

Published by Authority of the HON. W. D. EULER, M.P.
Minister of Trade and Commerce.

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, 1937.

The Clay and Clay Products Industry in Canada is classified into two division: (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 162 plants representing a total capital investment of \$24,884,341 operated in the domestic and imported clay products industries in Canada during 1937. These two industries provided employment for 3,505 persons during the year; their earnings totalled \$3,360,705. The combined production in 1937 was valued at \$8,116,040 compared with \$6,377,459 in 1936.

1. PRODUCTION FROM DOMESTIC CLAYS, 1937.

The gross value of Canadian producers' sales of domestic clay products totalled \$4,516,859 in 1937; this represents an increase of 30.13 per cent over 1936 and the total value of the 1937 output was the greatest since that recorded for 1931. Ontario and Quebec continued as the Dominion's largest producers of materials manufactured from Canadian clays; of the total value of production in 1937, products from plants in Ontario were reported at \$2,033,845 while shipments by firms operating in Quebec totalled \$1,053,153. Commercial production of domestic clay products in 1937 was reported in every province except Prince Edward Island and the Territories.

Especially reflecting the better conditions recently experienced by all branches of the construction industry was an increase of 32.37 per cent in volume and 35.82 per cent in value in the production of building brick as compared with 1936. During the trade expansion of the late twenties Canadian production of building brick reached 458,630 M valued at \$3,003,358 in 1929 while the all-time high record in building brick output was realized in 1912 when sales totalled 894,372 M at \$3,620,229. The industrial depression during the early part of the past decade and to a lesser extent the increasing competition from other building materials were largely responsible for the drastic decline in the consumption of brick immediately following 1929 and it is gratifying to note that the industry has realized steady and unbroken annual increases in brick production since 1933.

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Drain tile and sewer pipe production in 1937 was valued at \$1,089,180, an increase of 35.63 per cent over that in 1936 and the production of refractories from Canadian clays was considerably greater than for some years past. In 1937 fireclay and fireclay blocks and shapes were commercially produced in Nova Scotia, New Brunswick, Saskatchewan and British Columbia, while firebrick from domestic clays was manufactured in Saskatchewan, Alberta and British Columbia.

Production of pottery in Canada from domestic clays totalled \$232,209 in 1937 compared with \$218,402 in 1936 and \$356,093 in 1928, the year which showed the greatest production of Canadian pottery ever recorded. Also indicative of the recovery in building was a production in 1937 of 64,526 tons of hollow blocks valued at \$533,843, this being the largest output of the material since 1931; these particular clay products were produced in all provinces with the exception of Prince Edward Island. There is no recorded commercial production of clay products in the Territories. For several years past a relatively small tonnage of bentonite has been produced in British Columbia and it is noteworthy that in 1937 the Dominion commercial output of this clay was increased by the production of 132 tons from deposits located in the province of Manitoba. The Bureau of Mines, Ottawa, reports that bentonite, both crude and activated, is often marketed and distributed under a variety of trade names which tend to conceal its identity, even being sold as "common clay"; it is thus difficult to obtain accurate figures of the amounts imported and consumed in Canada.

China clay has been produced commercially in Canada only from the vicinity of St. Remi d'Amherst, Papineau county, Quebec. Production has been spasmodic for some years. A group of open pits and mines was operated for several years prior to 1923. In 1931 a property in this area was developed mainly for the production of silica, but a small amount of china clay was also produced. The Bureau of Mines, Ottawa, states that in 1937 fresh development work was undertaken in this area, when, under new management, a shaft was sunk into the kaolinized quartzite deposit to a depth of 200 feet. A mill was being installed for the production of washed china clay and washed silica. Deposits of high-grade, white-burning clays occur on the Mattagami, Abitibi, and Missinaibi Rivers in Northern Ontario; some of these clays are classed as ball clays and others as china clays. Ball clays of high bond strength occur in extensive deposits in Southern Saskatchewan.

The number of firms comprising the domestic clay products industry of Canada and which were reported as active in 1937 totalled 137 compared with 133 in 1936. Census records show 426 brick and tile producers in Canada during 1871 and 343 in 1886.

Capital employed by the entire industry in 1937 totalled \$20,427,232; 143 plants were recorded as in production and \$2,094,792 were distributed as salaries and wages to 2,287 employees. The industry in 1937 consumed fuel and electricity valued at \$1,032,755 and process supplies used were appraised at \$103,568. Included with the fuels consumed in 1937 were 26,197 short tons of Canadian bituminous coal, 83,241 short tons of imported bituminous coal, 31,177 cords of wood and 878,233 thousand cubic feet of natural gas.

Imports into Canada of brick, clays and other clay products in 1937 were valued at \$9,108,976 compared with \$7,351,148 in 1936; of the imports in 1937 those from the United Kingdom totalled \$4,166,926 and those from the United States, \$4,217,650. Exports of clay products from Canada were valued at \$596,970 in 1937 as against \$526,856 in the preceding year.

SALES TAX - Under an Act to amend the Special War Revenue Act, assented to 1st July, 1938, the following building materials, among others, were exempted from sales tax for the first time:-

Bricks; building tile (including floor and wall tile); building blocks and building stone (including artificial stone and crushed stone, granite, and marble trim for buildings only); plaster (including hard wall plaster); lime; cement (including cement blocks); stucco and stucco dash; materials manufactured wholly or in part of vegetable or mineral fibre for wall coverings or building insulation; glass for buildings; prepared roofings; shower baths, bathtubs, basins, faucets, closets, lavatories and sinks and laundry tubs, not including pipes and pipe fittings.

Articles and materials to be used or consumed exclusively in the manufacture or production of the aforementioned building materials but not to include materials consumed by waste or wear, or abrasives, lubricating oils, fuel oils, permanent or non-permanent plant equipment.

The following refractories are also free from sales tax under amendments of previous years:-

Fire brick, plastic refractories, high temperature cement, fire clay and other refractory materials for use exclusively in the construction or repair of a furnace, kiln or other equipment of a manufacturer's establishment, and materials to be used or consumed exclusively in the manufacture of such fire brick or refractory materials.

NATIONAL BUILDING CODE (Mr. A. F. Gill, National Research Council). - At the beginning of this year a project was undertaken for the preparation of a model building code for Canada. It is under the joint auspices of the National Research Council, the Dominion Housing Administration and the Dominion Fire Commissioner and has been organized on a very comprehensive basis.

The purpose of the work is to establish minimum standards applicable to construction requirements, fire protection and considerations affecting health and sanitation for the guidance of municipalities in preparing their own codes. Actually it is hoped that by careful attention to the fundamental principles involved it will be possible to prepare a document that municipalities, large and small, will be able to adopt without alterations.

Work on the code is being prosecuted actively at the present time and it is planned to have it ready for press towards the end of 1939. Some 120 committee members are co-operating in various phases of the work. Advantage is being taken of recent developments in the building materials field and a considerable amount of research work is being done as the work progresses. It is hoped that the code when completed will be fully equal to the more authoritative ones at present in existence on this continent and that it will do much towards placing the use of building materials in this country on a more scientific basis.

TARIFF REVISIONS - Trade agreements between Canada and the United States and between the United Kingdom and the United States were signed at Washington on Thursday, November 17, 1938. The following statement prepared by the United States Tariff Commission shows the former and new rates of duty on certain clay products in Schedule ii (United States concessions to Canada), and the total imports of such products into the United States and the imports of such from Canada

according to preliminary United States statistics for the year 1937:- Fire brick, not specially provided for; rate of duty under tariff act of 1930, 25 per cent; under 1935 agreement, 15 per cent; under new agreement, 12½ per cent; total value of all such imports in 1937 was \$37,601; from Canada only, \$29,912. Brick, not specially provided for, not glazed, enamelled, etc., under tariff act of 1930, rate of duty, \$1.25 per thousand; under 1935 agreement, \$1.25 per thousand; under new agreement, \$1 per thousand; total value of all such imports in 1937, \$15,501; from Canada only, \$9,934. Bentonite, unwrought and unmanufactured; duty under tariff act of 1930 and the 1935 agreement, \$1.50 per ton; under new agreement, 75 cents per ton; there were no imports of crude bentonite into the United States in 1937. Wrought or manufactured bentonite; duty under the 1930 tariff and 1935 agreement, \$3.25 per ton; under new agreement, \$1.62½ per ton; in 1937 the value of imports of manufactured bentonite into the United States was \$30.

Table 1 - PRINCIPAL STATISTICS OF THE DOMESTIC CLAY PRODUCTS INDUSTRY IN CANADA, 1936 and 1937.

	1936	1937
Number of plants	140	143
Capital employed \$	19,863,431	20,427,232
Number of employees - On salary	229	261
On wages	1,546	2,026
Total	1,775	2,287
Salaries and wages - Salaries	\$ 390,737	471,891
Wages	\$ 1,107,411	1,622,901
Total	\$ 1,498,148	2,094,792
Selling value of products (gross)	\$ 3,471,027	4,516,859
Cost of fuel and purchased electricity. \$	695,001	1,032,755
Cost of process supplies	\$ 71,353	103,568
Net value of sales	\$ 2,704,673	3,380,536

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY, 1935 - 1937.

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 \$
NOVA SCOTIA -							
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
NEW BRUNSWICK -							
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
QUEBEC -							
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

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY,
1935 - 1937 (concluded)

Province and Year	Number of firms	Capital employed \$	Number of employ- ees	Salaries and wages paid \$	Cost of process supplies used \$	Cost of fuel and elec- tricity \$	Net value of sales \$
<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
<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
<u>SASKATCHEWAN -</u>							
1935 ...	4	981,362	44	38,933	673	10,472	87,005
1936 ...	3	871,074	33	57,147	776	11,429	83,379
1937	5	836,706	43	46,062	1,157	13,419	100,754
<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
<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
<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
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, 1926, 1936 and 1937.

Month	1936	1936	1937	
			Pit	Plant
January	1,936	694	48	843
February	1,963	725	46	873
March	2,591	727	50	1,100
April	3,179	979	137	1,403
May	4,188	1,770	345	2,139
June	4,695	2,206	419	2,408
July	4,686	2,400	465	2,423
August	4,505	2,276	485	2,453
September	3,950	2,260	424	2,237
October	3,790	1,911	369	2,069
November	3,273	1,301	302	1,709
December	2,714	1,047	113	1,368

Table 4 - NUMBER OF WAGE-EARNERS IN MONTH OF HIGHEST EMPLOYMENT WHOSE REGULAR HOURS PER WEEK WERE - (Overtime not included)

Hours per week	1937 Number	Hours per week	1937 Number
40 or less	146	51 - 53	47
41 - 43	17	54	416
44	445	55	247
45 - 47	44	56 - 59	309
48	497	60	601
49 - 50	248	Over 60	257

Table 5 - FUEL AND ELECTRICITY USED, 1936 and 1937.

Kind	Unit of measure	1 9 3 6	Cost at	1 9 3 7	Cost at
		Quantity	works \$	Quantity	works \$
Bituminous coal - Canadian ..	short ton	20,726	119,396	26,197	153,285
Imported ..	short ton	52,936	348,565	83,241	555,462
Anthracite coal - From United					
States ...	short ton	600	4,124	1,067	9,153
Other	short ton	186	1,010	283	2,357
Lignite coal	short ton	520	1,992	1,552	3,156
Coke	short ton	337	3,025	506	4,588
Gasoline	Imp. gal.	(x)25,203	5,463	52,337	11,264
Kerosene or coal oil	Imp. gal.	856	169	3,235	779
Fuel oil	Imp. gal.	15,567	1,808	39,029	4,034
Wood	cord	21,363	76,263	31,177	116,899
Gas - Natural	M cu.ft.	763,315	26,457	878,233	29,672
Electricity purchased	K. W. H.	7,765,144	106,058	10,315,203	141,420
Other fuel .....	\$	...	665	...	686
TOTAL	\$...	695,001	...	1,032,755

Electricity generated for own use	K. W. H.	169,399	...	265,604	...
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(x) Exclusive of consumption in motor vehicles.

Table 6 - POWER EQUIPMENT, INCLUDING STAND-BY, 1937.

Description	Number of units	Total horse power
Steam engines and steam turbines	63	5,105
Diesel engines	10	800
Gasoline, gas and oil engines, other than diesel	52	1,248
Electric motors - Operated by purchased power	535	16,628
Operated by power generated by es- tablishments	21	461
Boilers	71	6,089

Table 7 - PRODUCTION (SALES) OF DOMESTIC CLAY AND CLAY PRODUCTS IN CANADA, 1936 and 1937.

Products	Unit of measure	SALES		OR	SHIPMENTS	
		1936			1937	
		Quantity	\$		Quantity	\$
Clay - Fullers' earth	ton	...	...	...	...	...
Bentonite	ton	120(x)	180	163	1,971	
Fireclay	ton	2,437	17,639	4,123	26,081	
Kaolin (china clay)	ton	...	...	...	...	...
Fireclay blocks and shapes .....	\$	...	65,171	...	75,431	
Firebrick	M	2,548	118,923	2,950	142,827	
Brick - Soft mud process - Face	M	6,097	111,378	9,904	175,544	
Common	M	24,180	302,690	23,636	316,534	
Stiff mud process - Face	M	30,218	575,765	37,610	735,615	
(wire cut) Common	M	35,592	484,078	55,689	755,630	
Dry press - Face	M	8,961	165,924	12,565	233,542	
Common	M	10,241	100,785	14,136	152,662	
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	25	1,374	55	2,972	
Sewer brick	M	418	6,778	175	2,777	
Paving brick	M	116	3,149	3	131	
Structural tile -						
Hollow blocks (including fireproofing and load-bearing tile)	ton	58,501	467,860	64,526	533,843	
Roofing tile	No.	52,730	2,139	60,542	3,302	
Floor tile (quarries)	Sq.ft.	97,738	13,798	73,191	12,169	
Ceramic or glazed floor and wall tile. \$		...	...	...	...
Drain tile	M	8,148	214,590	11,391	298,970	
Sewer pipe (including copings, flue linings, etc.) .....	\$	...	588,485	...	(b) 790,210	
Pottery, glazed or unglazed (including coarse earthenware, stoneware, flower pots, and all other pottery) .....	\$	...	218,402	...	232,209	
Other products .....	\$	...	11,919	...	24,439	
TOTAL .....	\$	...	3,471,027	...	4,516,859	

(x) Partly used for experimental purposes.

(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 1936 was 94,943 short tons.

Table 8 - PRODUCTION (TOTAL SALES) OF CLAY PRODUCTS FROM DOMESTIC CLAYS, 1923-1934.

Year	\$	Year	\$
1923	10,483,016	1929	13,904,643
1924	9,215,077	1930	10,593,578
1925	9,529,691	1931	7,841,288
1926	10,357,323	1932	3,650,218
1927	11,173,189	1933	2,262,835
1928	12,381,718	1934	2,680,410

NOTE - See Table 9 for 1935 - 1937 figures.

Table 9 - PRODUCTION (TOTAL SALES) OF CLAY PRODUCTS, BY PROVINCES, 1935 - 1937.

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

Table 10 - PRODUCTION (SALES) OF BUILDING BRICK(a) - DOMINION TOTALS FOR YEARS SPECIFIED, 1905 - 1934.

Year	M	\$	Average value per M	Year	M	\$	Average value per M
			\$				\$
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				

(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		

Table 12 - PRODUCTION (SALES) OF BUILDING BRICK(a) IN CANADA, BY PROVINCES, 1935, 1936 and 1937.

Province	1935		1936		1937	
	M	\$	M	\$	M	\$
Nova Scotia	4,285	61,221	5,971	76,008	5,282	74,860
New Brunswick	1,689	27,718	2,263	32,120	4,529	66,409
Quebec	28,384	439,143	33,583	516,248	53,853	825,596
Ontario	48,896	822,764	55,959	907,678	66,363	1,113,521
Manitoba	3,763	56,207	2,922	47,970	5,533	85,421
Saskatchewan	477	7,529	777	19,175	371	5,793
Alberta	9,761	84,759	10,382	84,169	11,556	94,326
British Columbia	3,283	55,826	3,875	65,404	6,283	109,350
CANADA	100,538	1,555,167	115,732	1,748,772	153,770	2,375,276
Average value per M		\$ 15.47		\$ 15.11		\$ 15.45

(a) Includes fancy and sewer brick.

Table 13 - VALUE(b) OF DRAIN TILE AND SEWER PIPE PRODUCED (SALES) IN CANADA, BY PROVINCES, 1933, 1935, 1936 and 1937.

Province	1933	1935	1936	1937
	\$	\$	\$	\$
Nova Scotia	70,756	180,501	233,806	282,127
New Brunswick	64	160	35,392(x)	17,616
Quebec	61,310	65,344	40,373	57,365
Ontario	364,063	322,240	366,279	572,153
Manitoba	2,716	3,546	3,691(x)	3,524(x)
Saskatchewan .....	...	...	...	...
Alberta	37,042	65,776	69,355	87,690
British Columbia	41,336	49,328	54,179	68,705
CANADA	577,287	686,895	803,075	1,089,180

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

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

Table 15 - PRODUCTION (SALES) OF FIRECLAY BLOCKS AND SHAPES AND FIREBRICK, BY PROVINCES, 1937.

Province	FIRECLAY(x)		FIRECLAY BLOCKS and SHAPES		FIREBRICK	
	Short tons	\$		\$	M	\$
Nova Scotia	2,680	8,208	753	...	...	...
New Brunswick	42	1,660	800	...	...	...
Saskatchewan	771	6,881	63,106	522	27,010	...
Alberta .....	...	...	...	10	474	...
British Columbia	650	9,332	10,772	2,418	115,343	...
CANADA	4,123	26,081	75,431	2,950	142,827	...

(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 - 1937.

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	101,219	...
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	...

NOTE - Firebrick and fireclay blocks and shapes are made also from imported clays; see Tables 38 and 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
1918	130,242	1931	257,125
1923	229,547	1932	244,861
1924	238,242	1933	202,500
1925	267,255	1934	223,733
1926	320,135	1935	220,711
1927	307,057		

Table 18 - PRODUCTION (SALES) OF POTTERY FROM DOMESTIC CLAYS, BY PROVINCES, 1936 and 1937.

Province	1936	1937
	\$	\$
New Brunswick	29,529	32,805
Ontario	51,507	54,581
Alberta	134,491	135,245
British Columbia	2,875	9,578
CANADA	218,402	232,209

Table 19 - PRODUCTION OF STRUCTURAL TILE IN CANADA, BY PROVINCES, 1937.

Province	HOLLOW BLOCKS(x)		ROOFING TILE		FLOOR TILE (QUARRIES)	
	Short tons	\$	No.	\$	Sq.ft.	\$
Nova Scotia	4,471	40,898	...	...	...	...
New Brunswick	589	4,586	...	...	...	...
Quebec	20,016	169,632	...	...	...	...
Ontario	32,864	262,988	36,152	2,117	70,329	11,708
Manitoba	638	5,432	...	...	...	...
Saskatchewan	775	7,553	...	...	...	...
Alberta	2,841	20,903	...	...	...	...
British Columbia	2,332	21,851	24,390	1,185	2,862	461
CANADA	64,526	533,843	60,542	3,302	73,191	12,169

Table 20 - PRODUCTION OF STRUCTURAL TILE IN CANADA, 1929 - 1937.

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

(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, 1928-1937.

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	...	...

(x) All from British Columbia 1928-1936 inclusive; in 1937 includes 132 tons at \$1,154 produced in Manitoba and 31 tons at \$917 in British Columbia.

(a) All from Quebec.

(b) Partly for experimental purposes.

Table 22 - FULLERS' EARTH USED IN CANADA IN THE MANUFACTURE OF SOAPS AND WASHING COMPOUNDS AND IN THE PETROLEUM PRODUCTS INDUSTRY, 1930-1937.

Year	Petroleum Products Industry		Soaps and Washing Compounds	
	Pounds(x)	\$	Pounds	\$
1930	20,102,387	241,793	Data not available	
1931	16,157,582	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

(x) Includes all clay.

Table 23 - CHINA CLAY (KAOLIN) USED IN THE MANUFACTURE OF PAPER IN CANADA, 1930-1937.

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

Table 24 - FIREBRICK AND FIRECLAY USED IN THE MANUFACTURE OF IRON AND STEEL AND THEIR PRODUCTS IN CANADA, 1931 - 1936.

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)

(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 1937 are not yet complete but firebrick and fireclay used by the Canadian primary iron and steel industry in steel furnaces during 1937 was valued at \$638,326 compared with \$499,598 in 1936.

Table 25 - CLAYS AND EARTHS USED IN CANADIAN RUBBER INDUSTRY, 1933 - 1936.

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

NOTE - Data for 1937 not yet complete.

Table 26 - FULLERS' EARTH USED IN SPECIFIED CANADIAN INDUSTRIES, 1932 - 1936.

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	1,730	243,720	10,044

(a) Not recorded.

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

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

Type	1929	1932	1935	1936	1937
	\$	\$	\$	\$	\$
Residential ...	128,901,300	28,692,600	36,408,500	42,857,900	56,207,000
Business	190,161,700	39,399,200	48,442,200	37,771,000	55,288,800
Industrial	62,968,800	7,820,400	10,292,200	14,973,700	33,779,800
Engineering ...	194,620,000	56,760,200	65,162,100	66,985,400	78,781,100
TOTAL	576,651,800	132,872,400	160,305,000	162,588,000	224,056,700

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

Table 28 - DESCRIPTION and VALUE OF WORK PERFORMED IN CANADA BY ALL TRADE AND SUB-CONTRACTORS, 1936 and 1937. (x)

Nature	1936	1937
	\$	\$
Brick laying	1,547,282	1,838,891
Carpentry work	1,802,885	1,759,484
Concreting and cement work	2,028,503	2,094,417
Electrical work	6,394,776	8,449,179
Elevators, service	2,552,853	2,427,053
Excavating	540,398	915,976
Flooring, all kinds	740,104	1,120,029
Glass and glazing	1,797,248	2,369,274
Heating and plumbing	19,476,547	23,436,065
Lathing, plastering and stucco	3,066,348	3,638,632
Masonry and stone work	966,258	1,049,419
Ornamental iron work	1,095,986	1,198,885
Painting and decorating	5,755,830	6,462,081
Roofing	3,789,420	5,069,698
Sheet metal work, other than roofing	3,339,946	4,751,018
Tiling and marble work	2,337,585	2,436,764
Weatherstripping and insulation	858,889	982,843
Sprinkler installation	522,650	1,032,847
Structural steel work	10,249,627	16,199,867
Air conditioning	96,275	974,495
All other trades	4,175,320	5,860,701
(b) TOTAL VALUE OF WORK PERFORMED	73,434,730	94,067,618

(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, 1934, 1935 and 1936. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country and Description	1934	1935	1936
<u>BRITISH EMPIRE</u>			
United Kingdom	690,129	707,572	746,922
Union of South Africa	369	226	344
Canada	43	152	...
Federated Malay States	164	91	121
India	20,562	14,435	18,005
Unfederated Malay States	142	5	...
Australia	12,078	14,661	(a)
<u>FOREIGN COUNTRIES</u>			
Austria	13,572	19,400	(a)
Belgium (e)	14,291	15,363	18,848
Bulgaria	6,181	5,271	1,892
Czechoslovakia (estimated)	350,000	350,000	400,000
Denmark - Crude	42,400	34,900	27,700
Washed and pressed	11,200	9,800	8,500
Dried	700	...	...
France	134,100	110,500	(a)
Germany - Bavaria	677,287	657,205	141,913
Prussia	61,793	68,074	76,795
Saxony - Crude	35,940	47,622	45,855
Washed	43,054	44,101	50,298
Sand	10,114	(a)	(a)
Thuringia - Sand	(a)	(a)	5,018
Italy - Crude	37,233	66,195	109,311
Washed and ground (c)	4,452	5,000	(a)
Kaolinic earth	(a)	1,500	(a)
Portugal - Washed	11,278	13,236	11,442
Kaolinic sand	366	340	384
Roumania (d)	14,546	13,288	(a)
Spain (g)	1,348	(a)	(a)
Sweden	2,337	2,712	2,668
Algeria	1,523	1,253	2,570
United States (f)	380,656	467,550	570,481
Argentina	45	604	426
Chile	7,009	6,807	(a)
China (b)	792,000	(a)	(a)
Japan (estimated)	400,000	400,000	400,000
Korea	23,051	32,873	24,322
"Manchoukuo"	160,000	(a)	(a)
Netherlands East Indies .....	...	12	9

China clay is also produced in U.S.S.R. (Russia).

(a) Information not available.

(b) Includes fireclay.

(c) Derived from crude and stocks.

(d) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons.

(e) "Eurite" and kaolin.

(f) Sales of china clay and paper clay.

(g) 4,540 cubic metres of kaolinic sand were also produced in quarries during 1934.

Table 30 - IMPORTS INTO CANADA and EXPORTS OF CLAY and CLAY PRODUCTS, 1936 and 1937.

		1936		1937	
		Quantity	\$	Quantity	\$
IMPORTS					
Building brick	ton	2,544	24,310	1,477	18,485
Building blocks and fireproofing tile	\$	...	7,274	...	17,121
Clays - China	cwt.	833,807	342,654	1,103,891	445,073
Fire	cwt.	1,398,931	192,640	1,590,207	250,393
Pipe .....	\$	...	2,793	...	4,910
Other clays, n.o.p. ....	\$	...	238,159	...	224,160
Zirconium silicate .....	\$	...	2,547	...	2,065
Zirconium oxide .....	\$	...	23,153	...	32,668
Drain tile, unglazed .....	\$	...	22	...	2,705
Drain, sewer pipe, and earthenware fittings therefor, chimney linings or vents, chimney tops or inverted blocks, glazed or unglazed, n.o.p..	\$	...	15,297	...	20,322
Tiles or blocks of earthenware or stone prepared for mosaic flooring.	\$	...	46,377	...	44,869
Tiles, earthenware, for roofing purposes .....	\$	...	6,120	...	13,621
Tiles, earthenware, n.o.p. ....	\$	...	132,305	...	138,033
Insulators, electric, porcelain ....	\$	...	67,596	...	113,102
Pottery and chinaware .....	\$	...	3,672,867	...	4,170,558
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. ....	\$	...	93,293	...	143,160
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) .....	\$	...	357,733	...	449,301
Firebrick, n.o.p. ....	\$	...	608,749	...	989,603
Firebrick, chrome .....	\$	...	68,082	...	103,287
Magnesite brick (fire) .....	\$	...	568,565	...	653,507
Silica brick (containing not less than 90 per cent silica) .....	\$	...	261,974	...	539,253
Paving brick	ton	1,216	11,122	1,615	13,547
Artificial teeth, not mounted .....	\$	...	337,252	...	387,024
Baths, bathtubs, basins, laundry tubs, etc., of earthenware, cement or clay, n.o.p. ....	\$	...	90,614	...	151,264
Ceramic insulator cores, not further manufactured than burned and glazed, printed or decorated or not, and without fittings, when imported by manufacturers of spark plugs for use exclusively in the manufacture of spark plugs in their own factories(x) ....	\$	...	54,516	...	...
Saggars (a) .....	\$	...	...	...	4,646
Crucibles, clay or sand .....	\$	...	54,162	...	38,839
Other manufactures of clay, n.o.p. ..	\$	...	70,992	...	137,460
TOTAL .....	\$	...	7,351,148	...	9,108,976
From - United Kingdom .....	\$	...	3,573,639	...	4,166,926
United States .....	\$	...	3,110,926	...	4,217,650

Table 30 - IMPORTS INTO CANADA and EXPORTS OF CLAY and CLAY PRODUCTS, 1936 and 1937
(concluded)

		1	9	3	6	1	9	3	7
		Quantity				Quantity			

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1937.

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>NOVA SCOTIA -</u>		
Brooks, Stephen, & Sons (a)	Box 359, New Glasgow	New Glasgow
MacIntyre, A. D. (a)	11 Sheriff Ave., Sydney	Sydney
Miller, James B.	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.
Begin, Olivier	R. R. 1, Petite Riviere	Petite Riviere
Bourbeau, Geo., & fils	R. R. 1, Danville	Kingsey Falls
Canada China Clay Ltd.	85 Richmond St. W., Toronto, Ont.	St. Remi d'Amherst
Champlain Brick Ltd.	56 rue de la Chapelle, Quebec	Beauport-Est
Chicoutimi Brick Co. Ltd.	Chicoutimi	Chicoutimi
Citadel Brick Ltd.	14 St. Joseph St., Quebec	L'Islet Station, Boischatel
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.	Box 114, Shawville	Clarendon Tp.
LaPrairie Co. Inc.	660 St. Catherine St. W., Montreal	LaPrairie Co., Delson
Lotbiniere Brick Co.	Deschaillons	Deschaillons
Montreal Terra Cotta Ltd.	1010 St. Catherine St. W., Montreal	Lakeside
Panet Brick Co. Ltd.	L'Islet Station	L'Islet Station
Potvin, Alphonse	Deschaillons	Deschaillons
St. Lawrence Brick Co. Ltd.	1010 St. Catherine St. W., Montreal	Laprairie
Scott Brick Co.	Scott Junction	Dorchester Co.
Standard Clay Products Ltd.	Box 189, St. Johns	St. Johns
<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	Box 537, Kingsville	Essex County
Canadian Pressed Brick Co. Ltd.	Kenilworth Ave. 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
Coutts, Geo., & Son	Thedford	Lambton Co.
Curtin, F., Estate	R. R. 4, Lindsay	Victoria Co.
Curtis Bros.	Box 809, Peterborough	Otonabee Tp.
Deller, A., & Sons	R. R. 4, Brownsville	Oxford Co.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS,
1937. (continued)

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>ONTARIO (continued)</u>		
Deller Bros.	R. R. 2, Norwich	Oxford Co.
Deller, Wm. H.	R. R. 4, Thorndale	W. Nissouri Tp.
Dochard Brick, Tile & Terra Cotta Works	Arnprior	Arnprior
Donaldson, Thos. Geo.	R. R. 1, Greenock	Culross Tp.
Douglas & Douglas	Wilkesport	Lambton Co.
Dover Brick and Tile Works	Chatham	Dover Tp.
Elliott, Chas.	Bluevale	Huron Co.
Elliott, Jas., Jr.	Sault Ste. Marie	Korah Tp.
Elliott, Wm.	Glenannan	Bruce Co.
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
Godfrey, Thos., & Co.	Carleton Place	Lanark Co.
Gomall Brick & Tile Works	Powassan	S. Himsworth Tp.
Grimsby Brick & Tile Co.	Grimsby	Grimsby
Hamilton Pressed Brick Co. Ltd.	211 Kensington Ave. S., Hamilton	Wentworth Co.
Harper Brick Works	348 Greenwood Ave., Toronto	Toronto
Hill, Aaron	Essex	Essex
Hill, Albert W.	R. R. 1, Coatsworth	Tilbury E. Tp.
Hitch, D. A.	Box 236, Ridgetown	Howard Tp.
Hitch, Thos.	Box 554, St. Thomas	St. Thomas
Hodder, Mrs. J. H., & Sons	Dutton	Elgin Co.
Howlett, Fred W., & Sons, Ltd.	Box 3, Petrolia	Petrolia, Brigden.
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 Co.
Jaspersen Brick & Tile Co.	Kingsville	Coatsworth
Jervis, W. J.	R. R. 3, Dorchester	N. Dorchester
Johnson, Jas., Estate of	Pembroke	Stafford Tp.
Koebel Bros.	Box 3, St. Clements	St. Clements
Lindsay, Earl, & Sons	R. R. 2, Wallaceburg	Kent Co.
McComb, Chester	R. R. 2, London	Middlesex Co.
McCormick, Thos. L.	R. R. 5, Watford	Lambton Co.
Milton Brick Ltd.	170 Bloor St. W., Toronto	Milton
Moulton, J.	R. R. 2, Holyrood	Greenock Tp.
Napanee Brick & Tile Works	R. R. 3, Napanee	Lennox Co.
National Fireproofing Co. of Canada, Ltd.	96 Bloor St. W., Toronto	Wentworth Co.
National Sewer Pipe Co. Ltd.	Aldershot	E. Flamboro Tp., Aldershot, Hamilton, Swansea.
New Liskeard Brick Works	Box 74, New Liskeard	New Liskeard
Ontario Brick and Tile Plant (Government)	Parliament Bldgs., Toronto	Mimico.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC
CLAYS, 1937 (continued)

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>ONTARIO - (concluded)</u>		
O'Reilly, T. E.	320 Bay St., Ottawa	Carleton Co.
Ottawa Brick & Terra Cotta Co.Ltd.	Billings Bridge	Carleton Co.
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 Co.
Phippen & Son	Dawes Road, Box 11, Coleman	E. York Tp.
Richardson, J., & Son	Kerwood	Kerwood
Rollins, D. W.	136 Dundas St., Belleville	Thurlow Tp.
Snelgrove, A.	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.
Tope Construction Co.	Main St. W., Hamilton	Hamilton
Toronto Brick Co. Ltd.	897 Bay St., Toronto	Toronto, York Tp.
Wagstaff Brick & Tile Yard	R. R. 4, Lindsay	Victoria Co.
Wallace, M. J., & Son	Toronto General Trusts Corp., 253 Bay St., Toronto	Widdifield Tp.
Wein, Aaron	Crediton	Huron Co.
Weitzel, John E.	R. R. #1, Tavistock	E. Zorra Tp.
Wright, Geo., & Sons	Comber	Comber
<u>MANITOBA -</u>		
Alsip Brick, Tile & Lumber Co.Ltd.	537 Portage Ave., Winnipeg	Winnipeg
O'Day, J.E. (b)	971 McMillan Ave., Winnipeg	Winnipeg
Snyder Brick Yards Ltd.	Portage La Prairie	Portage la Prairie
Spencer, E. H.	R. R. 1, Morden	Morden
Wardrop, D. M.	Whitemouth	Whitemouth
Wollke, Peter (b)	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.	Box 399, Estevan	Estevan, Prince Albert
Midland, H.	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
Gunderson Brick & Coal Co. Ltd.	Redcliff	Redcliff
Johanson, Knut	Grande Prairie	Grande Prairie
Little, J. B., & Sons Ltd.	9120 - 100th Ave., Edmonton	Edmonton
Medicine Hat Brick & Tile Co.Ltd.	Medicine Hat	Medicine Hat
Redcliff Pressed Brick Co.Ltd.(a)	Redcliff	Redcliff
Redcliff Premier Brick Co. Ltd.	Redcliff	Redcliff

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS, 1937. (concluded)

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>BRITISH COLUMBIA -</u>		
Baker Brick & Tile Co. Ltd.	3191 Douglas St., Victoria	Victoria
Clayburn Co. Ltd. (a)	850 W. Hastings St., Vancouver	Kilgard
Gabriola Shale Products Ltd.	1304 Broad St., Victoria	Gabriola Island
Gorse, Percy A.	Salmon Arm	Kamloops
Gypsum, Lime and Alabastine, Canada, Ltd. (b)	Paris, Ontario	Port Mamm
Haug, Wm., & Son	Kelowna	Kelowna
Kilgard Firebrick Co. Ltd. (a)	2521 Maple St., Vancouver	Kilgard
Port Haney Brick Co. Ltd.	846 Howe St., Vancouver	Port Haney
Richmond, Geo. W., and Co. (a)	2635 W. 15th Ave., Vancouver	Kilgard
Vancouver Brick & Tile Ltd.	Ft. Columbia Ave., Vancouver	New Westminster and Sullivan

(a) Includes production of refractories.

(b) Produces bentonite.

CANADIAN PRODUCERS OF STONEWARE and POTTERY FROM DOMESTIC CLAYS, 1937.

<u>NEW BRUNSWICK -</u>		
The Foley Pottery Ltd. (a)	Saint John	Saint John
<u>ONTARIO -</u>		
The Foster Pottery Co.	Main St. W., Hamilton	Hamilton
London Pottery Mfg. Co.	95 Rectory St., London	London
<u>ALBERTA -</u>		
Alberta Potteries, Ltd.	Redcliff	Redcliff
Medalta Potteries Ltd.	620 Third St. W., Calgary	Medicine Hat
<u>BRITISH COLUMBIA -</u>		
B. C. Clay Products Co.	3439 Euclid Ave., Vancouver	Vancouver

(a) Includes production of refractories.

11. PRODUCTS FROM IMPORTED CLAYS, 1937.

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 1937 included high tension insulators, enamelled sanitary ware, china tableware, firebricks, wall tile, refractory cements, pottery, and electrical porcelains such as sockets, plugs, etc.

Nineteen plants reported in this group in 1937 and their output valued at \$3,599,181 was 24 per cent higher than last year's total of \$2,906,432, the latter figure in turn being 33 per cent greater than the \$2,174,977 of 1935. Capital employed in this industry amounted to \$4,457,109 and the average number of workers was 1,218. Salaries and wages amounted to \$1,265,913, the cost of materials used in manufacturing processes was \$971,497, and expenditures for fuel and electricity totalled \$286,499.

Table 31 - PRINCIPAL STATISTICS OF THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936 and 1937.

	1936	1937
Number of plants	20	19
Capital employed	\$ 4,216,334	4,457,109
Average number of employees	1,079	1,218
Salaries and wages	\$ 1,001,047	1,265,913
Cost of fuel and electricity	\$ 214,762	286,499
Cost of materials at works	\$ 708,576	971,497
Gross selling value of products at works	\$ 2,906,432	3,599,181

Table 32 - CAPITAL EMPLOYED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, BY PROVINCES, 1936 and 1937.

Province	Present value of land, build- ings, 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>1936</u>				
Ontario	1,489,021	676,473	448,969	2,614,463
Quebec	1,274,127	192,663	135,081	1,601,871
Saskatchewan				
CANADA	2,763,148	869,136	584,050	4,216,334
<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

Table 33 - EMPLOYEES, SALARIES AND WAGES IN THE IMPORTED-CLAY PRODUCTS INDUSTRY,
BY PROVINCES, 1936 and 1937.

Province	Average Number of Employees					Salaries	Wages	TOTAL
	On Salaries		On Wages		TOTAL			SALARIES
	Male	Female	Male	Female				and WAGES
						\$	\$	\$
1936								
Ontario	73	31	589	190	883	184,053	600,308	784,361
Quebec	30	7	153	6	196	60,555	156,131	216,686
Saskatchewan								
CANADA	103	38	742	196	1,079	244,608	756,439	1,001,047
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

Table 34 - WAGE-EARNERS, BY MONTHS, IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936
and 1937. (On 15th of each month or nearest representative date)

Month	1 9 3 6			1 9 3 7		
	Male	Female	TOTAL	Male	Female	TOTAL
January	622	185	807	823	181	1,004
February	605	177	782	825	178	1,003
March	626	189	815	835	183	1,018
April	640	186	826	890	185	1,075
May	640	186	826	928	186	1,114
June	644	177	821	952	193	1,145
July	694	182	876	962	194	1,156
August	704	184	888	986	203	1,189
September	724	204	928	991	211	1,202
October	759	216	975	939	212	1,151
November	787	213	1,000	854	201	1,055
December	795	217	1,012	829	194	1,023
AVERAGE	742	196	938	891	194	1,085

Table 35 - FUEL AND ELECTRICITY USED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936
and 1937.

Kind	Unit of measure	1 9 3 6		1 9 3 7	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Coal, anthracite	short ton	41	437	6	103
Coal, bituminous - Canadian	short ton	838	5,531	913	5,506
Imported	short ton	17,554	117,155	22,859	162,629
Coke	short ton	1,050	9,975	1,210	11,495
Gasoline	Imp. gal.	100	24	6,403	1,464
Kerosene	Imp. gal.	155	22	176	24
Fuel oil	Imp. gal.	410,459	29,381	525,230	39,075
Wood	cord	50	341	53	280
Gas - Manufactured	M cu.ft.	360	289	376	315
Natural	M cu.ft.	46,831	19,637	81,739	33,568
Electricity purchased	K. W. H.	3,495,984	31,970	3,254,764	32,040
TOTAL .....	\$	...	214,762	...	286,499

Table 36 - POWER EQUIPMENT IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936 and 1937.

	1	9	3	6		1	9	3	7
	Number of units				Total rated horse power				
Steam engines	3			440	3			415	
Gasoline, gas and oil engines	1			23	1			23	
Total Primary Equipment	4			463	4			438	
Electric motors run by purchased power	260			1,725	304			1,860	
TOTAL	264			2,188	308			2,298	
Electric motors run by above primary units	21			242	24			284	
Total Electric Motors	281			1,967	328			2,144	
Boilers	14			943	15			1,068	

Table 37 - MATERIALS USED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936 and 1937.

	1	9	3	6		1	9	3	7
Material	Short tons				Total cost at works				
					\$				\$
Imported clays - Ball clay	2,449			41,438	3,701			62,119	
China clay	2,894			44,942	3,321			66,361	
Fireclay	21,593			124,623	26,242			151,932	
Saggar clay	586			4,467	918			9,096	
Other imported clays ..	2,092			14,473	1,704			14,175	
Canadian clays	1			11	2,692			3,870	
Feldspar	1,572			28,521	2,428			46,068	
Silica and ground quartz	2,305			26,722	3,032			44,648	
Talc .....	...			...	110			1,460	
Other glazing materials	21			11,596	...			17,461	
Insulator hardware .....	...			117,663	...			263,093	
Shipping containers and packing materials	...			59,797	...			73,510	
All other materials .....	...			234,323	...			217,704	
TOTAL .....	...			708,576	...			971,497	

Table 38 - PRODUCTS MADE IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1936 and 1937.

	1	9	3	6		1	9	3	7
Products	Gross selling value at works					Gross selling value at works			
					\$				\$
Firebrick and stove linings - Rigid				330,602				395,155	
Plastic				59,618				80,134	
High temperature cements				24,961				35,219	
High tension porcelain insulators, china sanitaryware, clay sewer pipe, floor and wall tile, pottery, china tableware, etc.....				2,491,251				3,088,673	
(Separate figures cannot be shown for these items as there were only one or two producers in each case)									
TOTAL				2,906,432				3,599,181	

NOTE - Clay firebrick, floor tile, sewer pipe and pottery are also made in Canada from domestic clays (See Tables 7 and 38). High temperature cements and refractory bricks are made also by concerns in other industries (See Tables 38 and 40).

Table 39 - TOTAL PRODUCTION IN CANADA OF RIGID FIREBRICK(x) and FIRECLAY BLOCKS and SHAPES, 1929-1937.

Year	From domestic clays		:From imported clays				
	Fireclay blocks		: Rigid firebrick :				
	and shapes		Firebrick		: and stove linings:		TOTAL
	\$	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(x)		439,079
1935	71,344	1,817	90,149		314,825(x)		476,318
1936	65,171	2,548	118,923		330,602		514,696
1937	75,431	2,950	142,827		441,341		659,599

(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 - 1937.

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

Table 41 - TOTAL PRODUCTION IN CANADA OF HIGH TEMPERATURE CEMENTS, 1932 - 1937.
(From all industries)

Year	Short Tons	Selling value
		at works
		\$
1932 .....	...	118,402
1933	1,405	101,488
1934	2,119	142,290
1935	2,218	136,562
1936	2,420	153,303
1937	2,367	147,711

LIST OF FIRMS INCLUDED IN THE IMPORTED-CLAY PRODUCTS INDUSTRY, 1937.

<u>Names of Firms and Location of Plants</u>	<u>Products Made, 1937.</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.; textolite parts; 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.
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 tile; wall tile, ground feldspar.
Green, A. P., Firebrick Company, Ltd. Commercial St., 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, 373 King St. W., Oshawa, Ont.	Art pottery.
Sovereign Potters Ltd., 232 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.	Furnace lining.
Walker-Hind-Sutherland Refractories Ltd., 309 St. Ferdinand St., Montreal, P.Q.	Refractory cements; plastic firebrick.

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