

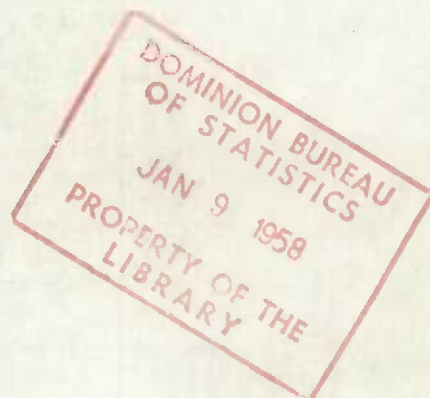
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CANADA

THE ARTIFICIAL ABRASIVES INDUSTRY 1956



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NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** — The Primary Industries, including mining, forestry and fisheries; **Volume II** — Manufacturing; **Volume III** — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries or provinces which they comprise.

Volume II consists of the following parts, the first two of which deal with manufacturing as a whole and the balance with the major manufacturing groups.

- I — General Review of the Manufacturing Industries, \$1.50
- II — The Manufacturing Industries of Canada, (7 sections, as follows):
 - Section A. Summary for Canada, 25¢
 - Section B. Atlantic Provinces, 50¢
 - Section C. Quebec, 25¢
 - Section D. Ontario, 25¢
 - Section E. Prairie Provinces, 40¢
 - Section F. British Columbia, 25¢
 - Section G. The Manufacturing Industries of Canada, Regional Distribution, 75¢
- III — Foods and Beverages
- IV — Tobacco and Tobacco Products
- V — Rubber Products
- VI — Leather Products
- VII — Textile Mills
- VIII — Knitting Mills
- IX — Clothing
- X — Wood and Paper Products
- XI — Printing Trades
- XII — Iron and Steel Products
- XIII — Transportation Equipment
- XIV — Non-ferrous Metal Products
- XV — Electrical Apparatus and Supplies
- XVI — Non-metallic Mineral Products
- XVII — Products of Petroleum and Coal
- XVIII — Chemicals and Allied Products
- XIX — Miscellaneous Manufactures

The present report belongs in Part XVI, Non-metallic Mineral Products. It is punched to permit of filing in a ring binder along with others of the group. The reports in this group are:

- A — General Review, 25¢
- B — The Artificial Abrasives Industry, 25¢
- C — The Asbestos Products Industry, 25¢
- P — The Cement Manufacturing Industry (also in Mining), 25¢
- D — The Concrete Products Industry, 25¢
- E — The Glass and Glass Products Industry, 25¢
- K — The Gypsum Industry (also in Mining), 25¢
- Q — The Clay and Clay Products Industry (also in Mining), 25¢
- R — The Lime Industry (also in Mining), 25¢
- M — The Salt Industry (also in Mining), 25¢
- T — The Stone Industry (also in Mining), 25¢
- G — The Miscellaneous Non-metallic Mineral Products Industry, 25¢

THE ARTIFICIAL ABRASIVES INDUSTRY

1956

Factory shipments of all products made by the manufacturers in Canada of artificial abrasives and abrasives products were valued at \$46,023,192 in 1956, an increase of 8.2 per cent over the \$42,519,695 reported in the previous year.

There were seventeen firms engaged in manufacturing abrasives and other products during the year and of these, 12 were located in Ontario and 5 in Quebec.

The number of employees in the industry was 2,816 and payments in salaries and wages totalled \$11,746,942. Expenditures for manufacturing materials amounted to \$18,371,516 and \$4,921,814 were paid out for fuel and electricity.

Artificial abrasives were made by 4 plants in Ontario and 4 plants in Quebec. Shipments by these 8 works were valued at \$35,059,805 and included 181,830 tons of crude fused alumina at \$17,636,382; 80,467 tons of crude silicon carbide at \$10,430,549; and other products and by-products; such as ferro-silicon, firesand, abrasive wheels, etc. A total of

2,112 people were employed and salaries and wages paid out amounted to \$9,315,409.

Nine other plants were occupied chiefly in making abrasive products such as wheels, paper, plupstones and sharpening stones. Factory shipments of all products made in these establishments were valued at \$10,963,387. The number of employees was 704 and payments for salaries and wages amounted to \$2,431,533. The total value of Canada's output of abrasive wheels and segments was \$7,206,636.

Note: Figures for value added by manufacture, shown in Table 1, prior to 1952 were obtained by subtracting the cost of materials used, including fuel and electricity, from the value of production. In 1952 the gross value of production was replaced by value of factory shipments, f.o.b. plant. As no information on inventory change is available for 1952 and 1953, value added figures for these years were obtained by subtracting from the value of shipments in the cost of materials, fuel and electricity. In 1954 and later years information on the value of year-end inventory holdings at plant and plant warehouses was collected as part of the annual Census of Industry and information thus made available was taken into account in calculating the value added figures.

TABLE 1. Principal Statistics of the Artificial Abrasives Industry, Significant Years 1929-1956 and by Provinces, 1955 and 1956

Year and province	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost of fuel and electricity at works	Cost at plant of materials used	Value added by manufacture ¹	Gross selling value of products ¹
	No.	No.	\$	\$	\$	\$	\$
1929	12	328	1,270,898	373,063	2,905,923	5,182,955	8,961,951
1932	14	386	519,013	480,601	449,624	559,330	1,409,555
1937	16	1,239	1,995,589	1,222,529	4,351,854	8,599,968	14,174,351
1939	16	1,099	1,630,889	777,654	2,971,056	5,526,433	9,275,143
1943	15	3,336	6,453,709	2,988,814	11,581,923	22,039,191	36,609,923
1946	15	2,409	4,920,448	2,106,329	8,425,629	14,912,438	25,444,396
1949	18	2,543	6,830,763	2,182,097	10,649,694	14,368,217	27,700,008
1952	20	2,607	9,248,935	3,312,052	13,967,649	19,437,527	36,717,228
1953	13	2,742	9,900,748	4,051,134	16,869,606	25,333,137	46,253,877
1954	17	2,639	9,990,100	3,952,382	15,443,744	20,020,949	38,653,517
1955							
Quebec	5	347	1,328,332	1,184,831	2,059,604	3,434,395	7,593,903
Ontario	12	2,348	9,238,716	3,237,363	13,233,660	18,498,941	34,925,892
Canada	17	2,395	10,567,048	4,422,194	15,293,264	21,933,836	42,519,695
1956							
Quebec	5	332	1,597,189	1,563,332	2,840,149	3,231,796	7,469,187
Ontario	12	2,434	10,149,753	3,358,482	15,531,367	20,056,192	38,554,005
Canada	17	2,816	11,746,942	4,921,814	18,371,516	23,287,988	46,023,192

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.

1. See footnote to Text.

TABLE 2. Inventories,¹ by Provinces, 1956

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	\$	\$	\$	\$
Opening:				
Quebec	797,623	86,863	196,803	1,081,289
Ontario	3,741,287	955,730	2,137,841	6,834,858
Canada	4,538,910	1,042,593	2,334,644	7,916,147
Closing:				
Quebec	717,860	100,964	348,792	1,167,625
Ontario	4,211,308	393,933	2,591,674	7,696,975
Canada	4,929,237	994,897	2,940,466	8,864,600

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

(b) Beginning with 1954, information on the value of year-end inventory holdings at plant and plant warehouses is being collected as part of the annual Census of Industry. These data were formerly collected by a separate survey. The summarized results for the Artificial Abrasives Industry for the Year under review are shown in the above table.

(c) The opening inventory for 1956 does not agree with the closing inventory for 1955 because of minor adjustments reported on the 1956 returns. However, the value added figures for the previous year have not been recalculated to allow for the changes mentioned above.

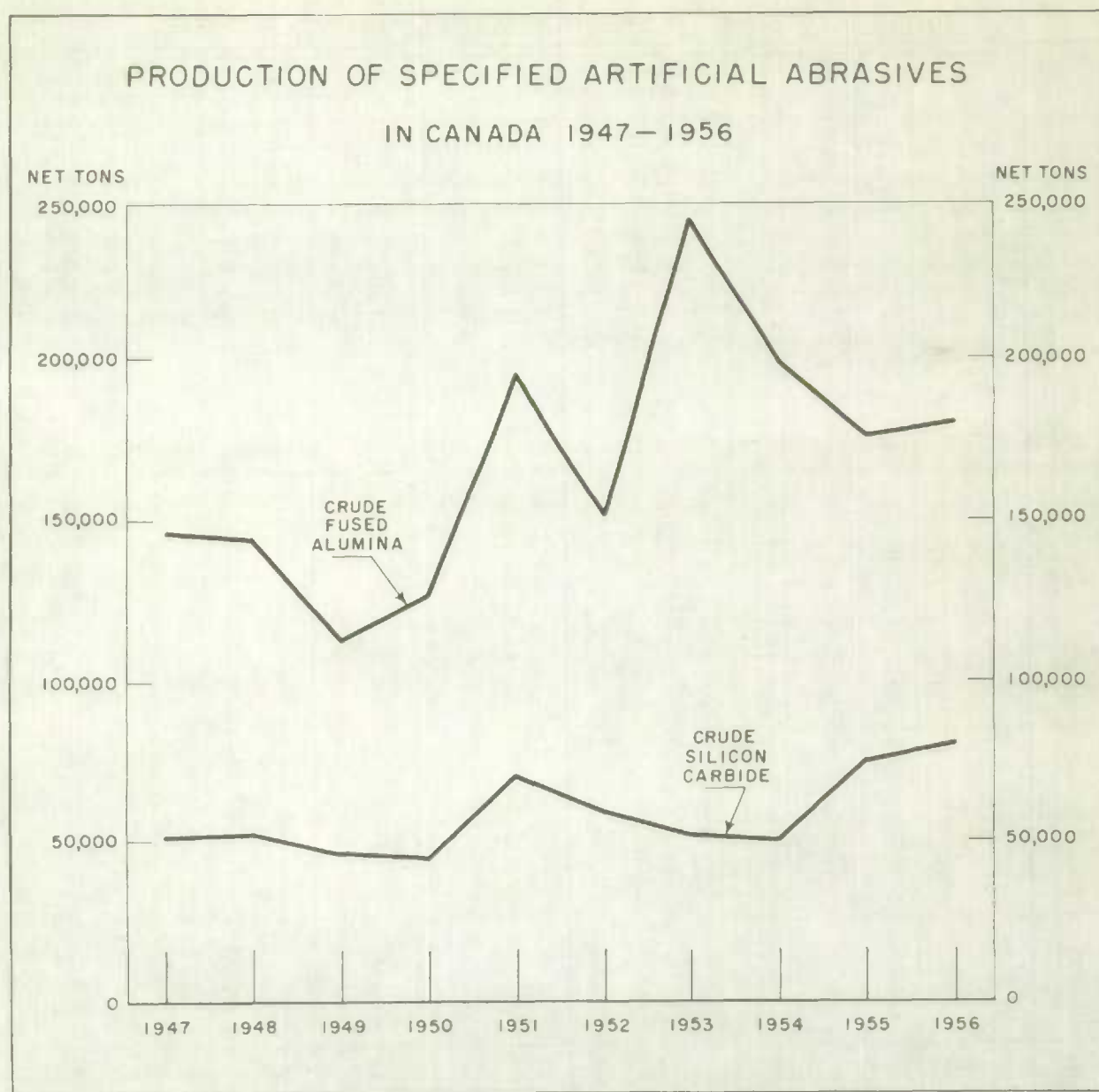
TABLE 3. Products of the Artificial Abrasives Industry, 1955 and 1956

Product	1955		1956	
	Short tons	Value of factory shipments	Short tons	Value of factory shipments
		\$		\$
Crude silicon carbide	74,947	9,631,788	80,467	10,430,549
Crude fused alumina	177,162	16,676,424	181,830	17,636,382
Silicon carbide firesand, etc.	409	32,757	304	25,537
Abrasive wheels and segments	—	5,666,352	—	7,206,636
Sharpening stones and files	—	252,519	—	268,886
Ferrosilicon	32,986	1,468,397	27,522	1,298,105
Other products ¹	—	8,741,458	—	9,157,047
Total	—	42,519,695	—	46,023,192

1. Includes abrasive cloth, abrasive paper, tiles, artificial pulpstones, boron carbide, fused magnesia, etc., each of which was reported by only one or two companies.

TABLE 4. Materials Used in the Artificial Abrasives Industry, 1955 and 1956

Material	Unit of measure	1955		1956	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Alumina, pure	ton	4,482	356,002	7,003	557,604
Bauxite	"	211,161	6,059,182	197,156	5,748,281
Boric acid glass	"	63	22,600	280	104,140
Coal (not for fuel)	"	9,128	90,549	4,072	46,676
Coke (not for fuel):					
Petroleum coke	ton	71,391	1,361,259	90,266	1,893,799
Pitch coke	"	4,119	117,935	5,075	149,897
Other coke	"	6,361	49,702	6,970	68,135
Electrodes	ton	4,158	1,080,466	3,608	1,039,757
Feldspar	"	11	897	Not separately specified in 1956	
Iron borings	"	15,988	391,830		
Salt	"	137	2,615	191	3,995
Sawdust	-	-	90,740	-	90,003
Silica sand	ton	97,968	866,373	121,583	1,039,980
Artificial abrasive grains:					
For wheels, paper, etc.:					
Fused alumina	ton	3,166	709,383	3,202	869,978
Silicon carbide	"	1,684	441,573	2,610	623,401
Natural abrasive grains:					
Garnet	lb.	538,168	65,043	613,995	76,185
Emery	"	161,817	13,309	125,858	10,258
Quartz of flint	"	573,145	19,696	598,898	21,025
Other	-	-	4,931	-	1,873
Bonding and cushioning materials:					
Clay bonds	lb.	852,783	55,072	1,077,849	72,719
Silicate	-	-	313	Not separately specified in 1956	
Elastic mixture	-	-	4,626		
Bakelite and synthetic resins	lb.	289,691	103,922	365,577	135,619
Lead for bushings	"	101,198	17,624	105,352	18,700
Glue, animal and hide	"	915,131	281,000	1,049,462	320,827
Other	-	-	-	-	40,610
Cotton cloth	-	-	511,509	-	561,832
Kraft paper and other paper	-	-	321,726	-	359,779
Containers and packing material	-	-	236,536	-	244,859
All other materials	-	-	2,016,846	-	3,785,824
Total	-	-	15,293,264	-	18,371,516

TABLE 5. Production¹ of Specified Artificial Abrasives, 1947-1956

Year	Crude silicon carbide		Crude fused alumina		Total	
	Quantity	Selling value at works	Quantity	Selling value at works	Quantity	Selling value at works
	tons	\$	tons	\$	tons	\$
1947	51,704	6,359,937	146,433	15,253,482	198,137	21,613,419
1948	52,896	6,921,197	144,838	15,309,651	197,734	22,230,484
1949	46,398	6,008,384	113,199	10,230,521	159,597	16,238,905
1950	44,761	6,316,299	126,923	12,197,308	171,684	18,513,607
1951	70,282	9,913,060	195,374	20,835,165	265,656	30,748,225
1952	59,277	8,275,099	152,086	16,643,519	211,363	24,918,618
1953	52,903	7,438,243	245,627	25,499,674	298,530	32,937,917
1954	50,321	6,944,862	199,857	18,883,589	250,178	25,828,451
1955	74,947	9,681,788	177,162	16,676,424	252,109	26,358,212
1956	80,467	10,430,549	181,830	17,636,382	262,297	28,066,931

1. Factory shipments since 1952.

TABLE 6. Production² of Abrasive Wheels and Segments¹, 1947-1956

Year	Selling value at works	Year	Selling value at works
	\$		\$
1947	3,574,477	1952	5,501,377
1948	3,703,470	1953	5,694,066
1949	3,826,726	1954	4,422,413
1950	4,683,163	1955	5,666,352
1951	5,655,676	1956	7,206,636

1. Does not include artificial pulpstones or sharpening stones.

2. Factory shipments since 1952.

TABLE 7. Principal Statistics, Classified According to Type of Ownership, 1955 and 1956

Type	Establish- ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$
1955					
Head offices		27	128,789	—	—
Individual ownership	1	2,668	10,438,259	15,293,264	42,519,695
Incorporated companies	16				
Total	17	2,695	10,567,048	15,293,264	42,519,695
1956					
Head offices		28	127,420	—	—
Individual ownership	1	2,788	11,619,522	18,371,516	46,023,192
Incorporated companies	16				
Total	17	2,816	11,746,942	18,371,516	46,023,192

TABLE 8. Principal Statistics of the Artificial Abrasives Industry, Grouped According to Selling Value of Factory Shipments, 1955 and 1956

Establishments reporting factory shipments of	Estab- lish- ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$
1955					
Head offices	—	27	128,789	—	—
Under \$200,000	3	17	48,285	47,744	176,081
\$200,000-\$999,999	4	152	621,702	432,096	2,109,782
\$1,000,000 and over	10	2,499	9,768,272	14,813,424	40,233,832
Total	17	2,695	10,567,048	15,293,264	42,519,695
1956					
Head offices	—	28	127,420	—	—
Under \$500,000	4	40	133,116	100,809	422,892
\$500,000-\$999,999	3	155	647,075	523,459	2,148,607
\$1,000,000 and over	10	2,593	10,839,331	17,747,248	43,451,693
Total	17	2,816	11,746,942	18,371,516	46,023,192

TABLE 9. Capital and Repair Expenditures in the Artificial Abrasives Industry, 1952-1956

Year	Capital expenditures		Sub-total	Repair and maintenance expenditures		Sub-total	Total capital and repair expenditures
	Construc- tion	Machinery and equipment		Construc- tion	Machinery and equipment		
	\$'000						
1952	1,410	2,011	3,421	139	1,494	1,633	5,054
1953	405	922	1,327	100	1,567	1,667	2,994
1954	411	958	1,369	93	1,582	1,675	3,044
1955	225	757	982	83	1,599	1,682	2,664
1956 ¹	264	660	924	92	633	725	1,649

1. Preliminary.

TABLE 10. Employees and Their Earnings in the Artificial Abrasives Industry, 1955 and 1956

	Number of employees					Earnings		
	Supervisory and office		Workmen		Total	Supervisory and office	Workmen	Total
	Male	Female	Male	Female				
1955						\$	\$	\$
Quebec	31	11	300	5	347	221,590	1,106,752	1,328,332
Ontario	387	168	1,704	89	2,348	2,565,564	6,673,152	9,238,716
Canada	418	179	2,004	94	2,693	2,787,144	7,779,904	10,567,048
1956								
Quebec	32	11	339	—	382	226,934	1,370,255	1,597,189
Ontario	431	160	1,742	101	2,434	3,022,739	7,127,014	10,149,753
Canada	463	171	2,081	101	2,816	3,249,673	8,497,269	11,746,942

TABLE 11. Production Workers by Months, 1955 and 1956

Month	1955			1956		
	Male	Female	Total	Male	Female	Total
	Number					
January	1,761	68	1,829	2,073	91	2,169
February	1,796	74	1,870	2,084	87	2,171
March	1,838	85	1,923	2,081	86	2,167
April	1,874	90	1,964	2,073	94	2,167
May	1,892	90	1,982	2,132	101	2,233
June	1,948	91	2,039	1,988	108	2,096
July	2,091	97	2,188	2,038	106	2,144
August	2,153	105	2,258	2,062	105	2,167
September	2,157	104	2,261	2,067	102	2,169
October	2,168	106	2,274	2,118	112	2,230
November	2,189	104	2,393	2,098	114	2,212
December	2,189	106	2,295	2,137	108	2,245
Average	2,004	94	2,098	2,081	101	2,182

TABLE 12. Imports of Abrasives and Abrasive Products, 1955 and 1956

	1955	1956
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures \$	1,999,035	2,333,133
Diamond dust or bort and black diamonds for borers \$	8,091,852	10,369,632
Diatomaceous earth or infusorial earth (Kieselguhr), ground or unground cwt.	443,157	421,550
\$	788,503	880,090
Emery in bulk, crushed or ground \$	207,659	242,834
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives \$	1,957,316	2,148,715
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives \$	269,846	381,823
Manufactures of emery or of artificial abrasives, n.o.p. \$	356,471	561,663
Grindstones, not mounted, and not less than 36 inches in diameter No.	196	250
\$	18,790	24,620
Grindstones, n.o.p. No.	2,084	2,030
\$	12,533	7,544
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground \$	214,358	242,656
Sandpaper, glass, flint and emery paper or emery cloth \$	1,032,845	1,053,800
Total \$	14,939,208	18,246,510

TABLE 13. Exports and Re-exports of Abrasives and Abrasive Products, 1955 and 1956

	1955	1956
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc. cwt.	1,353	3,500
\$	19,171	23,039
Abrasives, artificial, crude, including carborundum cwt.	5,155,494	5,319,820
\$	26,945,878	23,393,300
Abrasives, artificial, made up into wheels and stones \$	32,936	59,924
Diamonds, industrial, and diamond dust or bort ¹ \$	4,627,886	5,113,412
Sandpaper, glass, flint and emery paper, and emery cloth \$	441,760	689,233
Grindstones, manufactured \$	47,715	92,642
Total \$	32,115,416	34,371,600

1. All re-exports.

TABLE 14. Fuel and Electricity Used in the Artificial Abrasives and Abrasives Products Industry, 1956¹

Kind	Unit of measure	Quantity	Cost at works
			\$
Bituminous coal:			
Canadian	tons	4,448	51,324
Imported	tons	4,498	59,444
Anthracite coal	tons	318	5,811
Coke (For fuel only)	tons	547	8,205
Gasoline (Including gasoline used in cars and trucks)	Imp. gals.	71,253	25,059
Kerosene or coal oil	Imp. gals.	17,980	4,708
Fuel oil	Imp. gals.	678,677	88,394
Gas: (a) Liquefied petroleum gases	Imp. gals.	300	131
(b) Other manufactured gas	1,000 cu. ft.	8,517	8,606
(c) Natural gas	1,000 cu. ft.	32,795	32,582
Electricity purchased	K.w.h.	1,127,216,766	4,637,550
Total	—	—	4,921,814

1. Last collected in 1953.

List of Firms in the Artificial Abrasives Industry, 1956

Name of firm	Address
(a) ARTIFICIAL ABRASIVES	
Canadian Carborundum Company, Limited ¹	P.O. Box 337, Niagara Falls, New York, U.S.A. Plants at Shawinigan Falls, Quebec, and Niagara Falls, Ontario
Electro Refractories & Abrasives Canada Ltd.	Cap-de-la-Madeleine, Quebec
The Exolon Company	East Niagara St., Tonawanda, New York, U.S.A. Plant at Thorold, Ontario
Lionite Abrasives Ltd.	Niagara Falls, Ontario
Norton Company	1 New Bond St., Worcester, Massachusetts, U.S.A. Plants at Chippawa, Ontario, and Cap-de-la-Madeleine, Quebec
Simonds Canada Abrasive Company Limited	Arvida, Quebec
(b) ABRASIVE PRODUCTS	
Bay State Abrasive Products Co. (Canada) Ltd.	188 Pearl St., Brantford, Ontario
Behr-Manning (Canada) Limited	Brantford, Ontario
Canadian Grinding Wheel Co. Ltd.	700 Rennie St., Hamilton, Ontario
Canada Sand Papers Limited	King and Argyle Sts., Preston, Ontario Plant at Plattsville, Ontario
Dominion Abrasive Wheel Co. Limited	49 Main St., Mimico, Ontario
Lion Grinding Wheels, Division of Canada Saw Co., Ltd.	192 Pearl St. E., Brockville, Ontario
Norton Company of Canada Limited	3 Beach Road, Hamilton, Ontario
Plasticraft Co.	2027 St. Timothee St., Montreal, Quebec
Wright Abrasives Ltd.	2 Adam St., Hamilton, Ontario

1. This company also makes abrasive wheels, etc., at its Niagara Falls works and all operations at that point are covered by the one report.



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