

DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH
OTTAWA - CANADA

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THE CLAY AND CLAY PRODUCTS INDUSTRY, 1938.

The Clay and Clay Products Industry in Canada is classified into two divisions: (1) production from domestic clays, which includes the production of refractories, building brick, structural tile, floor tile, roofing tile, drain tile, sewer pipe, and pottery, and (2) production from imported clays, which includes the manufacture of porcelain insulators, refractories, earthenware, pottery, and ceramic floor and wall tile.

A total of 173 plants representing a total capital investment of \$22,758,848 operated in the domestic and imported clay products industries in Canada during 1938. These two industries provided employment for 3,405 persons during the year; their earnings totalled \$3,304,742. The combined production in 1938 was valued at \$7,584,972 compared with \$8,116,040 in 1937.

1. PRODUCTION FROM DOMESTIC CLAYS, 1938.

The gross value of Canadian producers' sales of domestic clay products totalled \$4,536,084 in 1938 compared with \$4,516,859 in 1937 and \$13,904,643 the all time high record value established in 1939. Commercial production of domestic clay products in 1938 was reported from every province except Prince Edward Island; no output of these materials has as yet been officially recorded for the Yukon and Northwest Territories. Of the total value of Canadian sales in 1938, Ontario and Quebec firms contributed \$2,083,496 and \$1,022,194, respectively.

Sales of building brick during 1938 totalled 148,807 thousand, valued at \$2,341,443. Sewer pipe shipments aggregated \$778,107; hollow blocks, roofing and floor tile, \$611,942; drain tile, \$322,774 and pottery, including earthenware, \$235,890. Production of bentonite in 1938 amounted to 1,179 short tons, valued at \$3,659, of which 1,136 tons came from deposits located in Alberta and 43 tons from British Columbia. Fireclay was mined in Nova Scotia, New Brunswick, Saskatchewan and British Columbia and sales of this material totalled 2,344 short tons, valued at \$17,243, compared with 4,123 short tons at \$26,081 in 1937. Firebrick made from Canadian clays in 1938 numbered 2,213 thousand, worth \$113,581.

The number of firms reported as active in the Canadian domestic clay products industry totalled 145 in 1938, of which 84 were located in Ontario, 19 in Quebec, 12 in British Columbia, 10 in Alberta and the balance in Nova Scotia, New Brunswick, Saskatchewan and Manitoba. Capital employed by the industry as a whole was reported at \$18,068,542; employees numbered 2,242 and salaries and wages paid amounted to \$2,110,233. Fuel and electricity used during the year were valued at \$939,190 and chemicals and various other process supplies consumed were appraised at \$114,659.

The following information relating to Canadian clays is from a report prepared by the Bureau of Mines, Ottawa "Common clays suitable for the production of building brick and tile are found in all the provinces of Canada. The largest producing area in Canada of stoneware clays or semi-fireclays lies in the vicinity of Eastend and Willows in Saskatchewan; stoneware clays and moderately refractory fireclays occur near Shubenacadie and Musquodoboit, Nova Scotia. Stoneware clays, or low-grade fireclays, are also known to occur near Williams Lake, Quesnel and Chimney Creek Bridge in British Columbia; in the Cypress Hills of Alberta; and near Swan River, Manitoba. Fireclay refractories are manufactured from domestic clay at two large and a few small plants in Canada; near Vancouver, B. C., a high grade, moderately plastic fireclay is obtained by underground mining from the clay beds in the Sumas mountains. At another plant at Claybank, Saskatchewan, the highly plastic refractory clays recovered by selective mining from the "white mud" beds of Southern Saskatchewan are used. Small quantities of the most refractory clay in the deposits near Shubenacadie, N. S., are mined for refractory use and the Musquodoboit clay is utilized to some extent for the production of stove linings.

"China clay has been produced commercially in Canada only from the vicinity of St. Remi d'Amherst, Papineau County, Quebec. Important deposits of high-grade plastic white burning clays, and buff-burning clays, occur on the Mattagami, Abitibi, and Missinaibi Rivers in Northern Ontario; some may be classed as china clays, some as fireclays and others as ball clays. They have attracted considerable interest but have not yet been developed commercially, owing to their remoteness from industrial centres, and to a lack of transportation facilities. In British Columbia, along the Fraser River, about 25 miles above Prince George, is an extensive deposit of high-grade clay, parts of which yield a grade of china clay comparing favourably with the best found on this continent. Ball clays of high bond strength occur in the white mud beds of southern Saskatchewan."

Imports into Canada of clays and various clay products in 1938 were appraised at \$7,657,202 compared with \$9,108,976 in 1937; of the 1938 imports those from the United Kingdom were valued at \$4,050,397 and those from the United States at \$3,064,904. Included in the 1938 imports were 37,940 tons of china clay valued at \$324,933; 54,175 tons of fireclay at \$181,221; other clays, \$211,586; pottery and chinaware, \$4,043,852 and firebrick (other than chrome and magnesite) \$1,057,649. The value of clay products exported from Canada in 1938 was \$546,005, of which \$456,897 represented porcelaine insulators.

Table 1 - PRINCIPAL STATISTICS OF THE DOMESTIC CLAY PRODUCTS INDUSTRY IN CANADA, 1937 and 1938.

	1937	1938
Number of plants	143	152
Capital employed \$	20,427,232	18,068,542
Number of employees - On salary	261	278
On wages	2,026	1,964
Total	2,287	2,242
Salaries and wages - Salaries	471,891	525,502
Wages	1,622,901	1,584,731
Total	2,094,792	2,110,233
Selling value of products (gross)	4,516,859	4,536,084
Cost of fuel and purchased electricity ..	1,032,755	939,190
Cost of process supplies	103,568	114,659
Net value of sales	3,380,536	3,482,235

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY,
1935 - 1938.

Province and Year	Number of firms	Capital employed \$	Number of em- ployees	Salaries and wages paid \$	Cost of process supplies used \$	Cost of fuel and elec- tricity \$	Net value of sales \$
<u>NOVA SCOTIA -</u>							
1935 ...	5	808,602	110	98,921	906	50,264	219,308
1936 ...	5	908,162	125	107,871	603	58,773	295,878
1937 ...	5	971,394	164	141,754	2,514	73,200	331,132
1938 ...	5	928,933	146	136,443	2,948	64,121	273,184
<u>NEW BRUNSWICK -</u>							
1935 ...	4	247,150	47	30,517	345	10,523	51,610
1936 ...	5	266,027	77	46,713	480	20,652	81,124
1937 ...	5	263,458	79	54,692	1,209	26,710	95,957
1938 ...	5	253,124	80	55,667	2,069	25,409	96,147
<u>QUEBEC -</u>							
1935 ...	22	5,525,727	350	268,774	29,978	141,901	421,283
1936 ...	19	5,504,590	423	313,882	15,967	169,803	505,995
1937 ...	19	5,910,736	532	481,861	23,776	247,074	782,303
1938 ...	19	4,579,040	491	458,737	33,030	235,148	754,016
<u>ONTARIO -</u>							
1935 ...	75	9,838,136	749	593,769	25,789	339,248	1,005,188
1936 ...	80	9,416,389	727	649,477	46,924	357,874	1,169,138
1937 ...	78	9,439,675	1,027	971,782	66,738	571,058	1,396,049
1938 ...	84	8,349,292	956	905,432	66,691	493,118	1,523,687
<u>MANITOBA -</u>							
1935 ...	4	223,515	70	50,634	125	17,700	56,930
1936 ...	4	219,279	47	39,256	667	8,813	46,084
1937 ...	5	206,549	58	38,708	390	14,348	80,793
1938 ...	4	258,534	68	56,375	460	23,278	81,596
<u>SASKATCHEWAN -</u>							
1935 ...	4	961,362	44	38,933	673	10,472	87,005
1936 ...	3	871,074	33	37,147	776	11,429	83,379
1937 ...	5	836,706	43	46,062	1,157	13,419	100,754
1938 ...	6	825,968	33	38,901	824	10,882	107,007
<u>ALBERTA -</u>							
1935 ...	9	1,944,234	198	174,924	2,201	17,027	307,451
1936 ...	9	1,873,767	204	180,999	3,533	27,973	284,271
1937 ...	10	1,895,534	214	186,961	3,103	30,919	304,616
1938 ...	10	1,941,991	269	261,974	2,267	25,891	349,179

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY,
1935 - 1938 (Concluded).

Province and	Number of firms	Capital employed \$	Number of em- ployees	Salaries and wages paid \$	Cost of process supplies used \$	Cost of fuel and elec- tricity \$	Net value of sales \$
<u>BRITISH COLUMBIA -</u>							
1935 ...	9	953,280	160	131,452	566	31,860	184,210
1936 ...	8	804,143	139	122,803	2,403	39,684	238,804
1937 ...	10	903,180	170	172,972	4,681	56,027	288,932
1938 ...	12	931,660	199	196,704	6,370	61,343	297,419
<u>CANADA -</u>							
1935 ...	132	20,502,006	1,728	1,387,924	60,583	618,995	2,332,985
1936 ...	133	19,863,431	1,775	1,498,148	71,353	695,001	2,704,673
1937 ...	137	20,427,232	2,287	2,094,792	103,568	1,032,755	3,380,536
1938 ...	145	18,068,542	2,242	2,110,233	114,659	939,190	3,482,235
1926 ...	194	28,152,062	4,395	4,346,687	(a)	2,080,054	(a)

(a) Information not available.

Table 3 - AVERAGE NUMBER OF WAGE-EARNERS, BY MONTHS, 1937 and 1938.

Month	1 9 3 7	1 9 3 8	
		Pit	Plant
January	891	50	843
February	919	54	769
March	1,150	51	890
April	1,540	127	1,434
May	2,484	325	2,242
June	2,827	393	2,547
July	2,888	337	2,500
August	2,938	292	2,346
September	2,661	267	2,286
October	2,438	224	1,955
November	2,011	142	1,695
December	1,481	89	1,412

Table 4 -- NUMBER OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS SPECIFIED, DURING ONE WEEK IN MONTH OF NORMAL EMPLOYMENT.

Hours	1 9 3 8	Hours	1 9 3 8
	No.		No.
30 hours or less	60	51 - 54 hours	382
31 - 43 hours	213	55 hours	127
44 hours	262	56 - 64 hours	948
45 - 47 hours	87	65 hours and over	153
48 hours	409	GRAND TOTAL	2,877
49 - 50 hours	236	Total wages paid in that week	\$37,401

Table 5 - FUEL AND ELECTRICITY USED, 1937 and 1938.

Kind	Unit of measure	1 9 3 7	1 9 3 8
		Quantity Cost at works \$	Quantity Cost at works \$
Bituminous coal - Canadian .. short ton		26,197 153,285	24,635 150,909
Imported .. short ton		83,241 555,462	67,090 458,436
Anthracite coal - From United States ... short ton		1,067 9,153	2,694 18,776
Other short ton		283 2,357	17 208
Lignite coal short ton		1,552 3,156	505 2,361
Coke short ton		506 4,588	391 3,544
Gasoline Imp. gal.		52,337 11,264	49,679 11,923
Kerosene or coal oil Imp. gal.		3,235 779	1,050 240
Fuel oil Imp. gal.		39,029 4,034	51,340 4,691
Wood Cord		31,177 116,899	36,079 127,832
Gas - Natural M cu.ft.		878,233 29,672	532,374 22,204
Manufactured M cu.ft.		- -	16,528 4,699
Electricity purchased K. W. H.		10,315,203 141,420	9,939,962 133,334
Other fuel \$		- 686	- 33
TOTAL \$		- 1,032,755	- 939,190
Electricity generated for own use K. W. H.		265,604 -	612,411 -

Table 6 - POWER EQUIPMENT INSTALLATION IN THE CLAY PRODUCTS INDUSTRY, 1938.

Description	Ordinarily in use		In reserve or idle	
	Number of Units	Total horse power (x)	Number of Units	Total horse power (x)
Steam engines and steam turbines	52	4,567	10	1,389
Diesel engines	4	495	8	890
Gasoline, gas and oil engines, other than diesel engines	43	1,160	10	218
Hydraulic turbines or water wheels ...	-	-	-	-
Electric motors -				
(a) Operated by purchased power	517	14,280	54	2,358
TOTAL	616	20,502	82	4,855
(b) Operated by power generated by the establishment	27	404	2	140
Boilers	59	5,384	6	475

(x) According to manufacturers' rating.

Table 7 - PRODUCTION (SALES) OF DOMESTIC CLAY AND CLAY PRODUCTS IN CANADA, 1937 and 1938.

Products	Unit of Measure	SALES		OR	SHIPMENTS	
		1 9 3 7			1 9 3 8	
		Quantity	\$		Quantity	\$
Clay - Fullers' earth	ton	...	...		...	...
Bentonite	ton	163	1,971		1,179	3,659
Fireclay	ton	4,123	26,081		2,344	17,243
Kaolin (china clay)	ton	...	...		...	...
Other clay	ton	...	...		13,797	18,053
Fireclay blocks and shapes .....	\$	...	75,431		...	73,512
Firebrick	M	2,950	142,827		2,213	113,581
Brick - Soft mud process - Face	M	9,904	175,544		10,838	208,610
Common	M	23,636	316,534		24,104	313,082
Stiff mud process- Face	M	37,610	735,615		34,179	671,471
(wire cut) Common	M	55,689	755,630		50,734	681,744
Dry press - Face	M	12,565	233,542		13,125	266,039
Common	M	14,136	152,662		15,536	192,741
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	55	2,972		63	4,175
Sewer brick	M	175	2,777		228	3,581
Paving brick	M	3	131		1	34
Structural tile -						
Hollow blocks (including fireproofing and load-bearing tile)	ton	64,526	533,843		70,648	591,416
Roofing tile	No.	60,542	3,302		150,504	5,196
Floor tile (quarries)	Sq. ft.	73,191	12,169		100,958	15,330
Ceramic or glazed floor and wall tile. \$		...	...		...	...
Drain tile	M	11,391	298,970		12,862	322,774
Sewer pipe (including copings, flue linings, etc.) (b) .....	\$	...	790,210		...	778,107
Pottery, glazed or unglazed (including coarse earthenware, stoneware, flower pots, and all other pottery) .....	\$	...	232,209		...	235,890
Other products .....	\$	...	24,439		...	19,846
TOTAL .....	\$	...	4,516,859		...	4,536,084

(b) Includes value of clay conduits.

NOTE - In addition to the clays recorded in this table, there were 195,877 tons of ordinary clay consumed in Canada during 1937 in the production of Portland cement; the corresponding consumption in 1938 was 143,421 short tons. Also consumed by the Canadian cement industry in 1938 were 15,821 short tons of shale.

Table 8 - PRODUCTION (TOTAL SALES) OF CLAY PRODUCTS FROM DOMESTIC CLAYS, 1913 - 1938.

Year	\$	Year	\$
1913	9,504,314	1926	10,357,323
1914	6,871,957	1927	11,173,189
1915	3,914,488	1928	12,381,718
1916	4,120,805	1929	13,904,643
1917	4,779,038	1930	10,593,578
1918	4,583,489	1931	7,841,288
1919	7,906,366	1932	3,650,218
1920	10,664,929	1933	2,262,835
1921	8,857,818	1934	2,680,410
1922	11,438,456	1935	3,012,563
1923	10,483,016	1936	3,471,027
1924	9,215,077	1937	4,516,859
1925	9,529,691	1938	4,536,084

In 1913 there were 455 active firms in the Canadian domestic clay products industry, men employed numbered 11,193 and \$4,682,801 were distributed in salaries and wages. In 1918 the number of active firms was 230 and \$2,131,614 were paid in wages to 3,423 employees.

Table 9 - PRODUCTION (TOTAL SALES) OF CLAY PRODUCTS, BY PROVINCES, 1935 - 1938.

Province	1935	1936	1937	1938
	(Gross values)			
	\$	\$	\$	\$
Nova Scotia	270,478	355,254	406,846	340,253
New Brunswick	62,478	102,256	123,876	123,625
Quebec	593,162	691,765	1,053,153	1,022,194
Ontario	1,370,225	1,573,936	2,033,845	2,083,496
Manitoba	74,755	55,564	95,531	105,334
Saskatchewan	98,150	95,584	115,330	118,713
Alberta	326,679	315,777	338,638	377,337
British Columbia	216,636	280,891	349,640	365,132
CANADA	3,012,563	3,471,027	4,516,859	4,536,084

Table 10 - PRODUCTION (SALES) OF BUILDING BRICK (a) - DOMINION TOTALS FOR YEARS SPECIFIED, 1905 - 1935.

Year	M	\$	Average value per M (b)	Year	M	\$	Average value per M (b)
			\$				\$
1905 (x) ..	523,820	3,933,925	7.51	1929	458,630	8,003,358	17.45
1914	551,149	4,769,417	8.65	1930	319,838	5,581,501	17.45
1924	317,473	5,722,997	18.03	1931	237,143	4,289,119	18.09
1925	351,186	5,944,163	16.92	1932	100,477	1,779,334	17.71
1926	358,348	6,525,565	18.21	1933	67,700	1,124,517	16.61
1927	398,439	6,941,131	17.42	1934	86,072	1,383,929	16.08
1928	421,301	7,281,777	17.28	1935	100,538	1,555,167	15.47

(a) Totals comparable with those in Table 12.

(x) Quantity not recorded prior to 1905.

(b) Based on shipments of all grades and the value per M should be interpreted as the value of pressed, common and other varieties 'en masse' and not the value of any one particular type of brick.

Table 11 - PRODUCTION OF BUILDING BRICK IN CANADA - PER CAPITA OF POPULATION FOR YEARS SPECIFIED

Year	M per capita	Year	M per capita
1905	0.087	1933	0.006
1914	0.070	1934	0.008
1924	0.035	1935	0.009
1929	0.046	1936	0.010
1930	0.031	1937	0.014
1932	0.010	1938	0.013

Table 12 - PRODUCTION (SALES) OF BUILDING BRICK (a) IN CANADA, BY PROVINCES, 1936, 1937 and 1938.

Province	1936		1937		1938	
	M	\$	M	\$	M	\$
Nova Scotia	5,971	76,008	5,282	74,860	5,102	69,185
New Brunswick	2,263	32,120	4,529	66,409	4,870	77,810
Quebec	33,583	516,248	53,853	825,596	48,249	766,379
Ontario	55,959	907,678	66,363	1,113,521	65,038	1,092,072
Manitoba	2,922	47,970	5,533	85,421	6,146	95,190
Saskatchewan	777	19,175	371	5,793	504	8,700
Alberta	10,382	84,169	11,556	94,326	11,151	108,330
British Columbia	3,875	65,404	6,283	109,350	7,747	123,777
CANADA	115,732	1,748,772	153,770	2,375,276	148,807	2,341,443
Average value per M .		\$ 15.11		\$ 15.45		\$ 15.73

(a) Includes fancy and sewer brick.

Table 13 - VALUE (b) OF DRAIN TILE AND SEWER PIPE PRODUCED (SALES) IN CANADA, BY PROVINCES, 1936, 1937 and 1938.

Province	1936		1937		1938	
	\$		\$		\$	
Nova Scotia	233,806		282,127		219,497	
New Brunswick	35,392(x)		17,616		9,400	
Quebec	40,373		57,365		89,033	
Ontario	366,279		572,153		594,993	
Manitoba	3,691(x)		3,524(x)		4,196(x)	
Saskatchewan .....	...		...		...
Alberta	69,355		87,690		96,623	
British Columbia	54,179		68,705		87,139	
CANADA	803,075		1,089,180		1,100,881	

(b) Includes value of copings, flue linings, etc. (x) Drain tile only.

Table 14 - VALUE (b) OF DRAIN TILE AND SEWER PIPE PRODUCED IN CANADA FOR YEARS SPECIFIED

Year	Value	Year	Value	Year	Value
	\$		\$		\$
1910	1,144,118	1918	1,199,114	1926	1,876,794
1912	1,242,503	1920	2,111,742	1928	2,379,698
1914	1,470,839	1922	2,173,733	1929	2,726,203
1916	1,075,674	1924	2,003,649	1933	577,287

(b) Includes value of copings, flue linings, etc.

Table 15 - PRODUCTION (SALES) OF FIRECLAY BLOCKS AND SHAPES AND FIREBRICK, BY PROVINCES, 1938.

Province	FIRECLAY(x)		FIRECLAY BLOCKS and SHAPES		FIREBRICK	
	Short tons	\$	\$	M	\$	
Nova Scotia	1,307	4,038	727	2	70	
New Brunswick	40	1,596	...	...	...
Saskatchewan	530	5,120	62,595	307	16,765	
Alberta .....	...	...	...	20	1,003
British Columbia	467	6,489	10,190	1,884	95,743	
CANADA	2,344	17,243	73,512	2,213	113,581	

(x) Does not include the entire quantity of clay shipped from Saskatchewan to Alberta for the manufacture of clay products.

Table 16 - PRODUCTION (SALES) OF FIRECLAY, FIRECLAY BLOCKS AND SHAPES, and FIREBRICK FROM DOMESTIC CLAY, 1929 - 1938.

Year		FIRECLAY	FIRECLAY BLOCKS and SHAPES		FIREBRICK	
		Short tons	\$	\$	M	\$
1929	.....	5,041	35,226	130,411	5,196	251,043
1930	.....	2,870	25,975	147,309	3,789	177,608
1931	.....	1,233	14,857	83,039	2,248	107,597
1932	.....	990	11,826	75,209	1,580	71,757
1933	.....	1,421	11,273	80,625	1,547	73,226
1934	.....	1,043	12,598	62,388	2,109	101,210
1935	.....	2,272	15,574	71,344	1,817	90,149
1936	.....	2,437	17,639	65,171	2,548	118,923
1937	.....	4,123	26,081	75,431	2,950	142,827
1938	.....	2,344	17,243	73,512	2,213	113,581

NOTE: Firebrick and fireclay blocks and shapes are made also from imported clays; see Table 39.

Table 17 - PRODUCTION (SALES) OF POTTERY FROM DOMESTIC CLAYS FOR YEARS SPECIFIED.

Year	Value	Year	Value
	\$		\$
1888	27,750	1928	356,093
1898	214,675	1929	323,194
1908	200,541	1930	294,866
1913	53,533	1931	257,125
1918	130,242	1932	244,861
1923	229,547	1933	202,500
1924	238,242	1934	223,733
1925	267,255	1935	220,711
1926	320,135	1936	218,402
1927	307,057		

Table 18 - PRODUCTION (SALES) OF POTTERY FROM DOMESTIC CLAYS, BY PROVINCES, 1937 and 1938

Province	1937	1938
	\$	\$
New Brunswick	32,805	28,580
Ontario	54,581	59,092
Alberta	135,245	138,519
British Columbia	9,578	9,699
CANADA	232,209	235,890

Table 19 - PRODUCTION OF STRUCTURAL TILE IN CANADA, BY PROVINCES, 1938.

Province	HOLLOW BLOCKS (x)		ROOFING TILE		FLOOR TILE (QUARRIES)	
	Short tons	\$	No.	\$	Sq.ft.	\$
Nova Scotia	4,716	46,736	...	...	...	...
New Brunswick	811	6,239	...	...	...	...
Quebec	20,934	166,232	...	...	...	...
Ontario	36,094	298,466	150,204	5,183	100,000	15,190
Manitoba	574	5,948	...	...	...	...
Saskatchewan	995	8,119	...	...	...	...
Alberta	3,387	29,418	...	...	...	...
British Columbia ..	3,137	30,258	300	13	958	140
CANADA	70,648	591,416	150,504	5,196	100,958	15,330

Table 20 - PRODUCTION OF STRUCTURAL TILE IN CANADA, 1929 - 1938.

Year	HOLLOW BLOCKS (x)		ROOFING TILE		FLOOR TILE (QUARRIES)	
	Short tons	\$	No.	\$	Sq.ft.	\$
1929	221,800	2,214,384	35,075	4,628	307,400	70,186
1930	165,359	1,667,783	3,056	356	179,786	56,230
1931	105,635	1,046,634	6,935	720	107,499	31,415
1932	48,118	421,672	48,939	3,900	94,316	21,502
1933	26,747	160,059	20,469	1,136	91,495	14,297
1934	31,136	244,122	44,115	1,852	80,356	17,491
1935	(a) 47,195	344,608	82,015	3,669	51,765	7,629
1936	58,501	467,860	52,730	2,139	97,738	13,798
1937	64,526	533,843	60,542	3,302	73,191	12,169
1938	70,648	591,416	150,504	5,196	100,958	15,330

(x) Including fireproofing and load-bearing tile.

(a) In addition, there was produced \$615 worth of ceramic tile.

Table 21 - PRODUCTION (SALES) OF BENTONITE AND KAOLIN IN CANADA, BY PROVINCES, 1928 - 1938.

Year	BENTONITE (x)		KAOLIN (a)	
	Tons	\$	Tons	\$
1928	20	100	5	25
1929 .....	...	...	...	...
1930	74	1,396	...	...
1931	187	935	...	...
1932	7	176	...	...
1933	55	1,363	...	...
1934	63	1,578	48	504
1935	41	781	170	1,520
1936	120(b)	180	...	...
1937	163	1,971	...	...
1938	1,179	3,659	...	...

(x) All from British Columbia 1928 - 1936 inclusive; in 1937 includes 132 tons at \$1,154 produced in Manitoba and 31 tons at \$817 in British Columbia. Sales in 1938 included 1,136 tons worth \$3,444 from Alberta and 43 tons at \$215 from British Columbia.

(a) All from Quebec.

(b) Partly for experimental purposes.

It was reported in 1938 that bentonite films may be processed to afford a successful substitute for mica in various important uses and may come on the market as insulating tapes for wrapping wires and telephone cables. The films are said to be

fireproof, waterproof, chemically inert, transparent, flexible and fairly tough and their employment for a variety of uses where dielectric properties are not required is suggested.

Table 22 - FULLER'S EARTH USED IN CANADA IN THE MANUFACTURE OF SOAPS AND WASHING COMPOUNDS AND IN THE PETROLEUM PRODUCTS INDUSTRY, 1930 - 1938.

Year	Petroleum Products Industry		Soaps and Washing Compounds	
	Pounds(x)	\$	Pounds	\$
1930	20,102,387	241,793	Data not available	
1931	16,157,532	201,361	492,174	6,264
1932	19,642,179	258,934	507,807	7,444
1933	22,811,655	314,515	588,434	8,501
1934	18,588,514	239,357	508,316	6,562
1935	18,487,148	260,885	660,018	13,694
1936	18,907,295	243,164	1,328,219	20,601
1937	18,843,458	240,309	1,167,768	20,393
1938	19,687,467	281,668	1,195,208	19,575

(x) Includes all clay.

The United States Bureau of Mines report that International trade in Fuller's earth is confined largely to the exports of American earth to mineral-oil refineries and of English earth to refineries treating edible oils and mineral fats. Experiments with bauxite begun in 1937, for decolorizing oils by percolation processes and at least three companies in the United States are now offering it as a substitute for Fuller's earth.

With the opening up of new clay deposits, the use of the United States clays for treating edible products increased until 1938, when shipments to vegetable and animal oil refineries also decreased sharply, probably because of competition from artificially activated or acid-treated earths. Activated material is now made in California and Mississippi from bentonites having virtually no decolorizing power in the raw state.

Table 23 - CHINA CLAY (KAOLIN) USED IN THE MANUFACTURE OF PAPER IN CANADA, 1930 - 1938.

Year			Year		
Tons		Value	Tons		Value
		\$			\$
1930	13,024	218,423	1935	33,766	442,584
1931	11,484	173,660	1936	39,165	520,121
1932	14,432	205,068	1937	41,738	578,223
1933	20,048	267,014	1938	34,968	488,147
1934	27,550	357,286			

Table 24 - CLAYS AND EARTHS USED IN CANADIAN RUBBER INDUSTRY, 1933 - 1937.

Year			Year		
Tons		Value	Tons		Value
		\$			\$
1933	1,391	32,361	1936	3,017	70,709
1934	2,391	54,368	1937	3,614	79,300
1935	2,639	63,553			

NOTE - Data for 1938 not yet complete.

Table 25 - FIREBRICK AND FIRECLAY USED IN THE MANUFACTURE OF IRON AND STEEL AND THEIR PRODUCTS IN CANADA, 1931 - 1937.

Year	FIREBRICK		FIRECLAY		OTHER FIRECLAY, FIREBRICK and CUPOLA BLOCKS
	Number	Value	Tons	Value	
		\$		\$	\$
1931	4,326,000	197,684	7,631	64,300	45,393
1932	3,409,000	123,532	5,910	52,492	36,395
1933	1,846,016	141,784	7,615	62,602	11,628 (b)
1934	2,590,452	192,538	8,248	75,906	21,488
1935	(a)	451,604	11,510	101,601	28,064
1936	(a)	(a)	\$ 779,014 (c)	(a)	(a)
1937	(a)	(a)	\$1,058,787 (c)	(a)	(a)

(a) Not published separately.

(b) From 1933 includes only cupola blocks

(c) Combined value for firebrick, fireclay and other fireclay, etc.

NOTE - Corresponding data for 1938 are not yet complete but firebrick, fireclay and other refractories used by the Canadian primary iron and steel industry in steel furnaces during 1938 was valued at \$527,894 compared with \$638,326 in 1937.

Table 26 - FULLER'S AND INFUSORIAL EARTH USED IN SPECIFIED CANADIAN INDUSTRIES, 1932 - 1938.

Year	Sugar Refineries		Vegetable oil mills	
	Pounds	\$	Pounds	\$
1932	(a)	(a)	102,650	1,773
1933	(a)	(a)	126,880	2,730
1934	(a)	(a)	115,120	2,171
1935	(a)	(a)	88,980	2,425
1936	59,200 (b)	1,730	243,720	10,044
1937	4,586,786 (c)	95,532	212,997 (+)	9,349
1938	4,908,597 (c)	101,473	190,253	9,063

(a) Not recorded.

(b) Fuller's Earth.

(c) Infusorial earth.

(+) Includes other earth.

NOTE - In addition to the consumption recorded in Table 26, there is a considerable quantity of fuller's earth used by the slaughtering industry.

Table 27 - CONSTRUCTION CONTRACTS AWARDED IN CANADA(x) FOR YEARS SPECIFIED.

Type	1929	1932	1935	1937	1938
	\$	\$	\$	\$	\$
Residential ...	128,901,300	28,692,600	36,408,500	56,207,000	55,025,600
Business	190,161,700	39,399,200	48,442,200	55,288,800	63,327,100
Industrial ...	62,968,800	7,820,400	10,292,200	33,779,800	15,982,200
Engineering ..	194,620,000	56,760,200	65,162,100	78,781,100	52,943,000
TOTAL	576,651,800	132,872,400	160,305,000	224,056,700	187,277,900

(x) Compiled by MacLean Building Reports Ltd., Toronto.

Table 28 - DESCRIPTION and VALUE OF WORK PERFORMED IN CANADA BY ALL TRADE AND SUB-CONTRACTORS, 1937 and 1938. (x)

Nature	1937	1938
	\$	\$
Air conditioning	974,495	1,340,166
Bricklaying	1,838,891	2,037,351
Carpentry work	1,759,484	2,541,407
Concreting and cement work	2,094,417	2,059,838
Electrical work	8,449,179	9,459,416
Elevators, service	2,427,053	2,315,335
Excavating	915,976	1,029,069
Flooring, all kinds	1,120,029	1,252,982
Glass and glazing	2,369,274	2,002,754
Lathing, plastering and stucco	3,638,632	4,504,585
Masonry and stone work	1,049,419	935,602
Ornamental iron work	1,198,835	1,221,620
Painting and decorating	6,462,081	7,174,262
Plumbing, heating and sanitary engineering ..	23,436,065	25,479,331
Roofing	5,069,698	5,033,905
Sheet metal work, other than roofing	4,751,018	4,541,516
Sprinkler installation	1,032,847	896,042
Structural steel work	16,199,867	17,360,625
Tiling, marble and terrazzo	2,436,764	2,955,638
Weatherstripping and insulation	982,843	1,110,080
All other trades	5,860,701	5,455,454
TOTAL VALUE OF WORK PERFORMED (b)	94,067,618	100,706,978

(x) Supplied by the Construction Branch, Dominion Bureau of Statistics.

(b) Includes cost of materials used, etc.

Table 29 - WORLD'S PRODUCTION OF CHINA CLAY, 1936, 1937 and 1938. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country and Description	1936	1937	1938
<u>BRITISH EMPIRE</u>			
United Kingdom	746,922	830,946	585,888
Union of South Africa	344	413	798
Burma	788	(a)	(a)
Federated Malay States	121	263	385
India	17,217	17,081	26,106
Unfederated Malay States .....	...	30	768
Australia	35,336	16,688	(a)
<u>FOREIGN COUNTRIES</u>			
Austria	(b)19,622	(b)19,537	(d)
Belgium (c)	18,848	22,538	(a)
Bulgaria	1,892	3,492	7,663
Czecho-Slovakia (estimated)	400,000	450,000	400,000
Denmark -			
Crude	27,700	32,300	37,400
Washed and pressed	8,500	9,100	9,750

Table 29 - WORLD'S PRODUCTION OF CHINA CLAY, 1936, 1937 and 1938. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries) - (Contd.)
(Long tons)

Producing Country and Description	1936	1937	1938
<u>FOREIGN COUNTRIES</u> (Contd.)			
France	122,900	124,450	(a)
Germany -			
Bavaria	141,913	157,265	(a)
Prussia	76,795	90,521	(a)
Saxony -			
Crude	45,855	47,653	(a)
Washed	50,298	59,892	(a)
Thuringia -			
Sand	5,018	6,392	(a)
Greece .....	...	300	(a)
Italy -			
Crude	75,597)	96,094	73,772
Kaolinic earth	6,017)		
Washed	37,539	37,159	43,630
Portugal -			
Washed	11,442	10,723	11,768
Kaolinic sand	384	453	189
Roumania (a)	4,610	600	(a)
Sweden	2,668	2,148	(a)
Algeria	2,570	1,634	(a)
United States (f)	570,481	653,823	531,298
Argentina	426	711	(a)
Brazil	(a)	1,593	(a)
Chile	7,900	(a)	(a)
Japan (estimated)	400,000	400,000	400,000
Korea	24,322	(a)	(a)
Manchuria	32,500	(a)	(a)
Netherlands East Indies	9	771	(a)

China clay is also produced in U.S.S.R. and China.

- (a) Information not available. (b) Exports
(c) "Eurite" and kaolin. (d) Comparable exports not available.
(e) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons. (f) Sales of china clay and paper clay

Table 30 - IMPORTS INTO CANADA and EXPORTS OF CLAY AND CLAY PRODUCTS, 1937 and 1938.

		1937		1938	
		Quantity	\$	Quantity	\$
<u>IMPORTS</u>					
Building brick	ton	1,477	18,485	1,801	22,075
Building blocks and fireproofing tile	\$	...	17,121	...	48,310
Clays - China	Cwt.	1,103,891	445,073	758,794	324,933
Fire	Cwt.	1,590,207	250,393	1,083,493	181,221
Pipe .....	\$	...	4,910	...	7,999
Other clays, n.o.p. ....	\$	...	224,160	...	203,587

Table 30 - IMPORTS INTO CANADA and EXPORTS OF CLAY and CLAY PRODUCTS, 1937 and 1938.
(Contd.)

		1937		1938	
		Quantity	\$	Quantity	\$
IMPORTS -(Cont'd.)					
Zirconium silicate .....	\$	...	2,065	...	1,847
Zirconium oxide .....	\$	...	32,668	...	24,983
Drain tile, unglazed .....	\$	...	2,705	...	54
Drain, sewer pipe and earthenware fittings therefor, chimney linings or vents, chimney tops or inverted blocks, glazed or unglazed, n.o.p.	\$	...	20,322	...	12,950
Tiles or blocks of earthenware or stone prepared for mosaic flooring	\$	...	44,869	...	53,223
Tiles, earthenware, for roofing purposes .....	\$	...	13,621	...	3,152
Tiles, earthenware, n.o.p. ....	\$	...	138,033	...	131,990
Insulators, electric, procelain ..	\$	...	113,102	...	88,344
Pottery and chinaware .....	\$	...	4,170,558	...	4,043,852
Brick, fire, other, valued at not less than \$100 per M, rectangular shaped; the dimensions of each not to exceed 125 cubic inches; for use exclusively in the construction or repair of a furnace, kiln, etc. ..	\$	...	143,160	...	69,440
Brick, fire, n.o.p., for use exclusively in the construction or repair of a furnace, kiln or other equipment of a manufacturing establishment (not made in Canada)	\$	...	449,301	...	321,850
Firebrick, n.o.p. ....	\$	...	989,603	...	666,359
Firebrick, chrome .....	\$	...	103,287	...	47,885
Magnesite brick (fire) .....	\$	...	653,507	...	571,910
Silica brick (containing not less than 90 per cent silica) .....	\$	...	539,253	...	240,184
Paving brick	ton	1,615	13,547	1,695	12,798
Artificial teeth, not mounted ...	\$	...	387,024	...	365,063
Baths, bathtubs, basins, laundry tubs, etc., of earthenware, cement or clay, n.o.p. ....	\$	...	151,264	...	119,164
Saggars (a) .....	\$	...	4,646	...	2,364
Crucibles, clay or sand .....	\$	...	38,839	...	29,139
Other manufactures of clay, n.o.p.	\$	...	137,460	...	62,526
TOTAL .....	\$	...	9,108,976	...	7,657,202
From - United Kingdom .....	\$	...	4,166,926	...	4,050,397
United States .....	\$	...	4,217,650	...	3,064,904
EXPORTS					
Building brick	M	1,155	20,972	1,134	17,544
Clay - Unmanufactured	Cwt.	1,320	3,111	910	2,652
Manufactures of .....	\$	...	69,505	...	53,104
Earthenware .....	\$	...	60,565	...	15,808
Porcelain insulators .....	\$	...	442,817	...	456,897
TOTAL .....	\$	...	596,970	...	546,005
(a) From February 26, 1937.	Cwt. = 100 pounds		Ton = 2,000 pounds		

PRICES - (a)

BENTONITE - per ton, carload lots, f.o.b. Wyoming mines, dried and crushed, in bulk, \$8; in bags, \$10. f.o.b. Chicago, selected air-floated, \$25.

CHINA CLAY (KAOLIN) - per ton, f.o.b. South Carolina and Georgia mines, in bulk: saggar clays, \$2.50 to \$3.50; tailings, \$4.50 to \$5.00. No. 2 grades, \$5.50 to \$6.00; No. 1 grades, air-floated, crude, \$6.75 to \$8.00; No. 1 washed, \$8.00. Florida: washed, crushed, \$11.75; air-floated and washed, \$14 to \$15. Maryland: ball clays, shredded bulk, \$3.75 to \$8.25; air-floated, in paper bags, \$15 to \$18.25. New Jersey: Plastic kaolin, pulverized, in paper bags, \$10. Insecticide clay, \$11.50 to \$16.50. Imported English, per long ton, C and F. American ports: lump, \$20.00 to \$25.00 in bulk; air-floated, \$35 to \$60.

FULLER'S EARTH - per ton, f.o.b. Colorado, \$9. f.o.b. Georgia or Florida, 30 to 60 mesh, \$14.50; 15 to 30, \$14; 200 and up, \$10; 100 and up \$7.

(b) FULLER'S EARTH - English, carlots, tons, to \$29.00; Georgian, carlots - to \$21.00

(c) CHINA CLAY - Imported, car lots - bulk - ton \$20.00 to \$25.00. Pigment clay for rubber - car lots - bags - ton - \$20.00 to \$25.00, less car lots, to \$23. KAOLIN (refined grades) lb. 4 cents - 12 cents.

(a) Engineering and Mining Journal's "Metal and Mineral Markets" - New York, December, 1939.

(b) "Canadian Chemistry and Metallurgy" - Toronto, November, 1939.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, etc., MADE FROM DOMESTIC CLAYS, 1938.

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>NOVA SCOTIA</u> -		
Brooks, Stephen, & Sons (a)	Box 159, New Glasgow	New Glasgow
MacIntyre, A. D. (a)	11 Sheriff Ave., Sydney	Sydney
McCurdy, Henry (a)	Middle Musquodoboit	Musquodoboit
Miller, Archie E.	Elmsdale	Lantz Siding
Shaw, L. E., Ltd.,	8 Prince St., Halifax	Lantz Siding
Standard Clay Products Ltd.	St. Johns, P. Q.	New Glasgow
<u>NEW BRUNSWICK</u> -		
Little River Brick Co. Ltd.	Little River, Saint John	Little River
Ryan, M., & Son, Ltd.	Fredericton	Fredericton
Shaw, L. E. Ltd.	8 Prince St., Halifax, N.S.	Chipman
Tondreau, Adelard	Bathurst	Bathurst
<u>QUEBEC</u>		
Ascot Tile & Brick Co. Ltd.	Ascot Corner	Richmond Co.
Bégin, Olivier	R.R. 1, St-Saveur de Quebec	Petite Rivière
Bourbeau, Geo., & Fils	R.R. 1, Danville	Kingsey Falls
Canada China Clay Ltd.	St. Remi d'Amherst	St. Remi d'Amherst
Champlain Brick Ltd.	323 Blvd. Charest, Quebec	Beauport-Est
Chicoutimi Brick Co. Ltd.	Chicoutimi	Chicoutimi
Citadel Brick Ltd.	14 St. Joseph St., Quebec	L'Islet Station Boischatel.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1938

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>QUEBEC - (Cont'd.)</u>		
Cote, Albert	Victoriaville	Victoriaville
Crite, Freddy	St. Tite	St. Tite
Desmarais, S. E., & Co.	Richmond	Richmond
Duquette, Isidore	Box 626, East Angus	Compton Co.
Gaulin, E.	Princeville	Princeville
Hodgins, David T.	Shawville	Clarendon Tp.
LaPrairie Co. Inc.	660 St. Catharine St.W., Montreal	LaPrairie Co., Delson
Lotbiniere Brick Co.	Deschaillons	Deschaillons
Montreal Terra Cotta Ltd.	1010 St.Catharine St.W., Montreal	Lakeside
Panet Brick Co. Ltd.	L'Islet Station	L'Islet Station
Parrot, M. H.	Deschaillons	Deschaillons
Potvin, Alphonse	Deschaillons	Deschaillons
St. Lawrence Brick Co. Ltd.	1010 St.Catharine St.W., Montreal	Laprairie
Scott Brick Co.	Scott Junction	Dorchester Co.
Standard Clay Products Ltd.	Box 189, St. Johns	St. Johns
Tremblay, Jules R.	272 rue Racine, Chicoutimi	Chicoutimi
<u>ONTARIO</u>		
Barnes, Wm. R., Company Ltd.	243 Cumberland Ave., Hamilton	Hamilton
Belle River Brick & Tile Co.	Belle River	Essex County
Brampton Pressed Brick Co. Ltd.	Brampton	Peel County
Broadwell, B., & Son	Kingsville	Essex County
Canadian Ceramic Co. Ltd. (a)	Rm. 608 - 159 Bay St., Toronto	Acton
Canadian Pressed Brick Co. Ltd.	195 Ottawa St., S., Hamilton	Hamilton
Casemore, R., & Son	Shallow Lake	Shallow Lake
Chapman Bros.,	145 Dawes Road, Toronto	E. York Tp.
Construction Materials Ltd.	New Toronto	Etobicoke Tp.
Cooksville Co. Ltd.	46 Bloor St. W., Toronto	Cooksville
Cornhill, James & Sons Ltd.	Box 36, Chatham	Kent County
Coultis, Geo. & Son	Thedford	Lambton County
Cowell, Geo. Wesley	Box 361, Tilsonburg	Oxford County
Curtin, F., Estate	R.R 4, Lindsay	Victoria County
Curtis Bros.	Box 809, Peterborough	Otonabee Tp.,
Deller, A., & Son	Brownsville	Oxford County
Deller, Wm. H.	Thorndale	W. Nissouri Tp.
Dochard Brick, Tile & Terra Cotta Works	Arnprior	Arnprior
Donaldson, Thos. Geo.	R.R. 1, Greenock	Culross Tp.
Douglas John R.	Wilkesport	Lambton County
Dover Brick and Tile Works	Chatham	Dover Tp.
Elliott, Chas.	Bluevale	Huron County
Elliott, Jas., Jr.	Sault Ste. Marie	Korah Tp.
Elliott, Wm.	Glenannan	Bruce County
Fletcher Brick and Tile	Fletcher	Kent Co.
Fort William Brick Co.	Fort William	Fort William
Frid Bros. Ltd.	Main West and Macklin Sts., Hamilton	Hamilton
Gamage, C. R.	R. R. 2, Dresden	Lambton County
Georgian Bay Building Products	Owen Sound	Shallow Lake
Godfrey, Thos., & Co.	Carleton Place	Lanark County
Gomall Brick & Tile Works	Powassan	S.Himsworth Tp.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1938

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>ONTARIO -- (Cont'd.)</u>		
Grimsby Brick & Tile Co.	Grimsby	Grimsby
Haist, W. R.	Crediton	Crediton
Hamilton Pressed Brick Co. Ltd.	211 Kensington Ave.S., Hamilton	Wentworth County
Harper Brick Works	348 Greenwood Avenue, Toronto	Toronto
Hill, Aaron	Essex	Essex
Hill, Albert W.	R.R. 1, Coatsworth	Tilbury E. Tp.
Hitch, D. A.	Ridgetown	Howard Tp.
Hitch, Thos.	First Ave., St. Thomas	St. Thomas
Hodder, Mrs. J. H., & Sons	Dutton	Elgin County
Howlett, Fred W., & Sons, Ltd.	Box 3, Petrolia	Petrolia
Huntsville Brick Works	Box 308, Huntsville	Muskoka
Interprovincial Brick Co. Ltd.	46 Bloor St., W., Toronto	Chinquacoucy Tp.
		Nassagaweya Tp.
Jackson, W. B., Brick & Tile	Brantford	Brantford
Jamieson Lime Co.	Renfrew	Renfrew
Janes, D. A.	Mt. Brydges	Middlesex County
Jasperson Brick & Tile Co.	Kingsville	Coatsworth
Jervis, W. J.	R. R. 3, Dorchester	N. Dorchester
Johnson, Jas., Estate of	Pembroke	Stafford Tp.
Kerr, C., Estate of	R.R. 4, Goderich	Huron County
Koebel Bros.	St. Clements	St. Clements
Lindsay, Earl & Sons	R.R. 2, Wallaceburg	Kent County
McComb, Chester	R.R. 2, London	Middlesex County
McCormick, Thos. L.	R.R. 5, Watford	Lambton County
McEachran, Norman	Highgate	Highgate
McFarlane, W. J.	Forest	Lambton County
McFarren, F. B. Ltd.	34 Toronto St., Toronto	Toronto Tp.
Milton Brick Co. Ltd.	170 Bloor St. W., Toronto	Milton
Moulton's Tile & Brick Yard	R.R. 2, Holyrood	Greenock Tp.
Napanee Brick & Tile Works	Napanee	Lennox County
National Fireproofing Co. of Canada, Ltd.	96 Bloor St. W., Toronto	Wentworth County
National Sewer Pipe Co. Ltd.	Aldershot	E. Flamboro Tp.
		Aldershot, Hamilton Swansea.
New Liskeard Brick Works	Box 74, New Liskeard	New Liskeard
Norwich Brick & Tile Works	R.R. 2, Norwich	Oxford County
Ontario Brick & Tile Plant (Government)	Parliament Bldgs., Toronto	Mimico
O'Reilly, T. E.	320 Bay St., Ottawa	Carleton County
Ottawa Brick & Terra Cotta Co. Ltd.	Billings Bridge	Carleton County
Ott Brick & Tile Mfg. Co. Ltd.	Kitchener	Kitchener
Owen Sound Brick Co. Ltd.	Owen Sound	Owen Sound
Paxton, Fred R.	St. Catharines	St. Catharines
Phinn, Geo. A.	St. James Park, London	Middlesex County
Phippen & Son	Dawes Road, Box 11, Coleman	E. York Tp.
Richardson, J. & Son	Kerwood	Kerwood
Rollins, D. W.	179 Dundas St., Belleville	Thurlow Tp.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1938.

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>ONTARIO - (Cont'd.)</u>		
Snelgrove, A., Estate of	Beaverton	Beaverton
Sproat & Sproat	R.R. 4, Seaforth	Tuckersmith Tp.
Standard Brick Co.	500 Greenwood Ave., Toronto	Toronto
Superior Brick & Tile Co. Ltd.	Fort William	Paipoonge Tp.
Thomson, Ralph	Henfryn	S. Grey Tp.
Toronto Brick Co. Ltd.	897 Bay St., Toronto	Toronto, York Tp., Milton
Wagstaff Brick & Tile Co.	32 Simcoe St., Lindsay	Victoria County
Wallace, M. J., & Son	Toronto General Trusts Corp., 253 Bay St., Toronto	Widdifield Tp.
Wein, Aaron	Crediton	Huron County
Wright, Geo., & Sons	Comber	Comber
<u>MANITOBA -</u>		
Alsip Brick, Tile & Lumber Co. Ltd.	537 Portage Ave., Winnipeg	Winnipeg
O'Day, J. E. (b) (c)	971 McMillan Ave., Winnipeg	Winnipeg
Snyder Brick Yards Ltd.	Portage la Prairie	Portage la Prairie
Wardrop, D. M.	Whittemouth	Whittemouth
Western Clay Products Ltd.	521 Somerset Block, Winnipeg	Edrans
Wollke, Peter (b) (c)	Morden	Morden
<u>SASKATCHEWAN -</u>		
Alberta Clay Products Co. Ltd.	Box 672, Medicine Hat, Alberta	Willows, Ravens- crag and Eastend
Bruno Clay Works Ltd.	Saskatoon	Bruno
Dominion Fire Brick and Clay Products Ltd. (a)	Box 99, Moose Jaw	Claybank
International Clay Products Ltd.	Estevan	Estevan, Readlyn, Knollys.
Midland Clay Co.	Willow Bunch	Willow Bunch
<u>ALBERTA -</u>		
Acme Brick Co. Ltd.	125 Alberta Block, Edmonton	Cannell
Alberta Clay Products Co. Ltd.	Box 672, Medicine Hat	Medicine Hat, Dunmore (a)
Gunderson Brick & Coal Co. Ltd.	Redcliff	Redcliff
Johanson, Knut	Grande Prairie	Grande Prairie
Kidd, Gordon L. (b)	Box 230 Drumheller	Sec. 14-29-20 W.4.
Little, J. B., & Sons Ltd.	9120 - 100th Ave., Edmonton	Edmonton
Medicine Hat Brick & Tile Co. Ltd.	Box 1000 Medicine Hat	Medicine Hat
Redcliff Pressed Brick Co. Ltd. (a)	Box 87, Redcliff	Redcliff
Redcliff Premier Brick Co. Ltd.	Redcliff	Redcliff
<u>BRITISH COLUMBIA -</u>		
Baker Brick & Tile Co. Ltd.	3191 Douglas St., Victoria	Victoria
Clayburn Co. Ltd. (a)	850 W. Hastings St., Vancouver	Kilgard
Champion and White Ltd.	1075 Main St., Vancouver	Bazan Bay

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1938

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>BRITISH COLUMBIA - (Cont'd.)</u>		
Fairey & Company	661 Taylor St., Vancouver	Williams Lake
Gabriola Shale Products Ltd.	1304 Broad St., Victoria	Gabriola Island
Glover, F., (b)	Princeton	Similkameen
Gorse, Percy A.	Salmon Arm	Enderby
Haug, Wm., & Son	Box 220, Kelowna	Kelowna
Port Haney Brick Co. Ltd.	846 Howe St., Vancouver	Haney
Richmond, Geo. W., & Co. (a)	2635 W. 15th Ave., Vancouver	Kilgard
Vancouver Brick & Tile Ltd.	Ft. Columbia Ave., Vancouver	New Westminster, Sullivan

- (a) Includes production of refractories.
(b) Produces bentonite.
(c) No production reported in 1938.

CANADIAN PRODUCERS OF STONEWARE AND POTTERY FROM DOMESTIC CLAYS, 1938.

NEW BRUNSWICK -

The Foley Pottery Ltd. (a)	Saint John	Saint John Middle Musquod- boit.
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ONTARIO -

Ferguson, A. W.	95 Rectory St., London	London
The Foster Pottery Co.	Main St. W., Hamilton	Hamilton

ALBERTA -

Medalta Potteries Ltd.	620 Third St. W., Calgary	Medicine Hat
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BRITISH COLUMBIA -

B. C. Clay Products Co.	3439 Euclid Ave., Vancouver	Vancouver
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- (a) Includes production of refractories.

11. PRODUCTS FROM IMPORTED CLAYS, 1938.

This industry covers the operations of the factories in Canada which were occupied chiefly in making ceramic products from imported clays. The commodities made in these plants during 1938 included high tension insulators, enamelled sanitary ware, china tableware, firebrick, floor and wall tile, refractory cements, pottery, and electrical porcelains such as sockets, plugs, etc.

Twenty-one plants reported in this group during 1938 and their output was valued at \$3,048,888, against last year's total of \$3,599,181 and the 1936 total of \$2,906,432. Capital employed amounted to \$4,690,306 and the average number of workers was 1,163. Salaries and wages amounted to \$1,194,509, fuel and electricity cost \$229,517 and materials for use in manufacturing processes cost \$795,956.

Table 31 -- PRINCIPAL STATISTICS OF THE IMPORTED CLAY PRODUCTS INDUSTRY, 1937 and 1938.

	1937	1938
Number of plants	19	21
Capital employed	\$ 4,457,109	4,690,306
Average number of employees	1,218	1,163
Salaries and wages	\$ 1,265,913	1,194,509
Cost of fuel and electricity	\$ 286,499	229,517
Cost of materials at works	\$ 971,497	795,956
Gross selling value of products at works	\$ 3,599,181	3,048,888

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 32 -- CAPITAL EMPLOYED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, BY PROVINCES, 1937 and 1938.

Province	Present value of land, buildings, machinery and tools	Inventory value of materials and finished products on hand and stocks in process	Operating capital (cash bills and accounts re- ceivable, etc.)	TOTAL CAPITAL EMPLOYED
	\$	\$	\$	\$
<u>1937</u>				
Ontario	1,703,366	690,558	518,095	2,912,019
Quebec	1,166,076	272,962	106,052	1,545,090
Saskatchewan				
CANADA	2,869,442	963,520	624,147	4,457,109
<u>1938</u>				
Ontario	1,630,019	675,969	757,621	3,063,609
Quebec	1,159,749	353,186	113,762	1,626,697
Saskatchewan				
CANADA	2,789,768	1,029,155	871,383	4,690,306

Table 33 -- EMPLOYEES, SALARIES AND WAGES IN THE IMPORTED-CLAY PRODUCTS INDUSTRY,
BY PROVINCES, 1937 and 1938.

Province	Average Number of Employees					Salaries	Wages	TOTAL SALARIES and WAGES
	On Salaries		On Wages		TOTAL			
	Male	Female	Male	Female				
						\$	\$	\$
1937								
Ontario	67	32	677	183	959	175,099	775,877	950,976
Quebec	27	7	214	11	259	66,502	248,435	314,937
Saskatchewan ...)								
CANADA	94	39	891	194	1,218	241,601	1,024,312	1,265,913
1938								
Ontario	88	36	620	167	911	226,428	664,991	891,419
Quebec	29	9	205	9	252	76,691	226,399	303,090
Saskatchewan ...)								
CANADA	117	45	825	176	1,163	303,119	891,390	1,194,509

Table 34 -- WAGE-EARNERS, BY MONTHS, IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937 and
1938. (On the last working day of each month)

Month	1 9 3 7			1 9 3 8		
	Male	Female	TOTAL	Male	Female	TOTAL
January	823	181	1,004	822	176	998
February	825	178	1,003	793	178	971
March	835	183	1,018	814	175	989
April	890	185	1,075	820	174	994
May	928	186	1,114	849	192	1,041
June	952	193	1,145	853	184	1,037
July	962	194	1,156	835	166	1,001
August	986	203	1,189	823	173	996
September	991	211	1,202	816	176	992
October	939	212	1,151	833	179	1,012
November	854	201	1,055	847	191	1,038
December	829	194	1,023	819	159	978
AVERAGE	891	194	1,085	825	176	1,001

Table 35 -- FUEL AND ELECTRICITY USED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937 and
1938

Kind	Unit of Measure	1 9 3 7		1 9 3 8	
		Quantity	Cost at Works \$	Quantity	Cost at Works \$
Coal, anthracite	short ton	6	103	6	91
Coal, bituminous - Canadian ..	short ton	913	5,506	504	2,881
Imported ..	short ton	22,859	162,629	17,830	123,462
Coke	short ton	1,210	11,495	818	6,994
Gasoline	Imp. gal.	6,403	1,464	8,870	1,971
Kerosene	Imp. gal.	176	24	685	104
Fuel oil	Imp. gal.	525,230	39,075	561,454	41,665
Wood	cord	53	280	85	454
Gas - Manufactured	M cu. ft.	376	315	303	273
Natural	M cu. ft.	81,739	33,568	36,332	25,704
Other fuel	xxx	...	...	...	157
Electricity purchased	K. W. H.	3,254,764	32,040	1,834,757	25,761
TOTAL .....	\$	...	286,499	...	229,517

Table 36 - POWER EQUIPMENT IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937 and 1938.

	1 9 3 7		1 9 3 8	
	Number of units	Total rated horse power	Number of units	Total rated horse power
Steam engines	3	415	3	465
Gasoline, gas and oil engines ...	1	23	1	40
Total Primary Equipment	4	438	4	505
Electric motors run by purchased power	304	1,860	427	2,039
TOTAL	308	2,298	431	2,544
Electric motors run by above primary units	24	284	24	284
Stationary boilers	15	1,068	16	1,149

Table 37 - MATERIALS USED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937 and 1938.

	1 9 3 7		1 9 3 8	
Material	Short tons	Total cost at works	Short tons	Total cost at works
		\$		\$
Imported clays - Ball clay	3,701	62,119	2,531	46,766
China clay	3,321	66,361	2,573	52,927
Fireclay	26,242	151,932	20,717	118,875
Saggar clay	918	9,096	462	4,376
Other imported clays .	1,704	14,175	640	7,517
Canadian clays - Fireclay,..)			202	1,879
Other clay,..)	2,692	3,870	3,491	2,699
Feldspar	2,428	46,068	1,890	35,979
Silica and ground quartz	3,032	44,648	2,576	38,441
Talc	110	1,460	160	2,119
Other glazing materials .....	...	17,461	...	15,793
Insulator hardware .....	...	263,093	...	219,367
Shipping containers and packing materials	...	73,510	...	75,186
All other materials .....	...	217,704	...	174,032
TOTAL .....	...	971,497	...	795,956

Table 38 - PRODUCTS MADE IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937 and 1938.

	1 9 3 7		1 9 3 8	
Products	Gross selling value at works		Gross selling value at works	
	\$		\$	
Firebrick and stove linings - Rigid	395,155		271,711	
Plastic	80,134		83,736	
High temperature cements	35,219		36,040	
High tension porcelain insulators, china sanitary ware, clay sewer pipe, floor and wall tile, pottery, china tableware, etc.	3,088,673		2,657,401	
(Separate figures cannot be shown for these items as there were only one or two producers in each case)				
TOTAL	3,599,181		3,048,888	

NOTE - Clay firebrick, floor tile, sewer pipe and pottery are also made in Canada from domestic clays (See Tables 7 and 39). High temperature cements and refractory bricks are made also by concerns in other industries. (See Tables 39 and 41.)

Table 39 -- TOTAL PRODUCTION IN CANADA OF RIGID FIREBRICK(x) and FIRECLAY BLOCKS and SHAPES, 1929 - 1938.

Year	From domestic clays		From imported clays		TOTAL
	Fireclay blocks and shapes	Firebrick	Rigid firebrick	and stove linings	
	\$	M	\$	\$	\$
1929	130,411	5,196	251,043	362,360	743,814
1930	147,309	3,789	177,608	298,945	623,862
1931	83,039	2,248	107,597	280,588	471,224
1932	75,209	1,580	71,757	212,838	359,804
1933	80,625	1,547	73,226	220,484	374,335
1934	62,388	2,109	101,219	275,472	439,079
1935	71,344	1,817	90,149	314,825	476,318
1936	65,171	2,548	118,923	330,602	514,696
1937	75,431	2,950	142,827	441,341	659,599
1938	73,512	2,213	113,581	448,494	635,587

(x) Includes some refractory brick made in the other industries but does not include refractory silica brick (See Table 40).

Table 40 -- TOTAL PRODUCTION IN CANADA OF SILICA BRICK, 1929 - 1938.

Year	Quantity	Selling value at works
	M	\$
1929	3,951	173,581
1930	2,418	97,379
1931	900	35,746
1932	93	4,304
1933	636	23,185
1934	2,528	85,945
1935	2,461	96,194
1936	2,393	97,285
1937	3,744	181,126
1938	1,788	100,403

Table 41 -- TOTAL PRODUCTION IN CANADA OF REFRACTORY CEMENTS AND PLASTICS, 1932 - 1938.
(From all industries)

Year	Short tons	Selling value at works
		\$
1932	800	118,402
1933	1,405	101,488
1934	2,119	142,290
1935	3,506	179,161
1936	3,784	212,607
1937	5,303	260,883
1938	7,155	377,687

LIST OF FIRMS INCLUDED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1938.

<u>Names of Firms and Location of Plants</u>	<u>Products Made, 1938.</u>
Canada Firebrick Company Ltd., 4741 St. Ambroise St., Montreal, P.Q.	Firebrick.
Canada Vitrified Products Limited, 675 Talbot St., St. Thomas, Ont.	Sewer pipe; flue linings.
Canadian General Electric Co. Ltd., 262 Townsend St., Peterborough, Ont.	Porcelain sockets, plugs, etc.; moulded textolite; high tension insulators.
Canadian Ohio Brass Company Ltd., Niagara Falls, Ont.	High tension insulators.
Canadian Porcelain Company Ltd., Paradise Road, Hamilton, Ont.	High tension insulators.
Canadian Potteries Ltd. St. Johns, P.Q.	Vitreous china sanitaryware.
Davisville Pottery 601 Merton Ave., Toronto, Ont.	Flower pots.
Dominion Fire Brick & Clay Products Ltd., P.O. Box 99, Moose Jaw, Sask.	Firebrick; high temperature cements.
Frontenac Floor and Wall Tile Co. Ltd., P.O. Box 178, Kingston, Ont.	Floor and wall tile, ground feldspar, porcelain balls.
Georgetown Clay Products, Georgetown, Ont.	Firebrick
Green, A.P., Firebrick Company Ltd. Leaside, Ont.	Plastic firebrick; high temperature cements
Hamilton Potteries Limited, 100 Locke St. S., Hamilton, Ont.	Insulators; firebrick, porcelain dies
National Refractories Limited Port Robinson, Ont.	Firebrick
Ontario Refractories Limited Fort Erie, Ont.	Firebrick
Plibrico Jointless Firebrick Ltd. Lake Shore Rd., New Toronto, Ont.	Plastic firebrick; high temperature cements; stove lining.
Robinson Clay Product Co. of Canada, Ltd. 127 Shaftesbury Ave., Toronto, Ont.	High temperature cements.
Smith Potteries, 353 King St. W., Oshawa, Ont.	Art pottery.
Sovereign Potters Ltd., 282 Sherman St. N., Hamilton, Ont.	China dinnerware.
Standard Clay Products Ltd., St. Johns, P.Q.	Vitrified clay sewer pipes; firebrick.
Turner, C. B., & Co. Reg'd. Mimico, Ont.	Plastic firebrick.
Walker-Hind-Sutherland Refractories Ltd., 309 St. Ferdinand St., Montreal, P.Q.	Refractory cements; plastic firebrick.

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