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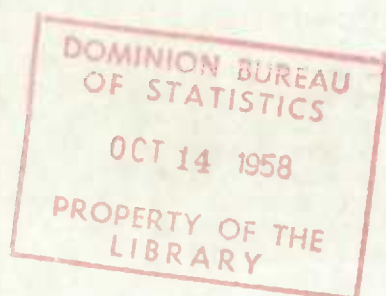
ANNUAL

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THE ARTIFICIAL ABRASIVES INDUSTRY

1957



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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

1957

Factory shipments of all products made by the manufacturers in Canada of artificial abrasives and abrasive products were valued at \$51,049,441 in 1957, an increase of 10.9 per cent over the \$46,023,192 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 2,851 and payments in salaries and wages totalled \$12,668,517. Expenditures for manufacturing materials amounted to \$20,333,646 and \$5,421,469 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 \$40,412,849 and included 218,187 tons of crude fused alumina at \$21,902,425; 83,321 tons of crude silicon carbide at \$11,828,856 and other products and by-products such as ferro-silicon, firesand, abrasive wheels, etc. A total of 2,158 people were employed and salaries and wages paid amounted to \$9,911,021.

Nine other plants were occupied chiefly in making abrasive products such as wheels, paper, pulpstones and sharpening stones. Factory shipments of all products made in these establishments were valued at \$10,636,592. The number of employees was 693 and payments for salaries and wages amounted to \$2,757,496. The total value of Canada's output of abrasive wheels and segments was \$7,100,348.

TABLE 1. Principal Statistics of the Artificial Abrasives Industry, Significant Years 1929-1957 and by Provinces, 1956 and 1957

Year and province	Estab- lish- ments	En- 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
	numero		\$	\$	\$	\$	\$
1929	12	828	1,270,898	873,068	2,905,928	5,182,955	8,961,951
1932	14	386	519,013	480,601	449,624	559,330	1,489,555
1937	16	1,289	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	6,453,769	2,988,814	11,581,923	22,039,191	36,609,928
1946	15	2,409	4,929,448	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	14,868,217	27,700,008
1953	18	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	17	2,695	10,567,048	4,422,194	15,293,264	21,933,836	42,519,695
1956							
Quebec	5	382	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
1957							
Quebec	5	391	1,793,268	1,758,584	3,142,244	3,964,838	8,923,822
Ontario	12	2,460	10,875,249	3,662,885	17,191,402	20,937,731	42,125,619
Canada	17	2,851	12,668,517	5,421,469	20,333,646	24,902,569	51,049,441

¹ Due to lack of inventory data, figures for "Value added by manufacture" prior to 1954 were obtained by subtracting the cost of materials used, including fuel and electricity, from the total value of factory shipments. In 1954 and 1955 the "Value added" adjustment incorporated the increase or decrease to shipments values resulting from changes in the value of inventories over the period. For these two years, the adjustments that were made used only the change in finished product inventory owned by manufacturers. Beginning with 1956 the calculation of the "Value added" figure was further adjusted to take into account the "Goods in process" as well as the finished goods held at plant or plant warehouse.

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,¹ by Provinces, 1957

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	\$	\$	\$	\$
Opening:				
Quebec	718,831	100,923	348,207	1,167,961
Ontario	4,211,368	893,933	2,606,194	7,711,495
Canada	4,930,199	994,856	2,954,401	8,879,456
Closing:				
Quebec	923,927	61,839	329,135	1,314,901
Ontario	4,186,218	845,352	2,321,174	7,352,744
Canada	5,110,145	907,191	2,650,309	8,667,645

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 1957 does not agree with the closing inventory for 1956 because of minor adjustments reported on the 1957 returns. However, the value added figures for the previous year have not been recalculated to allow for the changes mentioned above.

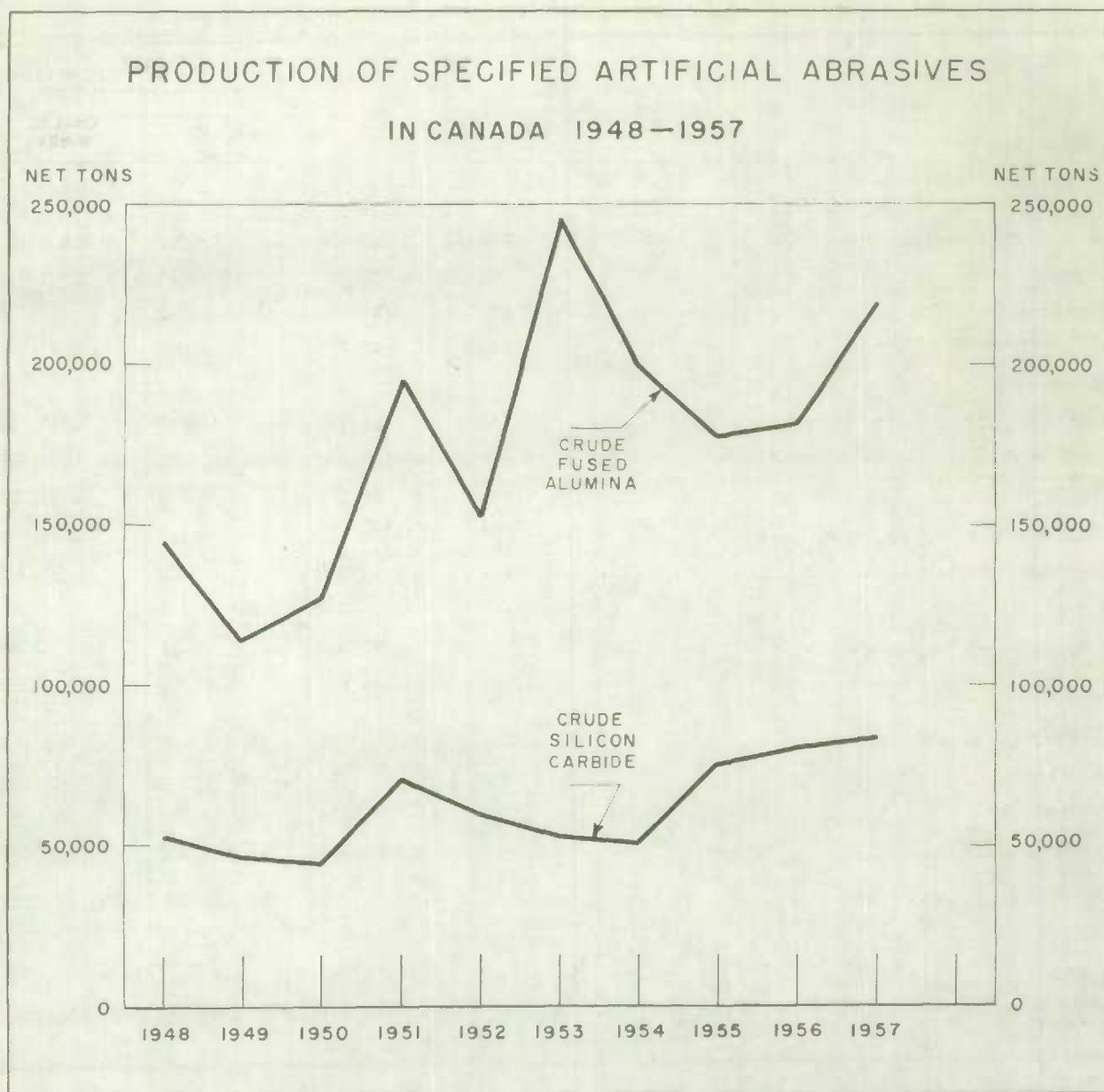
TABLE 3. Products of the Artificial Abrasives Industry, 1956 and 1957

Product	1956		1957	
	Short tons	Value of factory shipments	Short tons	Value of factory shipments
		\$		\$
Crude silicon carbide	80,467	10,430,549	83,321	11,828,856
Crude fused alumina	181,830	17,636,382	218,187	21,902,425
Silicon carbide firesand, etc.	304	25,587	343	29,916
Abrasive wheels and segments	—	7,206,636	—	7,100,348
Sharpening stones and files	—	268,886	—	308,067
Ferrosilicon	27,522	1,298,105	23,789	1,337,232
Other products ¹	—	9,157,047	—	8,542,597
Total	—	46,023,192	—	51,049,441

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, 1956 and 1957

Material	1956		1957	
	Quantity	Cost at works	Quantity	Cost at works
		\$		\$
Alumina, pure ton	7,003	557,604	10,766	1,013,621
Bauxite "	197,156	5,748,281	232,528	7,031,789
Boric acid glass "	280	104,140	165	61,539
Coal (not for fuel) "	4,072	46,676	3,030	35,447
Coke (not for fuel):				
Petroleum coke "	90,266	1,893,799	92,337	2,100,606
Pitch coke "	5,075	149,897	12,253	217,900
Other coke "	6,970	68,135	6,025	62,728
Electrodes "	3,608	1,039,757	4,118	1,195,777
Iron borings "	14,452	485,760	16,654	563,851
Salt "	191	3,995	115	2,000
Sawdust —	—	90,003	—	97,901
Silica sand ton	121,583	1,039,980	125,534	1,134,566
Artificial abrasive grains:				
For wheels, paper, etc.:				
Fused alumina "	3,202	869,978	2,748	798,644
Silicon carbide "	2,610	623,401	2,182	621,083
Natural abrasive grains:				
Garnet lb.	613,995	76,185	434,474	59,276
Emery "	125,858	10,258	121,015	10,946
Quartz of flint "	598,898	21,025	296,161	10,065
Other —	—	1,873	—	1,800
Bonding and bushing materials:				
Clay bonds lb.	1,077,849	72,719	885,921	63,828
Bakelite and synthetic resins "	365,577	135,619	428,944	161,488
Lead for bushings "	105,352	18,700	70,924	11,135
Glue, animal and hide "	1,049,462	320,827	709,766	196,201
Other —	—	40,610	—	39,878
Cotton cloth —	—	561,832	—	160,072
Kraft paper and other paper —	—	359,779	—	303,735
Containers and packing material —	—	244,859	—	248,927
All other materials —	—	3,785,824	—	4,128,843
Total —	—	18,371,516	—	20,333,646

**TABLE 5. Production¹ of Specified Artificial Abrasives, 1948-1957**

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	\$
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
1957	83,321	11,828,856	218,187	21,902,425	301,508	33,731,281

¹ Factory shipments since 1952.

TABLE 6. Production¹ of Abrasive Wheels and Segments², 1948-1957

Year	Selling value at works	Year	Selling value at works
	\$		\$
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
1952	5,501,377	1957	7,100,348

¹ Factory shipments since 1952.² Does not include artificial pulpstones or sharpening stones.**TABLE 7. Principal Statistics, Classified According to Type of Ownership, 1956 and 1957**

Type	Establish- ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		\$	\$	\$
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
1957					
Individual ownership	17	2,851	12,668,517	20,333,646	51,049,441
Incorporated companies					
Total	17	2,851	12,668,517	20,333,646	51,049,441

TABLE 8. Principal Statistics of the Artificial Abrasives Industry, Group According to Selling Value of Factory Shipments, 1956 and 1957

Establishments reporting factory shipments of	Estab- lish- ments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
	number		\$	\$	\$
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
1957					
Under \$500,000	4	39	126,110	99,571	440,842
\$500,000-\$999,999	3	153	658,968	562,958	2,232,152
\$1,000,000 and over	10	2,659	11,883,439	19,671,117	48,376,447
Total	17	2,851	12,668,517	20,333,646	51,049,441

TABLE 9. Capital and Repair Expenditures in the Artificial Abrasives Industry, 1953-1957

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						
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	331	742	1,073	114	2,140	2,254	3,327
1957 ¹	1,254	1,827	3,081	82	955	1,037	4,118

¹ Preliminary.**TABLE 10. Employees and their Earnings in the Artificial Abrasives Industry, 1956 and 1957**

	Number of employees					Earnings		
	Supervisory and office		Workmen		Total	Supervisory and office	Workmen	Total
	Male	Female	Male	Female				
1956						\$	\$	\$
Quebec	32	11	339	—	382	226,934	1,370,255	1,597,189
Ontario	431	150	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
1957								
Quebec	34	10	347	—	391	251,525	1,541,743	1,793,268
Ontario	431	174	1,765	90	2,460	3,479,765	7,395,484	10,875,249
Canada	465	184	2,112	90	2,851	3,731,290	8,937,227	12,668,517

TABLE 11. Production Workers by Months, 1956 and 1957

Month	1956			1957		
	Male	Female	Total	Male	Female	Total
	number					
January	2,078	91	2,169	2,152	96	2,248
February	2,084	87	2,171	2,137	88	2,225
March	2,081	86	2,167	2,151	100	2,251
April	2,073	94	2,167	2,157	97	2,254
May	2,132	101	2,233	2,194	95	2,289
June	1,988	108	2,096	2,196	94	2,290
July	2,038	106	2,144	2,174	94	2,268
August	2,062	105	2,167	2,179	94	2,273
September	2,067	102	2,169	2,116	80	2,196
October	2,118	112	2,230	1,988	83	2,071
November	2,098	114	2,212	1,961	80	2,041
December	2,137	108	2,245	1,927	78	2,005
Average	2,081	101	2,182	2,112	90	2,202

TABLE 12. Imports of Abrasives and Abrasive Products, 1956 and 1957

		1956	1957
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures	\$	2, 333, 133	2, 199, 990
Diamond dust or bort and black diamonds for borers	\$	10, 369, 632	10, 825, 940
Diatomaceous earth or infusorial earth (Kieselguhr), ground or unground ..	cwt. \$	421, 550 880, 090	505, 767 1, 077, 657
Emery in bulk, crushed or ground	\$	242, 834	248, 887
Grinding wheels, manufactured by the bonding together of either natural or Artificial abrasives	\$	2, 148, 715	1, 947, 311
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives	\$	381, 823	407, 882
Manufactures of emery or of artificial abrasives, n.o.p.	\$	561, 663	625, 769
Grindstones, not mounted, and not less than 36 inches in diameter	No. \$	250 24, 620	141 12, 982
Grindstones, n.o.p.	No. \$	2, 080 7, 544	1, 575 6, 748
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground	\$	242, 656	254, 427
Sandpaper, glass, flint and emery paper or emery cloth	\$	1, 053, 800	725, 652
Total	\$	18, 246, 510	18, 333, 245

TABLE 13. Exports and Re-exports of Abrasives and Abrasive Products, 1956 and 1957

		1956	1957
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc.	cwt. \$	3, 500 23, 039	3, 100 25, 238
Abrasives, artificial, crude, including carborundum	cwt. \$	5, 319, 820 28, 393, 300	6, 131, 379 33, 920, 445
Abrasives, artificial, made up into wheels and stones	\$	59, 924	50, 944
Diamonds, industrial, and diamond dust or bort ¹	\$	5, 113, 412	7, 134, 669
Sandpaper, glass, flint and emery paper, and emery cloth	\$	689, 283	670, 980
Grindstones, manufactured	\$	92, 642	45, 822
Total	\$	34, 371, 600	41, 848, 098

¹ All re-exports.

TABLE 14. Fuel and Electricity Used in the Artificial Abrasives and Abrasives Products Industry, 1956 and 1957

Kind	1956		1957	
	Quantity	Cost at works	Quantity	Cost at works
		\$		\$
Bituminous coal:				
Canadian ton	4, 448	51, 324	2, 546	28, 127
Imported "	4, 498	59, 444	4, 991	82, 135
Anthracite coal..... "	318	5, 811	283	5, 305
Coke (for fuel only)..... "	547	8, 205	354	4, 250
Gasoline (including gasoline used in cars and trucks) Imp. gal.	71, 253	25, 059	73, 939	26, 740
Kerosene or coal oil..... "	17, 980	4, 708	9, 308	2, 249
Fuel oil "	678, 677	88, 394	729, 553	99, 356
Gas: (a) Liquefied petroleum gases "	300	131	5, 885	2, 221
(b) Other manufactured gas M cu. ft.	8, 517	8, 606	10, 784	10, 560
(c) Natural gas "	32, 795	32, 582	31, 109	32, 341
Electricity purchased kwh.	1, 127, 216, 766	4, 637, 550	1, 162, 881, 191	5, 127, 005
Other fuel —	—	—	—	1, 180
Total —	—	4, 921, 814	—	5, 421, 469

List of Firms in the Artificial Abrasives Industry, 1957

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
Simonds 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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