



2012 Minerals Yearbook

GYPSUM

GYPSUM

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In 2012, the United States ranked second worldwide in the production of crude gypsum, with 15.8 million metric tons (Mt) of production and a reported value of \$121 million. World production of gypsum in 2012 was 231 Mt, of which China was the world's leading producer and consumer, with an estimated 128 Mt of crude gypsum (table 7). As a result of the recovery in the U.S. economy, especially in the residential construction sector, 2012 crude production tonnage increased by approximately 50% from that of 2011. Greater demand for and the higher production level of crude gypsum also accounted for an increase in value of 41% (table 1). Calcined gypsum production increased by 7% to 12.8 Mt in 2012 compared with 11.9 Mt produced in 2011.

The sale of synthetic gypsum increased 3% to 12.1 Mt in 2012 (American Coal Ash Association, 2013). Coal-burning powerplants in the United States are required to operate sulfur dioxide scrubbing systems, which results in the precipitation of large amounts of byproduct gypsum. Because byproduct gypsum is available at a substantially lower cost than its mined counterpart, a number of wallboard production facilities have been constructed adjacent to coal-fired powerplants.

Production

Industry data for gypsum were collected by the U.S. Geological Survey (USGS) from semiannual and annual surveys of gypsum operations and from quarterly data provided by the Gypsum Association. In 2012, the USGS annual survey canvassed 112 gypsum production operations that accounted for all domestic output of crude, calcined, and byproduct gypsum. Data were available for all the operations through this survey, the Gypsum Association, the American Coal Ash Association, State agencies, and Federal agencies. Some production was estimated, based on employment records published by the Mine Safety and Health Administration.

The United States was the second leading producer of gypsum in 2012, accounting for 7% of global output (table 7). During 2012, crude gypsum in the United States was mined by 47 companies at 53 mines in 17 States (table 2). The leading crude gypsum-producing States were, in descending order, Texas, Oklahoma, Nevada, California, Indiana, and Iowa, which together accounted for 69% of total domestic output.

The U.S. gypsum industry consisted primarily of a few large, vertically integrated companies that mined gypsum and manufactured wallboard, plaster, and other gypsum products. Companies with the highest production levels of crude gypsum were USG Corp. (USG) with eight mines, Georgia Pacific LLC (GP) with seven mines, National Gypsum Co. with six mines, CertainTeed Corp. with six mines, American Gypsum with three mines, Temple-Inland, Inc. (TI) with two mines, and PABCO

Gypsum with one mine. In 2012, these seven companies produced 62% of U.S. crude gypsum.

In 2012, domestic output of calcined gypsum increased by 7% to 12.8 Mt valued at \$366 million (table 1); 10.9 Mt of calcined gypsum was used in the production of plasters and prefabricated products (table 3).

In addition to mined gypsum production, synthetic gypsum was generated as a byproduct of various industrial processes. The primary source of synthetic gypsum was flue gas desulfurization (FGD) at coal-fired electric powerplants. Smaller quantities of synthetic gypsum were derived as byproducts of chemical processes such as acid neutralization, citric acid production, sugar production from sugar beets, and titanium dioxide production. Synthetic gypsum was used as a substitute for mined gypsum, principally for wallboard manufacturing, cement production, and agricultural purposes, in descending order of importance.

Sixteen synthetic gypsum producers sold 12.1 Mt of synthetic gypsum during 2012, with an estimated value of \$18.2 million. Of all the synthetic gypsum sold and used, 63% was used for wallboard production, 15% for cement and concrete manufacture, 10% for mining applications, 5% for agricultural purposes, and the remaining 7% for a variety of other applications. Approximately 50% of the synthetic gypsum produced in 2012 was neither sold nor used, and in most cases was discarded (American Coal Ash Association, 2013).

For 2012, gypsum-derived products, including agricultural products, cement, plasters, and wallboard totaled 12.5 Mt with a value of \$2.31 billion. This represented a production increase of 10% from the 11.4 Mt produced in 2011 and a 50% increase in value from \$1.54 billion (table 3). The large increase in value was mainly attributed to higher prices assessed for prefabricated products and portland cement.

During 2012, eight companies manufactured gypsum wallboard products at 67 plants in the United States. Approximately 18.9 million square feet (1.8 million square meters) of wallboard products was shipped, a 10% increase compared with 2011 (table 4).

The wallboard industry expanded rapidly between 2003 and 2006. American Gypsum, CertainTeed, Lafarge North America Inc. (Lafarge NA), National Gypsum, and USG expanded their existing wallboard operations or opened new ones during this time, increasing their wallboard production capacities by more than 1 billion square feet. The decline in the U.S. housing market that began in 2007 and continued through 2010 resulted in flat and declining sales for most gypsum producers, and led to layoffs and the idling of wallboard production plants (Crangle, 2011). Beginning in late 2010 and continuing through 2012, however, housing starts, an indicator of gypsum consumption in residential construction, increased each year. In 2012, housing

starts increased by 28% from those of 2011 (U.S. Census Bureau, 2012).

Consumption

In 2012, U.S. apparent consumption of domestic gypsum was more than 31.1 Mt, an increase of 20% compared with that of 2011. Domestic sources (mined crude plus an estimated 12.1 Mt of synthetic gypsum produced) met approximately 90% of domestic consumption requirements; imports, totaling 3.25 Mt, satisfied the remaining need. In 2012, approximately 51% of the gypsum consumed in the United States came from synthetic sources, 3% more than that of 2011. Synthetic gypsum continued to be a significant component of the overall gypsum marketplace in 2012. This was largely the result of the lower costs associated with the purchase and transportation of FGD gypsum, which is often available near the same urban centers where wallboard production facilities are located.

Gypsum output is categorized as either calcined or uncalcined (table 3). Calcined gypsum was produced domestically from mined crude and synthetic gypsum to manufacture wallboard and plaster products. Uncalcined gypsum was used to produce portland cement and in agriculture. Miscellaneous uses, such as athletic field markings, accounted for less than 1% of consumption.

In 2012, more than 99% of calcined gypsum was used in the production of prefabricated products, most of which consisted of wallboard (table 3). Type X gypsumboard, so named because of extra fire retardation qualities, consumed 42% of calcined gypsum. Half-inch wallboard accounted for 40% of total calcined gypsum consumption. Water- and moisture-resistant board, typically used in bathroom and kitchen walls, accounted for 10% of calcined gypsum. Other wallboard, including lath, mobile-home wallboard, predecorated wallboard, sheathing, and veneer base composed most of the balance (table 4). Metropolitan areas in the South Atlantic, West South Central, East North Central, Pacific, and Middle Atlantic regions were, in decreasing order, the leading sales areas for gypsumboard products (table 4).

As a result of improved economic conditions and a corresponding increase in demand from the construction industry for concrete, uncalcined gypsum consumption in the United States increased by 13% in 2012 to 1.56 Mt. About 1.04 Mt, or 67%, was consumed in portland cement production (table 3). Gypsum is added to cement to retard its setting time and accounts for 2% to 4%, by weight, of cement output (Roskill Information Services Ltd., 2009, p. 320). Most of the remainder of the uncalcined gypsum consumed, about 519,000 metric tons (t), was used for agricultural purposes, which was an increase of 20% from that of 2011. Finely ground gypsum rock was used in agriculture and other industries to neutralize acidic soils, to improve soil permeability, to add nutrients, to stabilize slopes, and to provide catalytic support for maximum fertilizer benefits. Small quantities of high-purity gypsum also are used in a wide range of industrial applications, including the production of food, glass, paper, and pharmaceuticals.

Recycling

Gypsum waste generated by the wallboard manufacturing process may be recycled. The gypsum core and paper covering are separated, and the gypsum is reinjected with new material into the manufacturing stream.

Several million tons of gypsum waste are generated every year by building demolition, wallboard installation, and wallboard manufacturing. Because labor expenses are higher than wallboard prices, construction costs are lowered when full pieces of uncut wallboard are used in place of multiple, smaller remnants. As a result, between 10% and 12% of the wallboard used in new construction and renovation is discarded as scrap. Only a small portion of this waste has been recycled. In 2010, the Massachusetts Department of Energy and Environmental Affairs banned the disposal of clean wallboard from State waste disposal facilities (Massachusetts Department of Energy and Environmental Affairs, 2011). To date, no other State has instituted a similar regulation that addresses the disposal of wallboard. As landfill space becomes more scarce, recycling is expected to increase. In addition to recycling scrap in wallboard plants, wallboard scrap may also be ground and used as a soil conditioner.

Wallboard manufacturers and the construction industry have been exploring ways to return scrap and waste wallboard to plants for recycling. Other potential markets for recycled gypsum include cement production, as a stucco additive, sludge drying, water treatment, grease absorption, and marking of athletic fields. Until costs and legislation associated with the disposal of scrap gypsum in landfills becomes more restrictive, recycling will likely continue to remain a low priority within the industry.

Prices

In 2012, the average unit values (free on board, mine or plant) reported by U.S. producers were \$7.69 per metric ton for crude gypsum and \$28.66 per ton for calcined gypsum (table 1). The average unit value for plaster reported by domestic producers during the year was \$426 per ton (table 3). The average unit value of uncalcined gypsum used primarily for agricultural purposes was approximately \$44.97 per ton, and that used in cement production was about \$18.44 per ton (table 3).

During 2012, prices for gypsum wallboard increased by 38% and total wallboard production increased by 10% (table 4). The combined average price of ½-inch wallboard for 20 major U.S. metropolitan cities in 2012 was \$245 per 100 square meters (\$228 per 1,000 square feet). From January 2012 to January 2013, prices for ½-inch regular wallboard decreased slightly (Engineering News-Record, 2012, 2013).

Average ½-inch wallboard prices during 2012 were lowest in St. Louis, MO (\$107 per 100 square meters or \$100 per 1,000 square feet), followed by Detroit, MI (\$113 per 100 square meters or \$105 per 1,000 square feet), and Cleveland, OH (\$129 per 100 square meters or \$120 per 1,000 square feet). The highest average wallboard prices in 2012 were in Boston, MA (\$394 per 100 square meters or \$366 per 1,000 square feet), followed by Philadelphia, PA (\$300 per 100 square meters or \$279 per 1,000 square feet), and Seattle, WA (\$288 per

100 square meters or \$268 per 1,000 square feet) (Engineering News-Record, 2013).

Foreign Trade

In 2012, the United States led the world in international trade of gypsum and gypsum products (tables 5, 6). The United States imported crude gypsum from 10 countries and exported to 72 countries and territories, 82% of which went to Canada.

Imports of crude gypsum in 2012 were slightly less than those of 2011 and accounted for 11% of apparent consumption. Canada and Mexico accounted for 75% of imported gypsum, and imports from Spain supplied most of the remainder. The majority of imports from Canada went to east coast plants, and Mexican sources chiefly served the west coast. Most of the crude gypsum imported by the United States from Mexico was produced by *Compania Minera Caopas, S.A. de C.V.*, and *Compania Occidental Mexicana, S.A. de C.V.*, in Baja California Sur, both of which operate mines on the Baja California Peninsula (*Compania Occidental Mexicana S.A. de C.V.*, 2005; *Compania Minera Caopas, S.A. de C.V.*, 2010). Almost all gypsum imported from Canada came from Nova Scotia. The completion of large wallboard manufacturing plants near coal-fired powerplants along the east coast may reduce gypsum imports in the future.

Wallboard exports increased by 3% in 2012, totaling about 856,000 t valued at \$154 million; approximately 93% went to Canada. Wallboard imports increased by 26% in 2012, totaling 297,000 t valued at \$49.4 million.

World Industry Structure

Global crude gypsum production in 2012 was estimated to be 231 Mt, a 3% increase compared with that of 2011, when production totaled 223 Mt (table 1). In 2012, 82 countries produced gypsum, with the top 10 producers accounting for 84% of total world production (table 7). China was the leading producer of crude gypsum in 2012 with an estimated 128.0 Mt, followed by the United States with 15.8 Mt, Iran with 13 Mt, Thailand with 9.0 Mt, Spain with 7.1 Mt, Japan with 5.5 Mt, Mexico with 4.7 Mt, and Italy with 4.1 Mt.

North American production accounted for 10% of total crude gypsum production. Although the use of gypsum wallboard increased worldwide, only industrialized nations used gypsum primarily for wallboard products. In developing countries, especially in Asia and the Middle East, most gypsum was used in the production of cement or plaster products. World production may have been underestimated, because output by some foreign gypsum producers was used to manufacture products onsite, which may not have been reported. Additionally, production from small deposits in developing nations was intermittent and in many cases unreported.

Worldwide, the leading use of gypsum is in the manufacture of cement and concrete. In 2008, the last year worldwide end-use data were available, cement manufacture accounted for up to 60% of worldwide gypsum consumption, and plaster products, including wallboard, accounted for approximately 30% of all consumption (Roskill Information Services Ltd., 2009, p. 320, 330).

As a low-value, high-bulk mineral commodity mined from deposits widely distributed throughout the world, gypsum tended to be consumed within the many countries where it was produced. Less than 20% of the world's crude gypsum production was estimated to enter international trade. Only a few countries, such as Canada, Mexico, Spain, and Thailand, were major crude gypsum exporters; of these, Canada and Mexico were significant exporters because their large deposits were near wallboard markets in the United States.

Estimated world production capacity for gypsum wallboard in 2012 exceeded 17 billion square meters per year (about 183 billion square feet per year) at more than 250 plants worldwide. Approximately 20% of this capacity was in the United States; Asia and Western Europe each accounted for about 20% of capacity.

World Review

Asia.—Boral Ltd., Australia's leading building and construction materials producer, remained the leading supplier of wallboard in Asia in 2012. Boral operated 20 production facilities in 8 countries and provided exports to an additional 30 countries (Boral Ltd., 2013, p. 24).

Europe.—Lafarge Group (France) initiated steps to sell most of its gypsum operations in an attempt to focus its organizational efforts toward aggregates, cement, and concrete operations (Lafarge Group, 2012, p. 3). In 2012, Saint-Gobain Group's gypsum-related operations increased sales by 3%. The company's gypsum operations comprised more than 12,000 employees at 75 gypsum quarries and 130 gypsum-product facilities worldwide (Saint-Gobain Group, 2013, p. 17, 55).

Canada.—Canada produced 2.55 Mt of crude gypsum, a 4% increase from 2.45 Mt in 2011. About 1.02 Mt, or 40% of Canada's production, was exported to the United States. In 2012, CGC Corp. (a subsidiary of USG) redeployed its two self-unloading ocean vessels, which had been used to transport gypsum from quarries in Nova Scotia to U.S. east coast wallboard plants, to ship iron ore. The redeployment was a result of lower demand for crude gypsum as a result of more readily available synthetic gypsum in the United States (USG Corp., 2013, p. 2, 27).

China.—In 2012, Beijing New Building Materials (BNBM), the largest gypsumboard producer in the world, operated 21 wallboard plants in China with an estimated production capacity of 1.2 billion square meters per year. The Knauf Group (Germany) expanded its production capacity at its China-based operations by 50% (Global Gypsum, 2012). Wallboard has become the standard building material in commercial construction for nonload-bearing walls and ceilings in China, with an estimated 80% of all domestically consumed wallboard used in commercial construction (Global Gypsum Magazine, 2011). Because gypsum use in residential construction is lower, the potential for substantial growth in wallboard consumption exists in China (Rapoza, 2013).

Imports of corrosive wallboard from China into the United States continued to be an issue. The U.S. Consumer Product Safety Commission received approximately 4,000 reports of possible corrosive wallboard from residents in 43 States,

the District of Columbia, American Samoa, and Puerto Rico (U.S. Consumer Product Safety Commission, 2014). Sulfide gases emitted from the problematic drywall were suspected of damaging copper wiring and plumbing, and also posed human health concerns (Global Gypsum Magazine, 2010). Following several years of complaints regarding corrosive wallboard imported from China, a class-action settlement between owners of approximately 12,000 and 20,000 affected single-family homes, most of which are located in Gulf Coast and southern U.S. States, and Chinese wallboard manufacturer, Knauf Plasterboard Tianjin Co. Ltd., was pending at yearend in U.S. Federal court.

Japan.—Yoshino Gypsum Co. Ltd., which opened Japan's first wallboard factory in 1921, was the leading wallboard producer with 16 plants throughout Japan. The company's combined capacity of 350 million square meters per year accounted for about 80% of Japan's total wallboard output (Global Gypsum Magazine, 2012).

Mexico.—In 2012, gypsum production in Mexico was 4.69 Mt, a 22% increase from that of 2011. About 1.42 Mt, or 30% of Mexico's 2012 crude gypsum production, was exported to the United States. In 2012, USG Mexico, S.A. de C.V., the leading manufacturer of wallboard in Mexico with three manufacturing facilities, produced more than 55% of Mexico's wallboard and reported net sales of \$166 million (USG Corp., 2013).

Outlook

Residential housing prices increased nationwide in 2012 by approximately 9% from those in 2011 (Standard and Poor's Financial Services, 2014). A combination of increased housing starts, up by more than 20% from 2011, coupled with historically low 30-year mortgage interest rates, provided a significant boost to the housing sector in 2012, and by extension, the wallboard marketplace (Irwin, 2012; Freddie Mac, 2014). Because the residential housing market is responsible for approximately 60% of the consumption of gypsum products, a key economic indicator used by the gypsum and wallboard industries is the number of new housing starts, as measured by the issuance of new building permits. Since 1959, the average number of housing starts, including multidwelling units, is 1.5 million per year. Annual housing starts averaged about 1.8 million during the 5 years preceding the recessionary years, which began in 2007. Housing starts in 2011 and 2012 were 609,000 and 781,000, respectively (U.S. Census Bureau, 2013). Neither the high nor the low rates were sustainable. As the surplus of residential real estate dwellings constructed before 2009 is drawn down, the Nation's annual population growth of more than 3,000,000, alone, may necessitate an increase in residential construction in the near future (Irwin, 2011; Zibel and Bater, 2011; U.S. Census Bureau, 2012).

The future of FGD gypsum, following more than 20 years of large annual growth rates, may begin to slow as significant supplies of comparatively less expensive and cleaner burning natural gas compete with coal in the generation of electrical power. Should the increased production and consumption of domestic shale gas continue, this could lead to a corresponding decrease in coal consumption, and with it, a decrease in the production of synthetic gypsum. Shale-gas production in 2012

was 10.4 billion cubic feet (Bcf), which was 30% more than that of 2011, and more than eight times the 1,293 Bcf produced in 2007 (U.S. Energy Information Administration, 2013). The changeover of crude to synthetic gypsum likely will be limited to FGD plants within close proximity to wallboard production facilities or to new wallboard plants that would be constructed adjacent to existing FGD plants.

Production of synthetic gypsum may begin to stabilize. In the long term, as disposal areas fill and the opening of new disposal sites becomes increasingly difficult, power companies may consider converting electrical generation plants to operate on natural gas, especially if shale-gas supplies continue to offer an economically attractive alternative to coal. Because the retrofitting of coal-fired electric powerplants with desulfurization systems has been accomplished for most plants, and less expensive natural gas is available for electrical generation, FGD production may stabilize. Nevertheless, the use of synthetic gypsum by U.S. wallboard manufacturers is likely to continue.

The U.S. gypsum industry has been moving toward the use of large-capacity wallboard plants supplied from multiple sources, including synthetic gypsum from coal-fired powerplants. These larger wallboard plants have been built in regions of high population and growth, which are the areas of highest consumption. Older and less efficient crude gypsum-fed plants may find it increasingly difficult to compete, but could see a revival with regard to the possibility of lesser amounts of consumed FGD. In response to increased public awareness, the gypsum industry may boost the recycling of scrap gypsum in its raw materials streams. The industry may also increase the use of labels, such as the Scientific Certification System Green Cross, which certifies the presence of recycled and recovered content in each product.

Industry trends indicate significant developments abroad in the coming decade. The pace and magnitude of wallboard plant construction in Asia, particularly in China, India, and Thailand, suggest that the continent, with billions of potential consumers, will likely become one of the world's leading gypsum wallboard markets. Should the economic conditions in the United States more favorably affect the U.S. housing sector, and in turn domestic consumption for gypsum, Canada's gypsum production could increase. Elsewhere, wallboard production capacity growth and the recognition of the convenience and economy of wallboard as a building material in Central America, Europe, India, and South America means that wallboard manufacturing may require increased gypsum production in future years. A decline in national and global economic conditions, however, could hamper such growth.

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TABLE 1
SALIENT GYPSUM STATISTICS¹

(Thousand metric tons and thousand dollars)

	2008	2009	2010	2011	2012
United States:					
Crude:					
Production:					
Quantity	12,300	11,500 ^r	10,200 ^r	10,500 ^r	15,800
Value	91,200	84,500 ^r	70,600 ^r	86,200 ^r	121,000
Imports for consumption	7,330	4,220	3,330	3,330	3,250
Synthetic gypsum sales ²	9,660	8,120	10,700	11,800	12,100
Calcined:					
Production:					
Quantity	17,900	13,400	12,400 ^r	11,900	12,800
Value	674,000	471,000	366,000 ^r	340,000	366,000
Products sold, value	2,500,000	1,480,000	1,530,000	1,470,000	2,230,000
Exports, value	47,400	37,800	42,200	48,200	39,200
Imports for consumption, value	7,240	6,800	7,180	7,780	7,150
World, production	236,000 ^r	230,000 ^r	222,000 ^r	223,000 ^r	231,000 ^c

^cEstimated. ^rRevised.

¹Data are rounded to no more than three significant digits.

²Source: American Coal Ash Association.

TABLE 2
CRUDE GYPSUM MINED IN THE UNITED STATES, BY STATE¹

State	2011			2012		
	Active mines	Quantity (thousand metric tons)	Value (thousands)	Active mines	Quantity (thousand metric tons)	Value (thousands)
Arizona, Colorado, New Mexico	8 ^r	1,100 ^r	\$8,310 ^r	7	1,160	\$10,600
Nevada and Utah	7	854	7,170	6	1,800	18,800
Arkansas, and Louisiana	2	W	W	2	W	W
California	6 ^r	993 ^r	12,000	6	1,380	9,640
Iowa, Indiana and North Carolina	8 ^r	2,080 ^r	16,000 ^r	8	3,260	23,500
Michigan	3	345	2,670	3	322	2,250
South Dakota and Wyoming	2	W	W	3	W	W
Kansas, Oklahoma, Texas	16 ^r	4,330 ^r	33,100 ^r	18	6,750	47,300
Total	52 ^r	10,500 ^r	86,200 ^r	53	15,800	121,000

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
 GYPSUM PRODUCTS (MADE FROM DOMESTIC, IMPORTED, AND
 SYNTHETIC GYPSUM) SOLD OR USED IN THE UNITED STATES, BY USE¹

(Thousand metric tons and thousand dollars)

Use	2011		2012	
	Quantity	Value	Quantity	Value
Uncalcined:				
Portland cement	951	16,000	1,040	19,200
Agriculture and miscellaneous ²	434	25,700	519	23,300
Total	1,390	41,700 ^r	1,560	42,500
Calcined:				
Plasters	75	26,700	75	32,000
Prefabricated products ³	9,910	1,470,000	10,900	2,230,000
Total	9,980	1,500,000	11,000	2,270,000
Grand total	11,400	1,540,000	12,500	2,310,000

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes synthetic gypsum.

³Includes weight of paper, metal, or other materials and some synthetic gypsum.

TABLE 4
 PREFABRICATED GYPSUM PRODUCTS SOLD OR USED IN THE UNITED STATES¹

Product	2011			2012		
	Quantity (thousand square feet)	Quantity ² (thousand metric tons)	Value (thousands)	Quantity (thousand square feet)	Quantity ² (thousand metric tons)	Value (thousands)
Veneer base	199,000	144	\$23,900	199,000	144	\$29,400
Sheathing	389,000	283	46,700	385,000	280	77,100
Regular gypsumboard:						
³ / ₈ -inch	389,000	123	20,400	360,000	114	20,200
¹ / ₂ -inch	8,620,000	3,910	647,000	9,680,000	4,390	823,000
⁵ / ₈ -inch	59,900	35	5,840	292,000	172	35,100
1-inch	44,200	40	6,620	45,400	41	19,300
Other ³	177,000	80	18,600	--	--	--
Total	9,290,000	4,190	698,000	10,400,000	4,720	897,000
Type X gypsumboard	5,770,000	4,190	462,000	6,240,000	4,530	899,000
Predecorated wallboard	W	W	W	W	W	W
⁵ / ₁₆ -inch mobile home board	W	W	W	W	W	W
Water- and moisture-resistant board	1,270,000	919	202,000	1,440,000	1,050	288,000
Other	118,000	86	12,000	128,000	93	12,800
Grand total	17,200,000	9,910	1,470,000	18,900,000	10,900	2,230,000

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

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes weight of paper, metal, or other materials.

³Includes ¹/₄-, ⁷/₁₆-, and ³/₄-inch gypsumboard.

TABLE 5
IMPORTS FOR CONSUMPTION OF CRUDE GYPSUM, BY COUNTRY¹

(Thousand metric tons and thousand dollars)

Country	2011		2012	
	Quantity	Value	Quantity	Value
Canada ²	1,470	19,800	1,020	12,900
Mexico	1,230	11,900	1,420	14,600
Spain	628	11,900	809	12,800
Other	2	416	1	286
Total	3,330	44,000	3,250	40,600

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes anhydrite.

Source: U.S. Census Bureau.

TABLE 6
U.S. GYPSUM AND GYPSUM PRODUCTS FOREIGN TRADE¹

(Thousand metric tons and thousand dollars)

Year	Crude ²		Plasters ³		Boards ⁴		Other, value ⁵	Total, value
	Quantity	Value	Quantity	Value	Quantity	Value		
Exports:								
2011	316	20,000	307	48,200	833	149,000	68,600	286,000
2012	408	28,800	140	39,200	856	154,000	57,000	279,000
Imports for consumption:								
2011	3,330	44,000	14	7,780	235	30,800	34,700	117,000
2012	3,250	40,600	17	7,150	297	49,400	42,400	140,000

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Data are for "Gypsum, anhydrite," Harmonized Tariff Schedule of the United States (HTS) code 2520.10.0000.

³Data are for "Plasters," HTS code 2520.20.0000.

⁴Data are for "Boards, sheets, panels, tiles, and similar articles, not ornamented—Faced or reinforced with paper or paperboard only," HTS code 6809.11.0000.

⁵Data are for "Boards, sheets, panels, tiles, and similar articles, not ornamented: Other," HTS code 6809.19.0000, and "Other articles," HTS code 6809.90.0000.

Source: U.S. Census Bureau.

TABLE 7
GYPSUM: WORLD PRODUCTION, BY COUNTRY^{1,2}

(Thousand metric tons)

Country ³	2008	2009	2010	2011	2012 ^c
Afghanistan	49	46	63	62 ^e	65
Albania ^e	78 ⁴	78	80	80	80
Algeria	1,672	1,757	1,610	1,650 ^e	1,700
Argentina	1,257	1,355 ^r	1,347 ^r	1,453 ^r	1,400
Armenia	46	40	39 ^r	34 ^r	36
Australia	3,734	3,430	3,000 ^{r,c}	3,000 ^r	2,500
Austria, gypsum and anhydrate	1,087	911	872	815 ^r	820
Azerbaijan	38	46	48	101 ^r	102
Bhutan	248	300	344	340 ^r	300
Bolivia	4	2	1	1	1
Bosnia and Herzegovina	150	74	65	72 ^r	75
Brazil ⁵	2,239	2,348	2,638 ^r	3,229 ^r	3,230
Bulgaria ^{e,5}	210	128 ⁴	130	130	130
Burma	82	98	81	50 ^{r,c}	50
Canada ⁵	5,740	3,540	3,046 ^r	2,449 ^r	2,550 ^p
Chile	774	724	758	918	799 ⁴
China ^e	125,000 ^r	126,000 ^r	126,500 ^r	127,000 ^r	128,000
Colombia ^e	200 ⁴	190	200	200	200
Croatia	330	234	240 ^e	240 ^e	235
Cuba ^e	(6)	(6)	(6)	(6)	(6)
Cyprus	406 ^r	317 ^r	333 ^r	335 ^r	335
Czech Republic ^e	35	13 ⁴	5	11	14
Dominican Republic ⁷	563 ^r	196 ^r	188 ^r	144 ^r	302 ⁴
Egypt ⁵	456	735	942 ^r	900 ^{r,c}	900
El Salvador	NA ^r	NA ^r	NA ^r	NA	NA
Eritrea ^e	1	1	1	1	1
Ethiopia ^{e,5}	33 ⁴	36	36	36	36
France ^{e,5}	2,339 ⁴	2,300	2,300	2,300	2,300
Germany, marketable ⁵	2,112	1,898	1,822	2,021	1,949 ⁴
Greece ^{e,5}	500	500	500	500	400
Guatemala	127	19	59 ^r	46 ^r	52
Honduras	NA ^r	NA ^r	NA ^r	NA ^r	NA
Hungary ^{e,5}	16 ^{r,4}	20 ^{r,4}	20	3 ^r	5
India ^e	2,550	2,600	2,650	2,700	2,750
Indonesia ^e	6	8 ⁴	7	8	8
Iran ⁸	11,251	13,616 ^r	11,914 ^r	12,000 ^{r,c}	13,000
Ireland ^e	600 ^r	400 ^r	300 ^r	300 ^r	450
Israel	10	9	100	20 ^r	19
Italy ^e	4,139 ⁴	4,130	4,130	4,130	4,130
Jamaica ^e	238 ⁴	230	230	96 ^r	100
Japan ^e	5,800	5,750	5,700	5,600	5,500
Jordan	232	304	292	255 ^r	275
Kenya ⁵	5	5	6	7 ^r	7
Laos ^e	775	775	553 ^{r,4}	686 ^{r,4}	690
Latvia ^e	230	230	230	230	230
Lebanon ^e	85	100	105	105 ^r	100
Libya ^e	250	250	250	125 ^r	100
Luxembourg ⁵	NA ^r	NA ^r	NA ^r	NA ^r	NA
Macedonia	242	155	143	163	158 ⁴
Mauritania	44	37	71	75 ^e	75
Mexico ⁵	5,135	5,757	3,560	3,838	4,693 ⁴
Moldova	333 ^r	94 ^r	100 ^r	101 ^r	115 ⁴
Morocco ^e	600	600	600	600	500
Nicaragua ⁵	50 ^r	37 ^r	20 ^r	30 ^r	35 ⁴

See footnotes at end of table.

TABLE 7—Continued
 GYPSUM: WORLD PRODUCTION, BY COUNTRY^{1,2}

(Thousand metric tons)

Country ³	2008	2009	2010	2011	2012 ^c
Niger ^e	9 ⁴	9	9	9	9
Nigeria ^e	300	300	320 ^r	320 ^r	350
Oman	349	254	395	1,254 ^r	1,911 ⁴
Pakistan	730	856 ^r	946 ^r	950 ^{r,e}	952
Paraguay ^e	5	5	5 ⁴	5	5
Peru	335 ^e	355	321 ^r	331 ^{r,e}	345 ⁴
Poland ⁵	1,481	1,277	1,179 ^r	1,200 ^{r,e}	1,200
Portugal ⁵	373 ^r	335 ^r	337 ^r	337 ^r	337 ^p
Qatar ^e	135	135	135	135	135
Romania ^e	885 ⁴	800	600	600	600
Russia ^e	3,600	2,900 ⁴	2,900	3,000	3,150
Saudi Arabia ^e	2,300	2,000	2,100	2,300 ^r	2,500
Serbia	NA ^r	NA ^r	NA ^r	NA ^r	NA
Slovakia ⁵	152	131	87 ^r	100 ^{r,e}	130
South Africa	571	598 ^r	513	476 ^r	450
Spain ⁵	15,000	11,500	6,990 ^r	7,100 ^{r,e}	7,100
Sudan ⁵	13	30	31	13 ^r	117 ⁴
Switzerland ^e	300 ^r	300 ^r	300 ^r	300 ^r	300
Syria	573	403	450	400 ^e	200
Tajikistan ^e	9	26 ⁴	15	16 ^r	16
Tanzania ⁵	56	8	27 ^r	39 ^r	39
Thailand	8,500 ^e	8,679	9,985	8,955 ^r	9,000
Tunisia ^e	177	360	435 ^{r,4}	534 ^{r,4}	550
Turkey	2,364 ^r	2,188 ^r	2,851 ^r	2,113 ^r	2,100
Turkmenistan ^e	100	100	100	100	105
Uganda ^e	(6)	(6)	(6)	(6)	(6)
Ukraine	1,158	711	679	676 ^r	680
United Arab Emirates ^e	200	200	150	100	50
United Kingdom ^{e,5}	1,700	1,700	1,700	1,700	1,700
United States ⁹	12,300	11,500 ^r	10,200 ^r	10,500 ^r	15,800 ⁴
Uruguay	-- ^r	-- ^r	-- ^r	-- ^r	--
Venezuela ^e	7	7	7	7	7
Yemen ^e	100 ^r	100 ^r	100 ^r	100 ^r	100
Total	236,000 ^r	230,000 ^r	222,000 ^r	223,000 ^r	231,000

^eEstimated. ^pPreliminary. ^rRevised. NA Not available. -- Zero.

¹World total, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Includes data available through July 17, 2014.

³In addition to the countries listed, El Salvador, Honduras, Luxembourg, Mongolia, and Serbia produced gypsum, but available information is inadequate to make reliable estimates of output levels.

⁴Reported figure.

⁵Includes anhydrite.

⁶Less than ½ unit.

⁷Dominican Republic's gypsum production is reported both in metric tons, as shown above, and in cubic meters, as follows: 2008—190,804; 2009—66,137; 2010—63,582; 2011—48,785; and 2012—102,068.

⁸Data are for years beginning March 21 of that stated.

⁹Excludes byproduct gypsum.