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CANADA

THE ARTIFICIAL ABRASIVES INDUSTRY

1955

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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

1955

Factory shipments of all products made by the manufacturers in Canada of artificial abrasives and abrasives products were valued at $42,519,695 in 1955, an increase of 10.0 per cent over the $38,653,517 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 2,695 and payments in salaries and wages totalled $10,567,048. Expenditures for manufacturing materials amounted to $15,293,264 and $4,422,194 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 $33,292,583 and included 177,162 tons of crude fused alumina at $16,676,424; 74,947 tons of crude silicon carbide at $9,681,788; and other products and by-products, such as ferrosilicon, firesand, abrasive wheels, etc. A total of 2,076 people was employed and salaries and wages paid out amounted to $8,369,887.

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 $9,227,112. The number of employees was 619 and payments for salaries and wages amounted to $2,197,161. The total value of Canada's output of abrasive wheels and segments was $5,666,352.

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 the cost of materials, fuel and electricity. In 1954 and 1955 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 for 1954 and 1955.

TABLE 1. Principal Statistics of the Artificial Abrasives Industry, Significant Years 1929-1955, and by Provinces, 1954 and 1955

Year and province	Establishments	Employees	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	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
1951	19	2,989	9,675,282	3,819,109	17,668,167	23,433,673	44,920,949
1952	20	2,607	9,248,935	3,312,052	13,967,649	19,437,527	36,717,228
1953	18	2,742	9,900,748	4,051,134	16,869,606	25,333,137	46,253,877
1954							
Quebec	5	365	1,343,262	1,124,745	2,230,893	3,151,356	6,078,914
Ontario	12	2,274	8,646,838	2,827,637	13,212,851	16,869,593	32,574,603
Canada	**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	3,434,895	7,593,803
Ontario	12	2,348	9,238,716	3,237,363	13,233,660	18,498,941	34,925,892
Canada	**17**	**2,695**	**10,567,048**	**4,422,194**	**15,293,264**	**21,933,836**	**42,519,695**

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, 1955

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	$	$	$	$
Opening:				
Quebec	677,287	72,467	1,111,276	1,861,030
Ontario	3,839,558	681,722	2,093,769	6,615,049
Canada	**4,516,845**	**754,189**	**3,205,045**	**8,476,079**
Closing:				
Quebec	797,623	86,863	196,803	1,081,289
Ontario	3,741,868	955,730	2,137,841	6,835,439
Canada	**4,539,491**	**1,042,593**	**2,334,644**	**7,916,728**

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 1955 does not agree with the closing inventory for 1954 because of minor adjustments reported on the 1955 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, 1954 and 1955

Product	1954		1955	
	Short tons	Value of factory shipments	Short tons	Value of factory shipments
		$		$
Crude silicon carbide	50,321	6,944,862	74,947	9,681,788
Crude fused alumina	199,857	18,883,589	177,162	16,676,424
Silicon carbide firesand, etc.	871	103,723	409	32,757
Abrasive wheels and segments	–	4,422,413	–	5,666,352
Sharpening stones and files	–	234,575	–	252,519
Ferrosilicon	22,830	937,090	32,986	1,468,397
Other products[1]	–	7,127,265	–	8,741,458
Total	–	**38,653,517**	–	**42,519,695**

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, 1954 and 1955

Material	Unit of measure	1954		1955	
		Quantity	Cost at works	Quantity	Cost at works
			$		$
Alumina, pure	ton	5,384	426,820	4,482	356,002
Bauxite	"	225,580	6,964,785	211,161	6,059,182
Boric acid glass	"	63	21,959	63	22,600
Coal (not for fuel)	"	7,255	71,080	9,128	90,549
Coke (not for fuel):					
Petroleum coke	ton	56,321	1,218,742	71,391	1,361,259
Pitch coke	"	3,581	102,440	4,119	117,935
Other coke	"	7,719	59,765	6,361	49,702
Electrodes	ton	4,266	1,055,939	4,158	1,080,466
Feldspar	"	5	250	11	897
Iron borings	"	16,169	463,655	15,988	391,830
Salt	"	101	2,413	137	2,515
Sawdust	—	—	68,716	—	90,740
Silica sand	ton	81,616	730,790	97,968	866,373
Artificial abrasive grains:					
For wheels, paper, etc.:					
Fused alumina	ton	2,262	572,071	3,166	709,388
Silicon carbide	"	1,592	411,359	1,684	441,573
Natural abrasive grains:					
Garnet	lb.	457,250	49,616	538,168	65,043
Emery	"	127,515	10,162	161,817	13,309
Quartz or flint	"	392,073	12,602	573,145	19,696
Other	—	—	1,671	—	4,931
Bonding and bushing materials:					
Clay bonds	lb.	769,757	48,789	852,783	55,072
Silicate	—	—	249	—	313
Elastic mixture	—	—	3,719	—	4,626
Bakelite and synthetic resins	lb.	176,761	60,458	289,691	103,922
Lead for bushings	"	68,942	10,612	101,198	17,624
Glue, animal and hide	"	703,781	219,963	915,131	281,000
Cotton cloth	—	—	340,908	—	511,509
Kraft paper and other paper	—	—	247,466	—	321,726
Containers and packing material	—	—	171,615	—	236,536
All other materials	—	—	2,095,131	—	2,016,846
Total	—	—	**15,443,744**	—	**15,293,264**

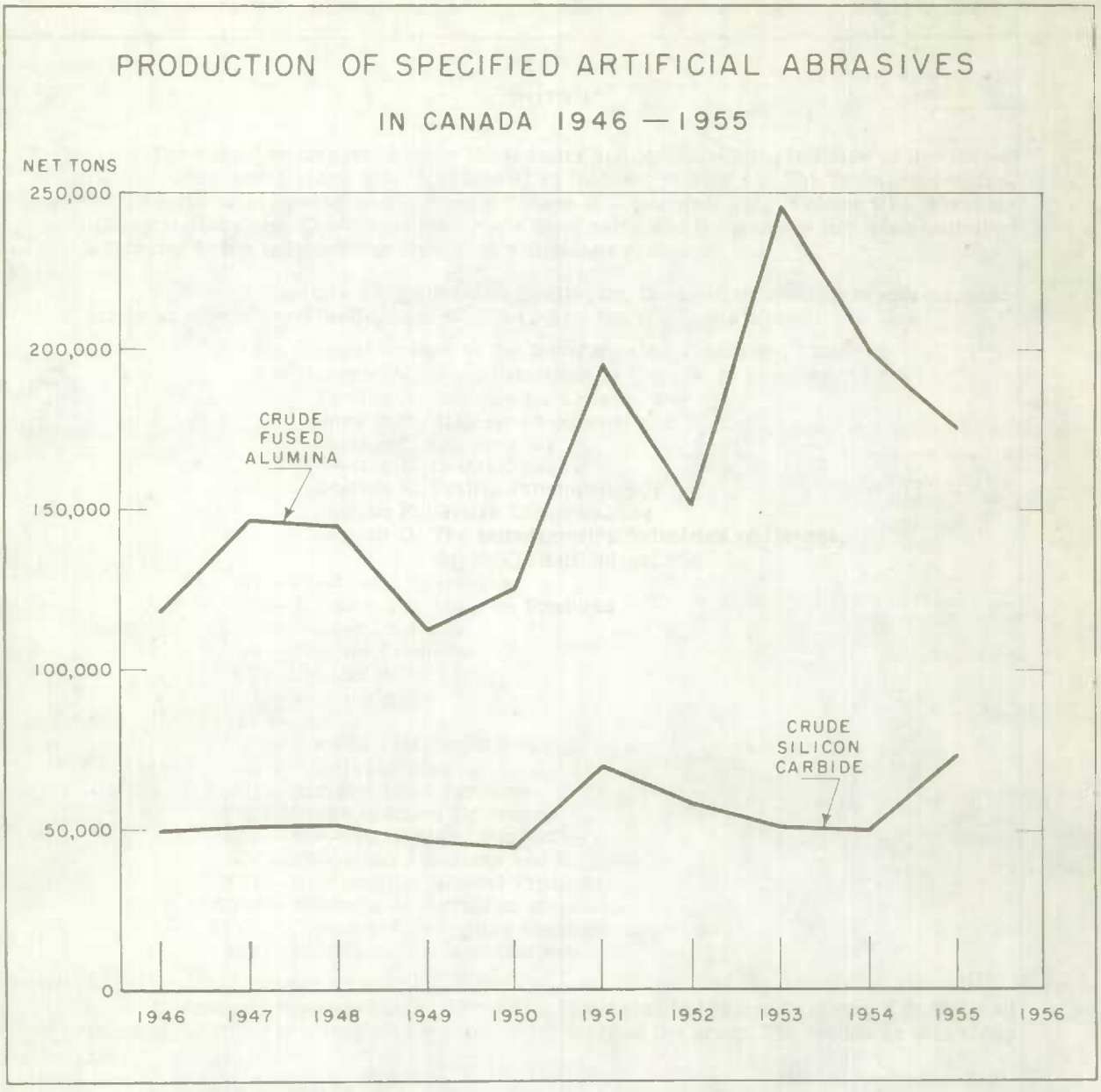

TABLE 5. Production[1] of Specified Artificial Abrasives, 1946-1955

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	$
1946	49, 953	5, 961, 490	119, 223	12, 310, 247	169, 176	18, 271, 737
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, 213

1. Factory shipments since 1952.

TABLE 6. Production[2] of Abrasive Wheels and Segments[1], 1946-1955

Year	Selling value at works	Year	Selling value at works
	$		$
1946	2,922,089	1951	5,655,676
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

1. Does not include artificial pulpstones or sharpening stones.
2. Factory shipments since 1952.

TABLE 7. Principal Statistics, Classified According to Type of Ownership, 1954 and 1955

Type	Establishments	Employees	Earnings	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	$	$	$
1954					
Head offices		27	138,858	–	–
Individual ownership	1	2,611	9,851,242	15,443,744	38,653,517
Incorporated companies	16				
Total	**17**	**2,638**	**9,990,100**	**15,443,744**	**38,653,517**
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**

TABLE 8. Principal Statistics of the Artificial Abrasives Industry, Grouped According to Size of Establishment, 1954 and 1955

Establishments having a production of	Establishments	Employees	Earnings	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	$	$	$
1954					
Head offices	–	27	138,858	–	–
Under $200,000	4	29	98,578	66,650	316,517
$200,000-$999,999	4	273	990,081	736,107	2,369,235
$1,000,000 and over	9	2,309	8,762,583	14,640,987	35,967,765
Total	**17**	**2,638**	**9,990,100**	**15,443,744**	**38,653,517**
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**

TABLE 9. Capital and Repair Expenditures in the Artificial Abrasives Industry, 1951-1955

Year	Capital expenditures		Sub-total	Repair and maintenance expenditures		Sub-total	Total capital and repair expenditures
	Construction	Machinery and equipment		Construction	Machinery and equipment		
	$'000						
1951	726	2,247	2,973	196	1,297	1,493	4,466
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[1]	198	713	911	76	676	752	1,663

1. Preliminary.

TABLE 10. Employees and Their Earnings in the Artificial Abrasives Industry, 1954 and 1955

	Number of employees					Earnings		
	Supervisory and office		Workmen		Total	Supervisory and office	Workmen	Total
	Male	Female	Male	Female				
						$	$	$
1954								
Quebec	33	12	315	5	365	210,664	1,132,598	1,343,262
Ontario	382	164	1,663	64	2,273	2,300,076	6,346,762	8,646,838
Canada	**415**	**176**	**1,978**	**69**	**2,638**	**2,510,740**	**7,479,360**	**9,990,100**
1955								
Quebec	31	11	300	5	347	221,580	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**	**2,695**	**2,787,144**	**7,779,904**	**10,567,048**

TABLE 11. Production Workers by Months, 1954 and 1955

Month	1954			1955		
	Male	Female	Total	Male	Female	Total
	Number					
January	2,057	70	2,127	1,761	68	1,829
February	2,093	73	2,166	1,796	74	1,870
March	2,073	80	2,153	1,838	85	1,923
April	2,080	80	2,160	1,874	90	1,964
May	2,107	80	2,187	1,892	90	1,982
June	2,013	77	2,090	1,948	91	2,039
July	2,022	62	2,084	2,091	97	2,188
August	2,026	64	2,090	2,153	105	2,258
September	1,890	65	1,955	2,157	104	2,261
October	1,828	64	1,892	2,168	106	2,274
November	1,796	63	1,859	2,189	104	2,393
December	1,753	64	1,817	2,189	106	2,295
Average	**1,978**	**69**	**2,047**	**2,004**	**94**	**2,098**

TABLE 12. Imports of Abrasives and Abrasive Products, 1954 and 1955

—		1954	1955
Artificial abrasive grains, crushed or ground, for use in Canadian manufactures	$	1,552,631	1,989,035
Diamond dust or bort and black diamonds for borers	$	6,129,455	8,091,852
Diatomaceous earth or infusorial earth (Kieselguhr), ground or unground	cwt.	387,459	443,157
	$	664,016	788,503
Emery in bulk, crushed or ground	$	200,511	207,659
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives	$	1,639,289	1,957,316
Grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives	$	243,798	269,846
Manufactures of emery or of artificial abrasives, n.o.p.	$	314,581	356,471
Grindstones, not mounted, and not less than 36 inches in diameter	No.	194	196
	$	16,630	18,790
Grindstones, n.o.p.	No.	1,241	2,084
	$	9,520	12,533
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground	$	163,028	214,358
Sandpaper, glass, flint and emery paper or emery cloth	$	696,740	1,032,845
Total	$	**11,630,199**	**14,939,208**

TABLE 13. Exports and Re-exports of Abrasives and Abrasive Products, 1954 and 1955

—		1954	1955
Abrasives, natural, n.o.p., in ore or bulk, crushed or ground, including infusorial earth, rotten stone, tripoli, etc.	cwt.	296	1,353
	$	5,944	19,171
Abrasives, artificial, crude, including carborundum	cwt.	5,163,526	5,155,494
	$	27,228,303	26,945,878
Abrasives, artificial, made up into wheels and stones	$	25,458	32,986
Diamonds, industrial, and diamond dust or bort[1]	$	4,277,394	4,627,886
Sandpaper, glass, flint and emery paper, and emery cloth	$	450,048	441,780
Grindstones, manufactured	$	96,178	47,715
Total	$	**32,083,325**	**32,115,416**

1. All re-exports.

List of Firms in the Artificial Abrasives Industry, 1955

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.	245 Kenilworth Ave. S., 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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