

# Flat Glass Manufacturing: 2002

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## 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)				
327211, Flat glass manufacturing . . . . . 2002..	13	36	10 683	469 781	8 673	18 417	351 418	1 694 537	1 053 748	2 750 510	156 944
2001..	N	N	11 044	530 805	9 006	18 715	409 632	1 677 163	1 008 792	2 674 436	245 887
2000..	N	N	11 652	541 291	9 457	19 976	432 256	1 963 137	1 044 114	2 990 213	336 050
1999..	N	N	11 387	568 879	9 358	20 616	445 688	1 942 055	897 030	2 844 153	274 348
1998..	N	N	11 500	540 673	9 476	21 012	422 610	1 766 794	936 703	2 720 682	384 491
1997..	13	36	11 579	535 454	9 474	21 457	421 377	1 888 714	926 796	2 795 507	176 690

<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	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)	
	E <sup>1</sup>	Total	With 20 employees or more	Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)					Wages (\$1,000)
<b>327211, Flat glass manufacturing</b>												
United States.....	—	36	35	10 683	469 781	8 673	18 417	351 418	1 694 537	1 053 748	2 750 510	156 944
California .....	—	6	5	984	44 048	779	1 729	32 666	167 626	128 061	298 444	5 185

<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>327211, Flat glass manufacturing</b>	
Companies <sup>1</sup> .....	number.. 13
All establishments <sup>2</sup> .....	number.. 36
Establishments with 1 to 19 employees.....	number.. 1
Establishments with 20 to 99 employees.....	number.. 4
Establishments with 100 employees or more.....	number.. 31
All employees <sup>3</sup> .....	number.. 10 683
Total compensation.....	\$1,000.. 642 883
Annual payroll.....	\$1,000.. 469 781
Total fringe benefits.....	\$1,000.. 173 102
Production workers, average for year.....	number.. 8 673
Production workers on March 12.....	number.. 8 735
Production workers on May 12.....	number.. 8 754
Production workers on August 12.....	number.. 8 637
Production workers on November 12.....	number.. 8 545
Production worker hours.....	1,000.. 18 417
Production worker wages.....	\$1,000.. 351 418
Total cost of materials.....	\$1,000.. 1 053 748
Materials, parts, containers, packaging, etc., used.....	\$1,000.. 651 346
Resales.....	\$1,000.. 68 036
Purchased fuels.....	\$1,000.. 230 409
Purchased electricity.....	\$1,000.. 94 601
Contract work.....	\$1,000.. 9 356
Quantity of electricity purchased for heat and power.....	1,000 kWh.. 2 261 557
Quantity of electricity generated less sold for heat and power.....	1,000 kWh.. -
Total value of shipments.....	\$1,000.. 2 750 510
Primary products value of shipments.....	\$1,000.. 2 650 932
Secondary products value of shipments.....	\$1,000.. D
Total miscellaneous receipts.....	\$1,000.. D
Value of resales.....	\$1,000.. 86 216
Contract receipts.....	\$1,000.. -
Other miscellaneous receipts.....	\$1,000.. D
Primary products specialization ratio.....	percent.. D
Value of primary products shipments made in all industries.....	\$1,000.. 2 660 754
Value of primary products shipments made in this industry.....	\$1,000.. 2 650 932
Value of primary products shipments made in other industries.....	\$1,000.. 9 822
Coverage ratio.....	percent.. 100
Value added.....	\$1,000.. 1 694 537
Total inventories, beginning of year.....	\$1,000.. 290 056
Finished goods inventories.....	\$1,000.. 208 325
Work-in-process inventories.....	\$1,000.. 24 743
Materials and supplies inventories.....	\$1,000.. 56 988
Total inventories, end of year.....	\$1,000.. 295 445
Finished goods inventories.....	\$1,000.. 199 004
Work-in-process inventories.....	\$1,000.. 31 839
Materials and supplies inventories.....	\$1,000.. 64 602
Gross value of depreciable assets (acquisition costs) at beginning of year.....	\$1,000.. 3 462 773
Total capital expenditures (new and used).....	\$1,000.. '156 944
Buildings and other structures (new and used).....	\$1,000.. '9 453
Machinery and equipment (new and used).....	\$1,000.. '147 491
Automobiles, trucks, etc., for highway use.....	\$1,000.. '863
Computers and peripheral data processing equipment.....	\$1,000.. '2 057
All other expenditures for machinery and equipment.....	\$1,000.. '144 571
Total retirements.....	\$1,000.. '69 377
Gross value of depreciable assets at end of year.....	\$1,000.. '3 550 340
Depreciation charges during year.....	\$1,000.. '172 906
Total rental payments.....	\$1,000.. 6 914
Buildings and other structures.....	\$1,000.. 2 532
Machinery and equipment.....	\$1,000.. 4 382
Total other expenses <sup>4</sup> .....	\$1,000.. 222 647
Response coverage ratio <sup>5</sup> .....	percent.. 100
Repair and maintenance services of buildings and/or machinery <sup>4</sup> .....	\$1,000.. 53 243
Communications services <sup>4</sup> .....	\$1,000.. 2 337
Legal services <sup>4</sup> .....	\$1,000.. D
Accounting, auditing, and bookkeeping services <sup>4</sup> .....	\$1,000.. 109
Advertising and promotional services <sup>4</sup> .....	\$1,000.. D
Expensed computer hardware and supplies and purchased computer services <sup>4</sup> .....	\$1,000.. 2 952
Refuse removal (including hazardous waste) services <sup>4</sup> .....	\$1,000.. 7 913
Management consulting and administrative services <sup>4</sup> .....	\$1,000.. 730
Taxes and license fees <sup>4</sup> .....	\$1,000.. 9 962
All other expenses <sup>4</sup> .....	\$1,000.. 144 338

<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)				
<b>327211, Flat glass manufacturing</b>											
All establishments .....	—	36	10 683	469 781	8 673	18 417	351 418	1 694 537	1 053 748	2 750 510	156 944
Establishments with—											
1 to 4 employees .....	—	—	—	—	—	—	—	—	—	—	—
5 to 9 employees .....	—	1	a	D	D	D	D	D	D	D	D
10 to 19 employees .....	—	—	—	—	—	—	—	—	—	—	—
20 to 49 employees .....	5	3	c	D	D	D	D	D	D	D	D
50 to 99 employees .....	—	1	b	D	D	D	D	D	D	D	D
100 to 249 employees .....	—	11	2 191	85 254	1 758	3 823	62 295	363 031	207 965	579 377	25 537
250 to 499 employees .....	—	15	4 805	195 312	3 777	8 163	137 848	866 595	511 269	1 379 972	103 012
500 to 999 employees .....	—	4	2 474	118 517	2 093	4 427	93 720	341 995	256 336	606 845	27 683
1,000 to 2,499 employees .....	—	1	g	D	D	D	D	D	D	D	D
2,500 employees or more .....	—	—	—	—	—	—	—	—	—	—	—
Administrative records <sup>4</sup> .....	—	—	—	—	—	—	—	—	—	—	—

<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)				
327211	Flat glass manufacturing .....	36	10 683	469 781	8 673	18 417	351 418	1 694 537	1 053 748	2 750 510	156 944
3272111	Flat glass (float, sheet, and plate process), made by flat glass producers .....	25	7 874	322 559	6 288	13 429	232 329	1 362 351	831 721	2 210 007	142 685
3272114	Other glass products, made by flat glass producers .....	10	2 802	146 922	2 379	4 980	118 866	331 732	221 763	539 785	14 238

<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)
327211	Flat glass manufacturing .....	2002.. N 1997.. N	X X	X X	2 660 754 2 669 034
3272111	Flat glass (float, sheet, and plate process), made by flat glass producers .....	2002.. N 1997.. N	X X	X X	1 984 378 1 888 468
32721111	Flat glass (float, sheet, and plate process), made by flat glass producers .....	2002.. N 1997.. N	X X	X X	1 984 378 1 888 468
3272111100	Flat glass (float, sheet, and plate process), made by flat glass producers <sup>1</sup> .....	2002.. 8 1997.. 6	X X	X X	1 984 378 1 888 468
3272114	Other glass products, made by flat glass producers .....	2002.. N 1997.. N	X X	X X	676 330 N
32721141	Other glass products, made by flat glass producers .....	2002.. N 1997.. N	X X	X X	676 291 N
3272114111	Rolled and wire glass, made by flat glass producers .....	2002.. 5 1997.. N	X X	X X	D N
3272114121	Tempered glass for construction, architectural, and automotive purposes, made by flat glass producers <sup>2</sup> .....	2002.. 6 1997.. N	X X	X X	320 577 N
3272114131	Tempered glass for other uses (including appliances), made by flat glass producers <sup>3</sup> .....	2002.. 3 1997.. N	X X	X X	D N
3272114193	Other glass products (including laminated, multi-glazed and sealed insulating glass units, bent, enameled, stained, leaded, faceted, and colored slabs), made by flat glass producers <sup>4</sup> .....	2002.. 11 1997.. N	X X	X X	291 484 N
3272114Y	Other glass products, made by flat glass producers, nsk .....	2002.. N 1997.. N	X X	X X	39 N
3272114YWV	Other glass products, made by flat glass producers, nsk .....	2002.. N 1997.. N	X X	X X	39 N
327211W	Flat glass manufacturing, nsk, total .....	2002.. N 1997.. N	X X	X X	46 13
327211WY	Flat glass manufacturing, nsk, total .....	2002.. N 1997.. N	X X	X X	46 13
327211WYWW	Flat glass manufacturing, nsk, for nonadministrative-record establishments .....	2002.. N 1997.. N	X X	X X	46 13
327211WYWY	Flat glass manufacturing, nsk, for administrative-record establishments .....	2002.. N 1997.. N	X X	X X	— —

<sup>1</sup>For additional detail, see Current Industrial Report MA327A, Flat Glass.  
<sup>2</sup>This product code is primary to more than one industry. See industry 327215, product code 327215B111.  
<sup>3</sup>This product code is primary to more than one industry. See industry 327215, product code 327215B121.  
<sup>4</sup>This product code is primary to more than one industry. See industry 327215, product code 327215B393.

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 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)
327211	Flat glass manufacturing		
0090001	Total materials .....	2002.. X	651 346
		1997.. X	606 034
21232200	Glass sand, all types .....	2002.. X	154 882
		1997.. X	78 506
32518104	Sodium carbonate (soda ash) (58 percent Na2O) .....	2002.. X	118 603
		1997.. X	N
325000A9	Industrial inorganic chemicals (excluding sodium carbonate) .....	2002.. X	38 174
		1997.. X	42 386
32500055	Other chemicals and allied products .....	2002.. X	33 210
		1997.. X	12 985
32721103	Glass (float, sheet and plate) .....	2002.. X	27 745
		1997.. X	23 284
32221001	Paperboard containers, boxes, and corrugated paperboard .....	2002.. X	11 409
		1997.. X	15 471
32192001	Wood boxes, pallets, skids, and containers .....	2002.. X	46 398
		1997.. X	67 629
00190028	Cullet (glass scrap) .....	2002.. X	43 169
		1997.. X	36 755
00970099	All other materials and components, parts, containers, and supplies .....	2002.. X	147 986
		1997.. X	N
00971000	Materials, ingredients, containers, and supplies, nsk .....	2002.. X	29 770
		1997.. X	26 114

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.