 | 1,361 | 3,117 r | 3,844 |
| Tanzania | 2,809 | 3,140 r, e | 4,071 | 4,200 | 4,509 |
| Thailand | 36,150 | 36,216 | 39,940 | 33,587 | 36,000 e |
| Togo | 1,700 e | 1,500 | 1,500 e | 1,500 e | 1,600 e |
| Trinidad and Tobago | 837 | 840 | 721 | 670 | 650 e |
| Tunisia | 9,127 | 9,507 | 9,028 | 8,053 | 7,850 |
| Turkey | 71,239 | 71,419 | 75,403 | 80,552 | 72,544 |
| Turkmenistan[e] | 2,900 | 3,300 | 3,500 | 3,600 | 3,800 |
| Uganda | 2,141 | 2,340 | 2,494 | 2,498 | 2,500 e |
| Ukraine | 8,636 | 8,511 | 9,023 | 9,003 | 8,930 |
| United Arab Emirates | 20,500 r | 20,500 r | 22,000 e | 23,000 e | 25,000 e |
| United Kingdom | 8,958 | 9,235 r | 9,370 r | 9,359 r | 9,200 e |
| United States[6] | 83,124 | 84,940 | 85,153 | 86,799 | 86,999 |
| Uruguay | 830 r | 860 r | 740 | 817 | 812 |
| Uzbekistan | 7,350 | 7,900 e | 8,222 r | 8,497 r | 8,600 e |
| Venezuela | 7,940 | 8,210 | 7,300 e | 8,030 e | 7,000 e |
| Vietnam | 60,982 | 67,645 | 74,457 | 78,843 | 90,200 e |
| Yemen | 3,190 r | 2,530 r | 2,400 e | 1,950 r, e | 1,980 e |
| Zambia | 1,900 e | 1,800 e | 2,000 e | 2,210 r | 2,751 |
| Zimbabwe | 1,280 r | 1,510 r | 1,650 r | 1,750 | 1,800 e |
| Grand total[e] | 4,150,000 | 4,070,000 | 4,150,000 | 4,110,000 r | 4,050,000 |

[e]Estimated. [r]Revised. -- Zero.

[1]Table includes data available through August 20, 2019. All data are reported unless otherwise noted. Grand totals and estimated data are rounded to no more than three significant digits; may not add to totals shown. Data may include clinker exports for some countries.

[2]Production is based on fiscal year, with a starting date of June 30 of the year shown.

[3]Production is based on fiscal year, with a starting date of March 31 of the year shown.

[4]Production is based on fiscal year, with a starting date of July 7 of the year shown.

[5]Cement sales from Cimentos de Moçambique SARL (Sociedade Anónima de Responsabilidade Limitada) only.

[6]Portland and masonry cements only. Includes a small (less than 0.5% per year) component of double-counting where portland cement (not clinker) is consumed to make masonry cement; the precise amount of double-counting cannot be determined because of the involvement of portland cement stockpiles.