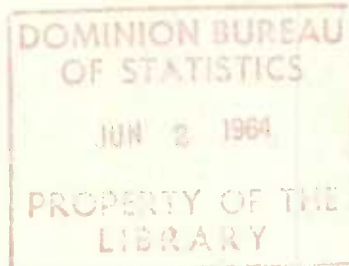


CATALOGUE No.

44-214

ANNUAL



# REFRACTORIES MANUFACTURERS

## 1961

The list of firms normally included in this report has been omitted from this issue, along with certain tables. See introductory text for details.

### ANNUAL CENSUS OF MANUFACTURES

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## SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:

.. figures not available.

... figures not appropriate or not applicable.

— nil or zero.

## EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1961 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and for major industry groups. Implementation of the new definition of the establishment in the 1961 Census has resulted in certain changes and necessitated some adjustments to the statistics for previous years in order to maintain comparability of the data. (See following note on "Establishment".)

Industry statistics given in these reports refer to number of establishments, employees, salaries and wages, cost of materials, supplies, fuel and electricity, gross value of shipments, inventories and value added by manufacturing. Details of materials used and products shipped are also given. Descriptions of the principal industry statistics, with special reference to 1961, are as follows:

### Period Covered

Firms are asked to submit figures for the calendar year, if at all possible, and most reports are on this basis. Financial year reports for periods differing from the calendar year are accepted in instances where the firms find it impossible to supply calendar year data from accounting records. However the data on employees, salaries and wages are requested on a calendar year basis in all cases.

### Establishment

The reporting unit in the Census of Manufactures is the **establishment**. Beginning with the 1961 Census, the establishment is defined as follows:

The smallest unit which is a separate operating entity capable of reporting all the following:

- Materials and supplies used,
- Goods purchased for resale as such,
- Fuel and power consumed,
- Number of employees and their pay,
- Inventories,
- Shipments or sales.

The establishment is to be distinguished from smaller subdivisions or departments which do not have records which permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in operations which were classifiable to different industries. Beginning with 1961, separate reports for such operations will be required only in cases where accounting records can provide all the elements of principal statistics enumerated above. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing operations. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were principally engaged in manufacturing operations. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing establishments in the basic industry statistics. Again adjustments to the industry statistics were made to reflect the removal of such reporting units for the period 1957-1960. These reporting units are now listed as establishments in other Bureau industry surveys, such as Wholesale Trade, Construction, etc. In order, however, to maintain complete coverage of certain commodity items produced mainly in manufacturing establishments, many non-manufacturing establishments are now surveyed for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

Many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described earlier.

Prior to 1961, the main emphasis in the Census of Manufactures was on manufacturing activity whereas, beginning with 1961, each establishment reports on the total operations carried out within its accounting boundaries (except income from investments such as rent, interest and dividends). However, data on different activities (manufacturing, selling, construction by own labour force etc.) are requested separately. The 1961 statistics in this report are confined to manufacturing activity in order to maintain comparability with previous years. In the 1962 reports it is planned to show both 1961 and 1962 data on the "total activity" basis in addition to the data on manufacturing operations.

### Employees

Administrative and office employees include all executives and supervisory officials such as presidents, vice-presidents, secretaries, treasurers, etc., together with managers, professional and technical employees, superintendents and factory supervisors above the working foremen level, and clerical employees. Working owners and partners are also included in this category but will be shown separately in subsequent years.

Production and related workers include all other factory workmen whether paid on a monthly, weekly, hourly or piece-work basis. Working foremen doing work similar to that of the employees they supervise are included, as are maintenance, handling, warehousing and delivery staff. Employees on new construction work, in retail or wholesale operations, on outside piece work, etc, are not included.

Production workers are reported by months, an average for the year being obtained by summing the monthly figures and dividing by twelve. This procedure is followed even though the plant did not operate in all months. Figures on employment refer to the calendar year whether or not some establishments reported other data on a financial year basis.

### Salaries and Wages

Salaries and wages refer to gross earnings of the employees described above, including salaries, wages, commissions, bonuses, the value of room and board where provided, deductions for income tax and social services such as sickness and unemployment insurance, pensions, etc., as well as any other allowances forming part of the employees' wages. Payments for overtime are included.

Salaries refer to amounts paid to administrative and office employees. Withdrawals by working owners or partners for normal living expenses for self and family are included with salaries, but will be shown separately in subsequent years. Wages refer to the amounts paid to production and related workers as defined above. Data on earnings refer to the calendar year whether or not some establishments reported other data on a financial year basis.

### Cost of Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars and trucks), not to purchases unless the quantities are the same. Values refer to the laid-down cost at the establishment including freight, duty, etc.

### Materials and Supplies Used

Figures represent quantities and laid-down cost values, at the establishment, of materials, supplies and components actually used during the year whether purchased from others or received as transfers from other plants of the reporting company. Amounts paid to other manufacturers for work done on materials owned by the reporting company are included. Returnable containers or any other items charged to capital account are not included. Fuels are not included. Goods bought from others or received as transfers from other plants or reporting companies for resale without further processing are not included. Maintenance and repair supplies not chargeable to capital account are included.

### Factory Shipments

Factory shipments generally refer to shipments of goods made from own materials either in the reporting establishments or by other manufacturers on the basis of a charge to the reporting establishment for work done. All products and by-products shipped from the establishment are included whether for domestic use, export, or for government departments. Transfer shipments to sales outlets, distributing warehouses or to other manufacturing units of the reporting firm which are treated as separate establishments are included. Goods bought or received as transfers and resold without further processing are not included. Values are requested

on f.o.b. establishment basis, and do not include sales tax or excise duties. Values of containers not returnable are included. Amounts received in payment for work done on materials owned by others are included.

In a few industries such as shipbuilding, aircraft, etc., where work on principal products extend over a relatively long period, the value of production is recorded rather than the value of shipments. For those industries production is computed from the value of deliveries of complete units during the year plus the value of work done during the year on unfinished units less the value of work done in previous years on finished units delivered in the year under review.

### Inventories

Values represent the book value of manufacturing inventory. Figures consist of inventory at the plant and at warehouses or selling outlets which are treated as extensions of the plants for the purpose of reporting shipments.

### Value added by Manufacturing

Value added is compiled by deducting the cost of materials, fuel and electricity consumed from the value of production (value of shipments adjusted for changes in the value of inventories of finished goods and goods in process). Value added is sometimes referred to as net production.<sup>1</sup>

### Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures provides for a breakdown of the universe into 140 industries arranged in 20 major groups compared with 135 industries in 17 major groups in the old classification which was used in the compilations for the years 1949 to 1959 inclusive. Full details are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics. Reporting establishments are classified or allotted to specific industries on the basis of the value of principal products made or shipped.

Establishments engaged solely in repair work are not included in manufacturing industries (except in the case of furniture, shipbuilding, boat building, aircraft and railroad rolling stock industries) but establishments principally engaged in assembling parts into complete units are included.

<sup>1</sup> To arrive at the National Accounts concept of "gross domestic product at factor cost", it would be necessary to subtract also the cost of advertising, insurance and other business costs which are not collected in the annual Census of Manufactures. Value added figures for the primary industries, manufacturing and construction are published in D.B.S. publication 61-202, Survey of Production.

### Short Forms

Since 1949, in order to ease the reporting burden for smaller firms, a one-page short form has been used asking only for certain principal items of shipments. For purposes of publication, missing data were estimated on the basis of appropriate ratios. For the 1959 and 1960 censuses the general limit for short forms was raised from \$50,000 to \$100,000 value of shipments and a new intermediate form was used. This form is a shortened version of the long form in that some of the general questions were pared down and the detailed lists of materials and products were limited to the more important items. The general limits for firms in this category were set at between \$100,000-\$500,000 value of shipments, but in the case of both the short and inter-

mediate forms there are lower cut-offs for a number of industries in which the smaller firms account for a larger share of total shipments.

In the 1961 Census, in addition to the question on shipments of goods of own manufacture, questions on employment and payroll and on total revenue were added on all short forms. The other elements of principal statistics, viz. value of materials, fuel and electricity, and inventories, are generally estimated by using ratios based on the change in the value of shipments from year to year. This is to permit the complete compilation of basic industry statistics by industry and by geographic location. The proportion of the estimated data is generally less than 5 per cent of the total in each category of principal statistics.



## REFRACTORIES MANUFACTURERS

1961

Data presented in this report under the heading of Refractories Manufacturers reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the new Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of 1961 industry statistics—see items "Standard Industrial Classification" and "Establishment" in the Explanatory Notes section of this report. For statistical purposes the industry titled Refractories Manufacturers in the revised Standard Industrial Classification covers the operations of establishments primarily engaged in the manufacture of firebrick, crucibles and other heat resisting clay products such as glasshouse tank blocks, stoppers, floaters and rings. This industry also includes establishments primarily engaged in non-clay refractories and crucibles.

In many instances, adoption of the new Standard Industrial Classification effected a radical shifting of manufacturing establishments as between industry groupings and the formation of new industries, as was the case for the Refractories Manufacturers industry. Comparable figures for the latter for earlier years are not readily available as the details for the various tables herein were previously contained primarily in two separate industries—The Non-Metallic Mineral Products Industry and The Clay and Clay Products Industry. However, an attempt has been made to recompile 1957, 1958 and 1959 on the revised Standard Industrial Classification basis. These figures are given in Table 1.

The introduction of the new definition of establishment (reporting unit) in the 1961 Census of Manufactures has resulted in certain changes and necessitated some adjustments to the statistics; however, in the case of the industry reviewed in this report such changes were nil.

Due to increased work loads and staff shortages it has been necessary to suspend publication of certain tables normally contained in the reports issued in the Census of Manufactures series. It is planned to resume publication of these tables in the 1962 reports. In general, the tables affected are the following: Directory of Firms, Imports, Exports and Capital and Repair Expenditures.

**TABLE 1. Principal Statistics: Refractories Manufacturers, by Provinces, 1957-61**

Basis: Revised Standard Industrial Classification and New Establishment Concept

Year and province	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture	Value of factory shipments
	number				dollars		
<b>1957</b>							
Ontario .....	9	170	681,988	357,441	1,917,416		4,584,022
Quebec .....	4	344	1,303,426	254,207	4,834,332	1	9,893,122
Saskatchewan .....	1						
<b>Canada .....</b>	<b>14</b>	<b>514</b>	<b>1,985,414</b>	<b>611,648</b>	<b>6,751,748</b>		<b>14,477,144</b>
<b>1958</b>							
Ontario .....	9	173	743,449	312,165	1,880,411	4,167,783	4,370,134
Quebec .....	4	285	1,063,457	202,715	3,684,629	2,231,243	7,994,237
Saskatchewan .....	1						
<b>Canada .....</b>	<b>14</b>	<b>458</b>	<b>1,806,906</b>	<b>514,880</b>	<b>5,565,040</b>	<b>6,399,026</b>	<b>12,364,371</b>
<b>1959</b>							
Ontario .....	10	221	998,655	331,536	2,723,304	3,066,653	6,073,038
Quebec .....	4	396	1,525,487	255,147	4,982,139	5,685,611	11,059,887
Saskatchewan .....	1						
British Columbia .....	1						
<b>Canada .....</b>	<b>16</b>	<b>617</b>	<b>2,524,142</b>	<b>586,683</b>	<b>7,705,443</b>	<b>8,752,264</b>	<b>17,132,925</b>
<b>1960</b>							
Ontario .....	10	222	1,067,710	326,630	2,757,058	2,978,656	6,132,502
Quebec .....	3	411	1,648,316	232,588	5,812,559	6,414,537	12,423,134
Saskatchewan .....	1						
British Columbia .....	2						
<b>Canada .....</b>	<b>16</b>	<b>633</b>	<b>2,716,026</b>	<b>559,218</b>	<b>8,569,617</b>	<b>9,393,193</b>	<b>18,555,636</b>
<b>1961</b>							
Ontario .....	10	294	1,450,497	386,558	3,245,440	3,530,641	7,146,884
Quebec .....	3	376	1,558,044	225,519	5,506,897	5,256,900	10,737,857
Saskatchewan .....	1						
British Columbia .....	2						
<b>Canada .....</b>	<b>16</b>	<b>670</b>	<b>3,008,541</b>	<b>612,077</b>	<b>8,752,337</b>	<b>8,787,541</b>	<b>17,884,741</b>

<sup>1</sup> Because of lack of inventory data, "Value added" is not available for 1957.

Note: Profits or losses cannot be calculated from above figures as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

TABLE 2. Inventories:<sup>1</sup> Refractories Manufacturers, 1961

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	dollars			
Opening:				
Ontario .....	621, 103	33, 291	406, 487	1, 060, 881
All other provinces .....	1, 673, 290	181, 950	855, 971	2, 711, 211
Canada .....	2, 294, 393	215, 241	1, 262, 458	3, 772, 092
Closing:				
Ontario .....	832, 696	24, 917	430, 616	1, 288, 229
All other provinces .....	2, 067, 246	295, 237	994, 143	3, 356, 626
Canada .....	2, 899, 942	320, 154	1, 424, 759	4, 644, 855

<sup>1</sup> (a) Book value of all manufacturing inventories owned and held at plant and plant warehouses.

(b) The opening inventory for 1961 differs from the closing inventory for 1960 because of the receipt of revised data, the inclusion of new establishments, the removal of figures for establishments which did not operate in 1961, changes in classification and the implementation of the New Establishment Concept.

TABLE 3. Materials Used: Refractories Manufacturers, 1960 and 1961

Material	1960		1961	
	Quantity	Cost at plant	Quantity	Cost at plant
	tons	\$	tons	\$
Cement—Portland .....	210	4, 550	236	5, 799
Ciment fondu .....	1, 517	103, 807	1, 613	109, 231
Chrome ore .....	40, 965	1, 320, 861	39, 590	1, 381, 282
Clays, imported:				
Ball clay .....	117	4, 393	778	30, 862
Fireclay .....	6, 890	197, 327	7, 667	224, 703
Sagger clay .....	3, 009	120, 369	3, 319	133, 640
Other imported clays .....	2, 179	162, 880	2, 162	156, 970
Firebrick, ground or broken (grog), including scrap brick .....	2, 625	112, 915	3, 711	110, 216
Graphite .....	200	22, 175	186	21, 146
Kyanite .....	584	38, 864	838	54, 699
Silica sand and ground quartz .....	549	9, 259	674	11, 393
Sodium silicate .....	758	72, 179	853	82, 370
Containers and other packaging materials or supplies .....	..	413, 593	..	451, 050
All other materials <sup>1</sup> .....	..	5, 983, 445	..	5, 978, 976
Totals .....	...	8, 569, 617	...	8, 752, 337

<sup>1</sup> No detailed information on materials used was collected from small establishments.

The estimated value of materials used by these establishments was \$583,340 in 1960 and \$245,900 in 1961, and these amounts are included in "All other materials".

TABLE 4. Factory Shipments: Refractories Manufacturers, 1961

Product	1960		1961	
	Quantity	Value of factory shipments	Quantity	Value of factory shipments
	tons	\$	tons	\$
Firebrick and similar shapes, all types .....	91, 125	12, 853, 490	78, 114	11, 296, 178
Refractory cements and mortars .....	19, 698	2, 008, 207	21, 114	2, 133, 097
Refractories, other types .....	11, 773	1, 600, 566	16, 084	2, 186, 918
All other products .....	..	2, 093, 373	..	2, 268, 548
<b>Totals</b> .....	<b>...</b>	<b>18, 555, 636</b>	<b>...</b>	<b>17, 884, 741</b>

TABLE 5. Factory Shipments of Refractories, 1956 - 61

(from All Industries)

Year	Firebrick and similar shapes					Cements, mortars, castables, etc.	
	From domestic clays			Other <sup>1</sup>			
	Fireclay blocks and shapes	Firebrick					
	\$	M	\$	tons	\$	tons	\$
1956 .....	471,083	4,258	430,922	82,383	8,876,196	29,559	2,868,409
1957 .....	376,492	5,411	537,067	77,110	9,209,635	27,472	2,811,896
1958 .....	313,164	2,806	325,653	63,183	7,465,955	21,825	2,456,174
1959 .....	348,912	3,595	422,300	84,745	11,890,006	28,867	3,295,999
1960 .....	<sup>2</sup>	4,397	553,196	94,915	13,072,676	31,721	3,676,307
1961 .....	<sup>2</sup>	3,873	476,327	85,815	11,931,813	37,848	4,385,721

<sup>1</sup> Includes rigid firebrick, stove linings, and other shapes made from imported clays, chrome ore, magnesite, etc. Silicabrick not included.

<sup>2</sup> Commencing with 1960 fireclay blocks and shapes from domestic clays are included under "Other".

TABLE 6. Principal Statistics classified according to Type of Ownership: Refractories Manufacturers, 1961

Type	Estab-lish-ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		dollars		
Individual ownership .....	1	670	3, 008, 541	8, 752, 337	17, 884, 741
Partnerships .....	1				
Incorporated companies .....	14				
<b>Totals</b> .....	<b>16</b>	<b>670</b>	<b>3, 008, 541</b>	<b>8, 752, 337</b>	<b>17, 884, 741</b>

**TABLE 7. Principal Statistics grouped according to Selling Value of Factory Shipments:  
Refractories Manufacturers, 1961**

Establishments reporting value of factory shipments	Estab- lish- ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		dollars		
Under \$25,000 .....	1	23	82,696	60,886	230,679
\$ 25,000 to \$ 99,999 .....	3				
100,000 " 199,999 .....	4	56	227,805	201,000	569,788
200,000 " 499,999 .....	2				
500,000 " 999,999 .....	2	125	597,070	919,064	1,949,214
1,000,000 " 4,999,999 .....	3				
5,000,000 and over .....	1	466	2,100,970	7,571,387	15,135,060
Totals .....	16				
		670	3,008,541	8,752,337	17,884,741

**TABLE 8. Employees and their Earnings: Refractories Manufacturers, 1961**

Province	Employees					Earnings		
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	Total
	Male	Female	Male	Female				
	number					dollars		
Ontario .....	92	25	177	—	294	652,850	797,647	1,450,497
Other provinces .....	71	10	295	—	376	394,656	1,163,388	1,558,044
Canada .....	163	35	472	—	670	1,047,506	1,961,035	3,008,541

**TABLE 9. Production Workers, by Months: Refractories Manufacturers, 1961**

Month	Establishments reporting monthly detail	
	Male	Female
January .....	426	—
February .....	425	—
March .....	421	—
April .....	385	—
May .....	408	—
June .....	457	—
July .....	436	—
August .....	442	—
September .....	433	—
October .....	454	—
November .....	460	—
December .....	407	—
Average for establishments reporting monthly detail .....	430	—
Average for small establishments <sup>1</sup> .....	42	—
Average for all establishments .....	472	—

<sup>1</sup> The monthly detail of production workers was not collected from small establishments. Only annual averages were collected from these establishments.



TABLE 10. Fuel and Electricity Used: Refractories Manufacturers, 1961

Kind	Quantity	Cost at plant \$
1. Establishments reporting commodity detail:		
Bituminous coal:		
(a) From Canadian mines ..... ton	367	4,985
(b) Imported ..... "	16,528	204,994
Gasoline (including gasoline used in cars and trucks) ..... Imp. gal.	39,200	16,509
Fuel oil, including kerosene or coal oil ..... "	1,516,695	134,159
Gas:		
(a) Liquefied petroleum gases ..... Imp. gal.	16,668	3,425
(b) Natural gas ..... M cu. ft.	79,043	36,545
Other fuel .....	...	46,228
Electricity purchased ..... kwh.	10,323,765	109,492
2. Estimate for establishments for which no data were collected: <sup>1</sup>		
Cost of fuel and electricity .....	..	55,740
3. All establishments:		
Total cost of fuel and electricity .....	...	612,077

<sup>1</sup> No detailed information on fuel and electricity used was collected from small establishments.