

MISCELLANEOUS CLAY AND SHALE END-USE STATISTICS¹
U.S. GEOLOGICAL SURVEY
[Metric tons]

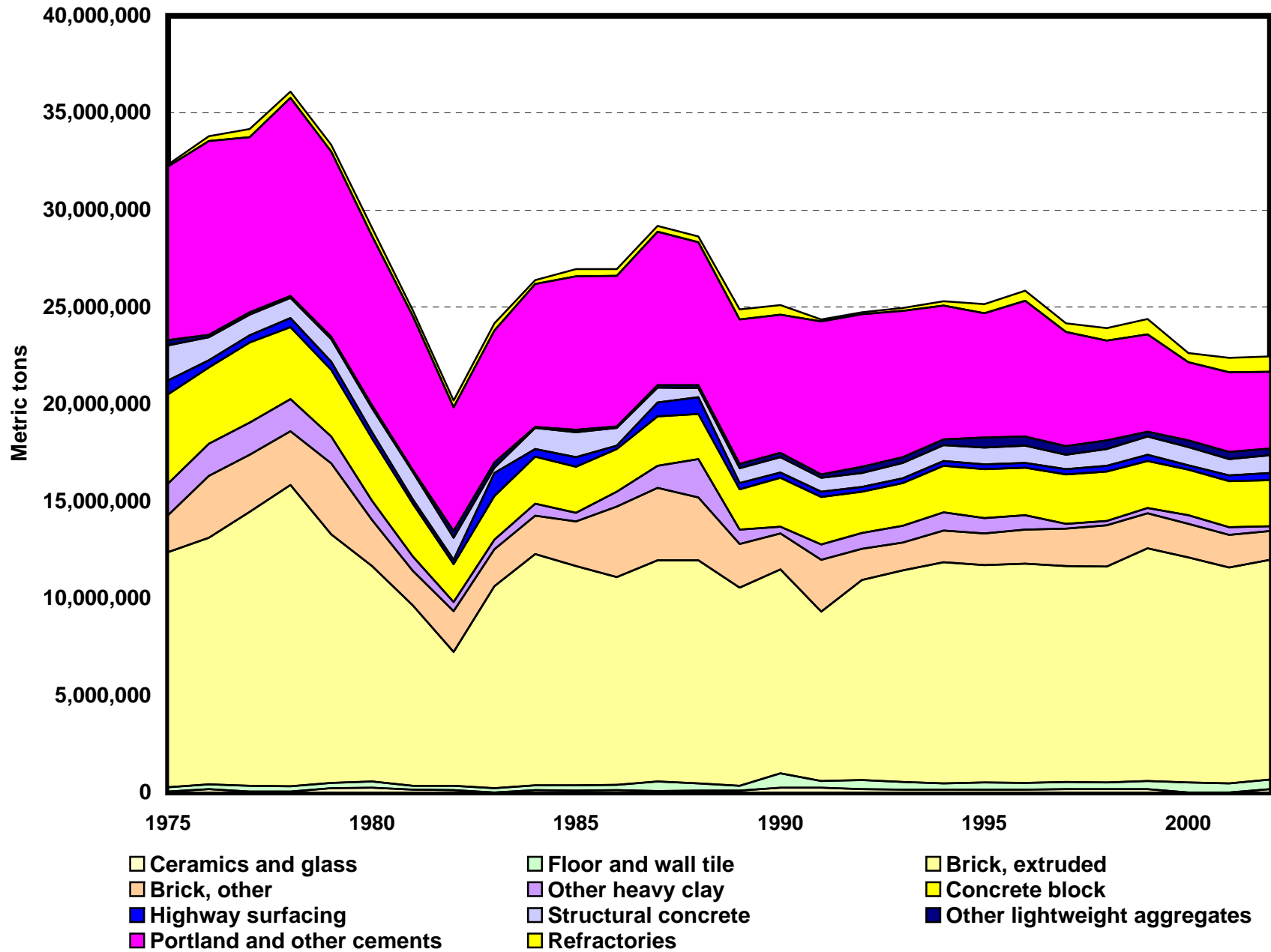
Last modification: September 15, 2005

Year	Ceramics		Heavy clay (products)			Lightweight aggregates				Portland and other cements	Refractories	Miscellaneous	Trade adjustments	Apparent consumption
	Ceramics and glass	Floor and wall tile	Brick, extruded	Brick, other	Other heavy clay	Concrete block	Highway surfacing	Structural concrete	Other lightweight aggregates					
1975	57,800	209,000	12,100,000	1,910,000	1,640,000	4,590,000	726,000	1,790,000	280,000	8,930,000	101,000	34,200	-268,000	32,100,000
1976	177,000	242,000	12,700,000	3,180,000	1,660,000	3,920,000	386,000	1,170,000	132,000	9,990,000	232,000	157,000	-146,000	33,800,000
1977	60,600	296,000	14,100,000	2,930,000	1,670,000	4,130,000	370,000	1,060,000	120,000	9,020,000	407,000	157,000	-221,000	34,100,000
1978	56,500	270,000	15,500,000	2,780,000	1,660,000	3,690,000	466,000	1,060,000	83,200	10,200,000	342,000	159,000	-167,000	36,100,000
1979	218,000	272,000	12,800,000	3,670,000	1,360,000	3,450,000	427,000	1,140,000	131,000	9,530,000	355,000	357,000	-110,000	33,600,000
1980	240,000	331,000	11,100,000	2,360,000	989,000	3,220,000	314,000	1,230,000	163,000	8,720,000	405,000	436,000	-308,000	29,200,000
1981	136,000	208,000	9,280,000	1,790,000	753,000	2,710,000	209,000	1,410,000	117,000	7,930,000	285,000	143,000	-171,000	24,800,000
1982	127,000	210,000	6,890,000	2,120,000	465,000	1,950,000	217,000	1,140,000	349,000	6,380,000	327,000	56,700	-31,700	20,200,000
1983	NA	223,000	10,400,000	1,900,000	491,000	2,250,000	1,200,000	262,000	276,000	6,790,000	363,000	552,000	-207,000	24,500,000
1984	113,000	261,000	11,900,000	1,990,000	607,000	2,420,000	406,000	1,080,000	58,700	7,360,000	181,000	147,000	-824,000	25,700,000
1985	107,000	261,000	11,300,000	2,290,000	443,000	2,370,000	496,000	1,280,000	126,000	7,900,000	385,000	394,000	-152,000	27,200,000
1986	112,000	276,000	10,700,000	3,640,000	769,000	2,200,000	177,000	909,000	57,100	7,760,000	347,000	226,000	-173,000	27,000,000
1987	65,400	502,000	11,400,000	3,710,000	1,160,000	2,530,000	728,000	767,000	111,000	7,900,000	300,000	391,000	-464,000	29,100,000
1988	102,000	364,000	11,500,000	3,240,000	1,970,000	2,320,000	851,000	475,000	163,000	7,350,000	308,000	425,000	-268,000	28,800,000
1989	111,000	240,000	10,200,000	2,240,000	747,000	2,070,000	327,000	773,000	215,000	7,440,000	523,000	1,810,000	-196,000	26,500,000
1990	253,000	744,000	10,500,000	1,840,000	359,000	2,520,000	268,000	786,000	227,000	7,100,000	505,000	939,000	-341,000	25,700,000
1991	252,000	329,000	8,740,000	2,650,000	809,000	2,440,000	274,000	707,000	180,000	7,890,000	98,000	268,000	-137,000	24,500,000
1992	173,000	468,000	10,300,000	1,600,000	833,000	2,110,000	253,000	723,000	310,000	7,860,000	99,500	271,000	-101,000	24,900,000
1993	159,000	374,000	10,900,000	1,450,000	850,000	2,210,000	243,000	787,000	286,000	7,540,000	153,000	315,000	-267,000	25,000,000
1994	136,000	328,000	11,400,000	1,620,000	950,000	2,400,000	247,000	801,000	305,000	6,900,000	215,000	473,000	-275,000	25,500,000
1995	139,000	374,000	11,200,000	1,640,000	769,000	2,530,000	248,000	869,000	521,000	6,400,000	459,000	448,000	-297,000	25,300,000
1996	142,000	355,000	11,300,000	1,730,000	742,000	2,450,000	245,000	887,000	471,000	7,000,000	519,000	396,000	-337,000	25,900,000
1997	179,000	376,000	11,100,000	1,940,000	239,000	2,550,000	278,000	740,000	429,000	5,890,000	452,000	404,000	-377,000	24,200,000
1998	182,000	349,000	11,100,000	2,130,000	219,000	2,540,000	311,000	871,000	441,000	5,140,000	632,000	520,000	-335,000	24,100,000
1999	181,000	400,000	12,000,000	1,800,000	269,000	2,430,000	317,000	929,000	259,000	5,010,000	785,000	364,000	-244,000	24,500,000
2000	W	517,000	11,600,000	1,730,000	439,000	2,330,000	239,000	941,000	344,000	4,030,000	472,000	990,000	-232,000	23,400,000
2001	W	478,000	11,100,000	1,680,000	407,000	2,370,000	284,000	857,000	358,000	4,110,000	741,000	507,000	8,000	22,900,000
2002	174,000	502,000	11,300,000	1,500,000	243,000	2,370,000	364,000	908,000	361,000	3,950,000	795,000	556,000	-423,000	22,600,000
2003	207,000	442,000	11,300,000	1,480,000	815,000	2,250,000	344,000	799,000	320,000	4,350,000	523,000	285,000	-15,000	23,100,000

NA indicates data were not reported. W Withheld to avoid disclosing company proprietary data; data included in the miscellaneous category.

¹Compiled by G.R. Matos and R.L. Virta.

End Uses of Miscellaneous Clay and Shale



Miscellaneous Clay and Shale End-Use Worksheet Notes

Data Source

The source of data for the miscellaneous clay and shale end-use worksheet is the Minerals Yearbook, an annual collection, compilation, and analysis of mineral industry data, published by the U.S. Bureau of Mines and the U.S. Geological Survey.

End Use

End use is defined as the use of the mineral commodity in a particular industrial sector or product. For miscellaneous clay and shale sold or used by producers, end-use categories are:

- Ceramics
 - Ceramics and glass
 - Ceramic floor and wall tile
- Heavy clay products
 - Brick, extruded
 - Brick, other
 - Other heavy clay products
- Lightweight aggregates
 - Concrete block
 - Highway surfacing
 - Structural concrete
 - Other lightweight aggregates
- Portland and other cements
- Refractories
- Miscellaneous uses
- The trade adjustments category includes imports for which miscellaneous clay applications are unknown and discrepancies of exports reported by producers and exports reported by the U.S. Census Bureau.

Major markets for common clay and shale are affected by housing starts and commercial construction. During past recessions (except in 2001), sales of common clay and shale for brick manufacture, lightweight aggregate manufacture, and portland cement manufacture declined. In the 2001 recession, construction remained strong so sales of common clay and shale remained strong. Losses in brick sales have occurred over the past 30 years because of the dominance of alternative sidings, particularly vinyl siding, in the housing market.

Miscellaneous clay and shale have faced increased competition from iron ore slag, perlite, pumice, and vermiculite in the lightweight aggregates market in all applications. Sales declined through the mid-1980s but leveled off after that. Sales for portland cement manufacture have declined partially due to changes in cement formulations. Some sales for this use may also have been included in the undistributed category. Sales for refractory applications have been affected by steel production and changes in refractory markets. Demand for firebrick has declined since the 1960s but sales of clays for refractory mortars and cements have remained strong.

NA in the spreadsheet indicates that no data were reported. W indicates information withheld to avoid disclosing company proprietary data; data are included in the miscellaneous category. A negative number in the trade adjustments category indicates net exports of miscellaneous clays and shale. Data are rounded to no more than three significant digits; data may not add to totals shown.

References

U.S. Bureau of Mines, 1977–96, Minerals Yearbook, v. I, 1975–94.

U.S. Geological Survey, 1997–2005, Minerals Yearbook, v. I, 1995–2003.

Recommended Citation Format:

(1) If taken from CD version:

U.S. Geological Survey, [year of last update, e.g., 2005], [Mineral commodity, e.g., Gold] statistics, *in* Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: U.S. Geological Survey Data Series 140, one CD-ROM. (Also available online at <http://pubs.usgs.gov/ds/2005/140/>.)

(2) If taken from online version:

U.S. Geological Survey, [year of last update, e.g., 2005], [Mineral commodity, e.g., Gold] statistics, *in* Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: U.S. Geological Survey Data Series 140, available online at <http://pubs.usgs.gov/ds/2005/140/>. (Accessed [date].)

For more information, please contact:

[USGS Clays Commodity Specialist](#)

U.S. Geological Survey, Data Series 140.