

# Clay Refractory Manufacturing: 2002

Issued January 2005

EC02-311-327124 (RV)

## 2002 Economic Census

*Manufacturing*

Industry Series



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U.S. Department of Commerce  
Economics and Statistics Administration  
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-- Not applicable for this report.

**Table 1. Historical Statistics for the Industry: 2002 and Earlier Years**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year <sup>1</sup>	Com- panies <sup>2</sup>	All estab- lish- ments <sup>3</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)
			Number <sup>4</sup>	Payroll (\$1,000)	Number <sup>4</sup>	Hours (1,000)	Wages (\$1,000)				
327124, Clay refractory manufacturing . . . . 2002..	113	137	4 975	188 265	3 711	7 481	128 027	513 363	477 535	993 200	'26 268
2001..	N	N	3 801	141 146	2 931	6 158	104 018	360 152	390 991	762 542	11 269
2000..	N	N	4 552	170 919	3 537	7 318	125 616	439 797	433 268	874 557	14 187
1999..	N	N	4 916	182 557	3 958	8 207	139 169	482 055	419 828	903 885	26 232
1998..	N	N	5 617	201 829	4 231	8 793	139 947	535 987	536 453	1 084 499	27 482
1997..	115	147	5 781	199 274	4 386	8 809	138 806	564 030	552 865	1 115 939	25 605

<sup>1</sup>Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

<sup>2</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during the year.

<sup>4</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 2. Industry Statistics for Selected States: 2002**

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E <sup>1</sup>	All establishments <sup>2</sup>		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
327124, Clay refractory manufacturing												
United States.....	1	137	68	4 975	188 265	3 711	7 481	128 027	513 363	477 535	993 200	'26 268
Alabama.....	—	10	7	443	17 720	328	635	11 388	41 547	40 617	82 241	'1 939
Indiana.....	5	7	4	236	7 719	205	436	6 380	21 184	18 420	39 791	'721
Maryland.....	3	5	3	110	4 239	84	173	3 232	8 075	6 277	15 271	'242
Michigan.....	—	7	2	291	11 049	235	464	8 643	26 004	20 135	46 208	'710
Missouri.....	—	7	4	352	14 059	240	464	9 112	17 522	37 888	59 043	'324
North Carolina.....	1	4	4	275	9 471	208	454	5 979	27 676	26 274	53 732	'881
Ohio.....	—	26	17	954	37 548	659	1 335	21 932	128 534	94 422	222 584	'4 253
Pennsylvania.....	—	19	9	748	29 184	578	1 124	20 845	75 392	62 019	133 052	'1 479

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 3. Detailed Statistics by Industry: 2002**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
<b>327124, Clay refractory manufacturing</b>	
Companies <sup>1</sup> .....	number.. 113
All establishments <sup>2</sup> .....	number.. 137
Establishments with 1 to 19 employees.....	number.. 69
Establishments with 20 to 99 employees.....	number.. 57
Establishments with 100 employees or more.....	number.. 11
All employees <sup>3</sup> .....	number.. 4 975
Total compensation.....	\$1,000.. 244 677
Annual payroll.....	\$1,000.. 188 265
Total fringe benefits.....	\$1,000.. 56 412
Production workers, average for year.....	number.. 3 711
Production workers on March 12.....	number.. 3 633
Production workers on May 12.....	number.. 3 678
Production workers on August 12.....	number.. 3 802
Production workers on November 12.....	number.. 3 703
Production worker hours.....	1,000.. 7 481
Production worker wages.....	\$1,000.. 128 027
Total cost of materials.....	\$1,000.. 477 535
Materials, parts, containers, packaging, etc., used.....	\$1,000.. 414 606
Resales.....	\$1,000.. 24 888
Purchased fuels.....	\$1,000.. 21 566
Purchased electricity.....	\$1,000.. 12 229
Contract work.....	\$1,000.. 4 246
Quantity of electricity purchased for heat and power.....	1,000 kWh.. 190 414
Quantity of electricity generated less sold for heat and power.....	1,000 kWh.. D
Total value of shipments.....	\$1,000.. 993 200
Primary products value of shipments.....	\$1,000.. 887 368
Secondary products value of shipments.....	\$1,000.. 51 292
Total miscellaneous receipts.....	\$1,000.. 54 540
Value of resales.....	\$1,000.. 30 667
Contract receipts.....	\$1,000.. D
Other miscellaneous receipts.....	\$1,000.. D
Primary products specialization ratio.....	percent.. 95
Value of primary products shipments made in all industries.....	\$1,000.. 934 504
Value of primary products shipments made in this industry.....	\$1,000.. 887 368
Value of primary products shipments made in other industries.....	\$1,000.. 47 136
Coverage ratio.....	percent.. 95
Value added.....	\$1,000.. 513 363
Total inventories, beginning of year.....	\$1,000.. 167 880
Finished goods inventories.....	\$1,000.. 85 739
Work-in-process inventories.....	\$1,000.. 18 012
Materials and supplies inventories.....	\$1,000.. 64 129
Total inventories, end of year.....	\$1,000.. 164 760
Finished goods inventories.....	\$1,000.. 82 813
Work-in-process inventories.....	\$1,000.. 18 636
Materials and supplies inventories.....	\$1,000.. 63 311
Gross value of depreciable assets (acquisition costs) at beginning of year.....	\$1,000.. '449 985
Total capital expenditures (new and used).....	\$1,000.. '26 268
Buildings and other structures (new and used).....	\$1,000.. '6 997
Machinery and equipment (new and used).....	\$1,000.. '19 271
Automobiles, trucks, etc., for highway use.....	\$1,000.. 583
Computers and peripheral data processing equipment.....	\$1,000.. 786
All other expenditures for machinery and equipment.....	\$1,000.. 17 902
Total retirements.....	\$1,000.. '15 957
Gross value of depreciable assets at end of year.....	\$1,000.. '460 296
Depreciation charges during year.....	\$1,000.. '23 325
Total rental payments.....	\$1,000.. 11 109
Buildings and other structures.....	\$1,000.. 6 364
Machinery and equipment.....	\$1,000.. 4 745
Total other expenses <sup>4</sup> .....	\$1,000.. 100 202
Response coverage ratio <sup>5</sup> .....	percent.. 76
Repair and maintenance services of buildings and/or machinery <sup>4</sup> .....	\$1,000.. 6 287
Communications services <sup>4</sup> .....	\$1,000.. 1 327
Legal services <sup>4</sup> .....	\$1,000.. 778
Accounting, auditing, and bookkeeping services <sup>4</sup> .....	\$1,000.. 393
Advertising and promotional services <sup>4</sup> .....	\$1,000.. 531
Expensed computer hardware and supplies and purchased computer services <sup>4</sup> .....	\$1,000.. 573
Refuse removal (including hazardous waste) services <sup>4</sup> .....	\$1,000.. 1 615
Management consulting and administrative services <sup>4</sup> .....	\$1,000.. 1 101
Taxes and license fees <sup>4</sup> .....	\$1,000.. 2 296
All other expenses <sup>4</sup> .....	\$1,000.. 85 302

<sup>1</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Based on 2002 Annual Survey of Manufactures (ASM) sample data.

<sup>5</sup>A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 4. Industry Statistics by Employment Size: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E <sup>1</sup>	All establishments <sup>2</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
327124, Clay refractory manufacturing											
All establishments .....	1	137	4 975	188 265	3 711	7 481	128 027	513 363	477 535	993 200	'26 268
Establishments with—											
1 to 4 employees .....	9	26	b	D	D	D	D	D	D	D	D
5 to 9 employees .....	8	13	80	2 916	61	118	2 310	7 021	5 131	12 167	'336
10 to 19 employees .....	4	30	413	15 724	308	627	11 008	42 741	40 824	85 190	'1 830
20 to 49 employees .....	—	33	1 063	37 497	793	1 553	24 722	103 273	104 914	209 323	'3 484
50 to 99 employees .....	—	24	1 673	63 454	1 110	2 281	33 665	181 210	140 946	324 461	'9 042
100 to 249 employees .....	—	10	1 407	55 721	1 167	2 351	45 920	145 521	163 402	309 384	'11 395
250 to 499 employees .....	—	1	e	D	D	D	D	D	D	D	D
500 to 999 employees .....	—	—	—	—	—	—	—	—	—	—	—
1,000 to 2,499 employees .....	—	—	—	—	—	—	—	—	—	—	—
2,500 employees or more .....	—	—	—	—	—	—	—	—	—	—	—
Administrative records <sup>4</sup> .....	9	39	199	7 639	156	313	6 084	17 902	13 080	30 982	'854

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 5. Industry Statistics by Primary Product Class Specialization: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments <sup>1</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>2</sup>	Payroll (\$1,000)	Number <sup>2</sup>	Hours (1,000)	Wages (\$1,000)				
327124	Clay refractory manufacturing . . . . .	137	4 975	188 265	3 711	7 481	128 027	513 363	477 535	993 200	'26 268
3271240	Clay refractories . . . . .	137	4 975	188 265	3 711	7 481	128 027	513 363	477 535	993 200	'26 268

<sup>1</sup>Includes establishments with payroll at any time during the year.

<sup>2</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 6a. Products Statistics: 2002 and 1997**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		
				Quantity	Value (\$1,000)	
327124	Clay refractory manufacturing .....	2002..	N	X	X	934 504
		1997..	N	X	X	1 128 727
3271240	Clay refractories .....	2002..	N	X	X	934 504
32712401	Clay refractories .....	2002..	N	X	X	1 128 727
		1997..	N	X	X	859 845
3271240100	Clay refractories <sup>1</sup> .....	2002..	66	X	X	1 095 548
		1997..	88	X	X	859 845
3271240Y	Clay refractories, nsk, total .....	2002..	N	X	X	1 095 548
3271240YWW	Clay refractories, nsk, for nonadministrative-record establishments .....	2002..	N	X	X	74 659
		1997..	N	X	X	33 179
3271240YWY	Clay refractories, nsk, for administrative-record establishments .....	2002..	N	X	X	44 327
		1997..	N	X	X	198
		2002..	N	X	X	30 332
		1997..	N	X	X	32 981

<sup>1</sup>For additional detail, see Current Industrial Report MA327C, Refractories.

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997**

[Not applicable for this report.]

**Table 7. Materials Consumed by Kind: 2002 and 1997**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
327124	Clay refractory manufacturing		
0090001	Total materials .....	2002.. X	414 606
		1997.. X	481 662
21232011	Clay, ceramic, and refractory minerals .....	2002.. X	301 085
		1997.. X	274 465
32799205	Dead-burned magnesia and magnesite .....	2002.. X	D
		1997.. X	6 875
32710000	Refractories, clay and nonclay .....	2002.. X	40 984
		1997.. X	90 098
32700005	Other stone, clay, glass, and concrete products .....	2002.. X	D
		1997.. X	4 418
32500003	Industrial chemicals .....	2002.. X	D
		1997.. X	6 241
00970099	All other materials and components, parts, containers, and supplies .....	2002.. X	36 305
		1997.. X	60 828
00971000	Materials, ingredients, containers, and supplies, nsk .....	2002.. X	29 245
		1997.. X	38 737

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.