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THE CLAY AND CLAY PRODUCTS INDUSTRY, 1940

The industrial clays of Canada may be classified as common clays, stoneware clays, fireclays, and china clays. Statistically, the ceramic industry of Canada is conveniently classified into two divisions: (1) Production from domestic clays, which includes the production of building brick, structural tile, drain tile, roofing tile, stoneware, sewer pipe, pottery and refractories, and (2) production from imported clays, which includes the manufacture of electrical porcelain, sanitary ware, sewer pipe, table ware, pottery, ceramic floor and wall tile, and various kinds of fireclay refractories.

A total of 164 plants representing a total capital investment of $22,505,633 operated in the domestic and imported clay products industries in Canada during 1940. These two industries provided employment for 3,958 persons during the year; their earnings totalled $4,248,861. The combined production in 1940 was valued at $10,848,338 compared with $8,123,215 in 1939.

1. PRODUCTION FROM DOMESTIC CLAYS, 1940

The gross value of Canadian producers' sales of domestic clays and products made from same totalled $6,344,547 in 1940 compared with $5,151,236 in 1939 and $13,904,643, the all-time high record established in 1929. Commercial production of domestic clay products in 1940 was reported from every province except Prince Edward Island; no output of these materials has as yet been recorded for the Yukon and Northwest Territories. Of the total value of sales in 1940, Ontario and Quebec firms contributed $2,508,540 and $1,546,246 respectively.

Sales of building brick in 1940 totalled 191,213 thousand, valued at $3,277,187. Sewer pipe shipments aggregated $1,152,603; hollow blocks, roofing and floor tile $803,948; drain tile, $277,551 and pottery, including earthenware, $474,452.

Fireclay was mined in Nova Scotia, Saskatchewan and British Columbia and sales of this material totalled 4,881 short tons valued at $30,564. Firebrick made from Canadian clays in 1940 numbered 3,167 thousand worth $165,525. Bentonite shipments during the year under review amounted to 1,469 short tons valued at $4,488.

The number of firms reported as active in the Canadian domestic clay products industry totalled 139 in 1940, of which 75 were located in Ontario, 19 in Quebec, 12 in British Columbia, 12 in Alberta and the balance in Nova Scotia, New Brunswick, Saskatchewan and Manitoba. Capital employed by the industry as a whole was reported at $17,146,443, employees numbered 2,557 and salaries and wages paid amounted to $2,675,251. Fuel and electricity used during 1940 were appraised at $1,282,593 and chemicals and various other process supplies consumed were valued at $139,635.

Imports into Canada in 1940 of clay and its products, in all forms, were valued at $11,125,118 compared with $7,934,630 in 1939. Of the 1939 imports, $3,610,781 came from the United Kingdom and $3,887,187 from the United States;

corresponding data for 1940 are not published.

Exports in 1940 of clay and clay products made in Canada were appraised at $498,047 compared with $542,788 in 1939.

The following information is from an annual report for 1940 as prepared by the Bureau of Mines, Ottawa:

"The largest producing area in Canada of stoneware clay or semi-fireclays lies in the vicinity of Eastend and Willows, Saskatchewan, where large quantities of the clays are selectively mined and shipped to Medicine Hat, Alberta, to be extensively utilized (owing to the availability of cheap gas fuel) in the manufacture of stoneware, sewer pipe and pottery.

"Stoneware clays and moderately refractory fireclays occur near Shubenacadie and Musquodoboit, Nova Scotia. A small amount of the Musquodoboit clay is used for the production of pottery, but there has been no extensive exploitation of these clays for ceramic use.

"Stoneware clays or low-grade fireclays are known to occur near Williams Lake, and Chimney Creek Bridge in British Columbia; in the Cypress Hills of Alberta, and near Swan River, Manitoba, but as yet there has been little or no development, owing to their comparative inaccessibility.

"Two large plants and a few small plants in Canada manufacture fireclay refractories from domestic clay. One, about 50 miles south of Vancouver, B.C., extracts a high grade, moderately plastic fireclay (by underground mining) from the clay beds in the Sumas Mountain, and manufactures firebrick and other refractory materials. Another plant at Claybank, Saskatchewan, by selective mining, utilizes the highly plastic refractory clays from the "White Mud" beds of southern Saskatchewan.

"A small amount of the most refractory clays in the deposits near Shubenacadie is mined and used by the steel plant at Sydney, N.S. for refractory purposes and the Musquodoboit clay is utilized to some extent for stove linings. Except for a few small concerns manufacturing refractory specialties, and companies producing firebrick, blocks, etc., for their own use, all other manufacturers of fireclay refractories in Canada utilize imported clay.

"China clay has been produced commercially in Canada only from the vicinity of St. Remi d'Amherst, Papineau county, Quebec, where a group of open pits were operated for several years prior to 1923. In 1937 a reorganized company was formed to extract the kaolinized material by underground mining and to refine it into high grade china clay, washed silica sand forming a by-product. A shaft has been sunk to a depth of 365 feet, and a mill erected to carry out the washing process in accordance with the most modern methods. In 1931 a nearby property was developed, mainly for the production of silica sand, but a small amount of china clay has also been produced.

"Important deposits of high grade, plastic white-burning clays, and buff-burning clays occur in 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 aroused much interest in recent years, but have not as yet been commercially developed, owing to their remoteness from industrial centres, and the 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 that compares favourably with the best china clays found on this continent. Transport by barge to railway has been considered but as yet little development has taken place.

"In the manufacture of such products as porcelain, sanitary ware, dinner ware, ceramic floor and wall tile, etc., china clay imported from England is used almost entirely. In addition to clay for ceramic use, large annual importations of china clay are made into Canada for use in the production of fine paper, in the rubber industry, and for other industrial purposes. The imports of china clay in 1940 were valued at $483,399, compared with $376,750 for the previous year.

"Ball clays of high bond strength occur in the white mud beds of southern Saskatchewan but as yet these have not been developed to any extent.

"Common clays suitable for the production of building brick and tile are to be found in all the provinces of Canada.

"Compared to world production, the value of clay products manufactured in Canada is very small, and large quantities of the various kinds of ceramic products are imported annually. The total value of manufactured ceramic products imported into Canada was $9,677,723 in 1940, compared with $6,992,382 in 1939."

Table 1 - PRINCIPAL STATISTICS OF THE DOMESTIC CLAY PRODUCTS INDUSTRY IN CANADA, 1939 and 1940

		1939	1940
Number of plants		149	143
Capital employed	$	17,940,742	17,146,443
Number of employees - On salary		261	296
On wages		1,904	2,261
Total		2,165	2,557
Salaries and wages - Salaries	$	526,960	605,913
Wages	$	1,634,728	2,069,338
Total	$	2,161,688	2,675,251
Selling value of products (gross)	$	5,151,236	6,344,547
Cost of fuel and purchased electricity	$	938,683	1,282,593
Cost of process supplies	$	108,815	139,635
Net value of sales	$	4,043,738	4,922,319

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY, 1936 - 1940

Province and year	Number of firms	Capital employed	Number of employees	Salaries and wages paid	Cost of process supplies used	Cost of fuel and electricity	Net value of sales
		$		$	$	$	$
NOVA SCOTIA -							
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
1939	6	933,708	142	129,870	3,270	62,994	273,688
1940	5	904,821	139	141,513	6,256	84,658	399,629
NEW BRUNSWICK							
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
1939	3	245,928	64	46,356	2,069	29,906	98,010
1940	5	253,917	70	58,245	2,846	38,360	130,539
QUEBEC -							
1936	19	5,504,590	423	313,882	15,967	169,803	505,995
1937	19	5,910,736	532	481,861	25,776	247,074	782,303
1938	19	4,579,040	491	458,737	33,030	235,148	754,016
1939	18	4,307,156	498	503,480	43,686	293,610	937,480
1940	19	3,864,494	570	600,028	49,409	378,710	1,118,127
ONTARIO -							
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
1939	82	8,303,580	884	930,217	49,936	497,052	1,799,650
1940	75	7,618,378	1,038	1,130,262	67,340	626,659	1,814,541
MANITOBA -							
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
1939	5	265,876	63	46,780	390	13,337	65,165
1940	5	257,954	68	56,382	407	19,634	82,865
SASKATCHEWAN-							
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
1939	6	818,889	41	55,774	1,282	11,536	135,956
1940	6	787,034	48	59,864	1,138	18,219	145,471
ALBERTA -							
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
1939	10	2,153,477	263	249,081	1,725	32,077	427,277
1940	12	2,509,514	411	396,777	4,435	44,922	789,499

Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, DOMESTIC CLAY PRODUCTS INDUSTRY, 1936 - 1940 (Concluded)

Province and year	Number of firms	Capital employed	Number of employees	Salaries and wages paid	Cost of process supplies used	Cost of fuel and electricity	Net value of sales
		$		$	$	$	$
BRITISH COLUMBIA -							
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	2297,419
1939	11	912,128	210	200,130	6,457	58,171	306,512
1940	12	950,331	213	232,180	7,804	71,431	441,648
CANADA							
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
1939	141	17,940,742	2,165	2,161,688	108,815	998,683	4,043,738
1940	139	17,146,443	2,557	2,675,251	139,635	1,282,593	4,922,319
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, 1938 - 1940

Month	1938	1939	1940	
			Pit	Plant
January	893	838	93	1,097
February	823	743	89	962
March	941	990	97	1,190
April	1,561	1,358	121	1,618
May	2,567	2,286	312	2,335
June	2,940	2,741	437	2,706
July	2,837	2,879	423	2,768
August	2,658	2,761	417	2,610
September	2,553	2,428	359	2,453
October	2,179	2,047	284	2,246
November	1,837	1,975	199	2,101
December	1,501	1,572	138	2,013

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

Hours	1940	Hours	1940
	No.		No.
30 hours or less ...	65	51 - 54 hours	725
31 - 43 hours	87	55 hours	110
44 hours	184	56 - 64 hours	940
45 - 47 hours	152	65 hours and over	158
48 hours	451	GRAND TOTAL	3,385
49 - 50 hours	513	Total wages paid in that week	$67,621

Table 5 - FUEL AND ELECTRICITY USED, 1939 and 1940

Kind	Unit of measure	1939 Quantity	1939 Cost at works	1940 Quantity	1940 Cost at works
			$		$
Bituminous coal - Canadian ..	short ton	22,023	142,851	28,008	175,126
Imported ..	short ton	77,161	537,821	105,550	696,362
Anthracite coal - From United States ..	short ton	692	4,675	563	4,299
Other	short ton	381	2,367	455	3,052
Lignite coal	short ton	1,483	2,907	2,007	6,098
Coke	short ton	540	4,639	406	3,926
Gasoline	Imp.gal.	69,854	14,825	127,985	32,023
Kerosene or coal oil	Imp.gal.	6,687	1,557	7,217	1,587
Fuel oil	Imp.gal.	45,988	4,717	178,720	11,397
Wood	Cord	34,566	120,767	39,266	144,962
Gas - Natural	M cu. ft.	598,311	24,253	824,878	29,396
Manufactured	M cu. ft.	...	...	18,760	4,003
Electricity purchased	K. W. H.	9,771,973	137,175	11,055,009	163,528
Other fuel	$	...	129	...	334
TOTAL	$	...	998,683	...	1,282,593
Electricity generated for own use	K. W. H.	508,412	...	285,707	...

Table 6 - POWER EQUIPMENT IN THE DOMESTIC CLAY PRODUCTS INDUSTRY, 1940

Description	Ordinarily in use: Number of units	Ordinarily in use: Total horse power (x)	In reserve or idle: Number of units	In reserve or idle: Total horse power (x)
Steam engines and steam turbines ...	48	4,629	4	180
Diesel engines	11	480	...	...
Gasoline, gas and oil engines, other than diesel engines	45	1,202	11	274
Hydraulic turbines or water wheels..	5	300	...	...
Electric motors -				
(a) Operated by purchased power ...	539	13,667	44	2,000
TOTAL	648	20,278	59	2,454
(b) Operated by power generated by the establishment	21	207	...	...
Stationary boilers	51	5,377	12	1,030

(x) According to manufacturers' rating.

Table 7 - PRODUCTION (SALES) OF DOMESTIC CLAY AND CLAY PRODUCTS IN CANADA, 1939-1940

Products	Unit of measure	SALES OR SHIPMENTS 1939 Quantity	1939 $	1940 Quantity	1940 $
Clay - Bentonite	ton	988	3,441	1,469	4,488
Fireclay	ton	3,785	22,504	4,881	30,564
Other clay	ton	9,374	17,732	16,543	27,310
Fireclay blocks and shapes	$	...	95,256	...	85,127
Firebrick	M	2,331	119,346	3,167	165,525
Brick - Soft mud process - Face ...	M	10,927	182,376	15,946	323,634
Common..	M	26,652	372,116	40,395	611,750
Stiff mud process- Face ...	M	45,993	941,696	41,552	903,636
(wire cut) Common..	M	51,114	692,224	52,777	738,416

Table 7 - PRODUCTION (SALES) OF DOMESTIC CLAY AND CLAY PRODUCTS IN CANADA, 1939-1940 (Concluded)

Products	Unit of measure	SALES OR SHIPMENTS 1939 Quantity	1939 $	1940 Quantity	1940 $
Brick - Dry press - Face	M	12,263	242,518	14,932	333,717
Common	M	17,790	236,597	24,870	351,335
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	68	4,601	47	2,477
Sewer brick	M	217	4,506	694	12,222
Paving brick	M	157	6,089	19	819
Structural tile -					
Hollow blocks (including fireproofing and load-bearing tile)	ton	86,120	714,291	105,073	788,478
Roofing tile	no.	148,291	4,964	41,772	1,839
Floor tile (quarries)	...	...	15,233	...	13,631
Drain tile	M	14,361	353,973	10,550	277,551
Sewer pipe (including copings, flue linings, conduits, etc.)	...	...	813,208	...	1,152,603
Pottery, glazed or unglazed (including coarse earthenware, sanitary ware, stoneware, flower pots, and all other pottery)	...	...	282,712	...	474,452
Other products	...	...	25,853	...	44,973
TOTAL	...	...	5,151,236	...	6,344,547

In addition to the clays recorded in the above table, there were 144,152 tons of ordinary clay consumed in Canada during 1940 in the production of Portland cement; the corresponding consumption in 1939 was 105,982 short tons. Also consumed by the Canadian cement industry in 1940 were 18,347 short tons of shale.

Table 8 - PRODUCTION (TOTAL SALES) OF CLAY PRODUCTS FROM DOMESTIC CLAYS, 1913-1940

Year	$	Year	$
1913	9,504,314	1927	11,173,189
1914	6,871,957	1928	12,381,718
1915	3,914,488	1929	13,904,643
1916	4,120,805	1930	10,593,578
1917	4,779,038	1931	7,841,288
1918	4,583,489	1932	3,650,218
1919	7,906,366	1933	2,262,835
1920	10,664,929	1934	2,680,410
1921	8,857,818	1935	3,012,563
1922	11,438,456	1936	3,471,027
1923	10,483,016	1937	4,516,859
1924	9,215,077	1938	4,536,084
1925	9,529,691	1939	5,151,236
1926	10,357,323	1940	6,344,547

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, 1937-1940
(Gross Values)

Province	1937	1938	1939	1940
	$	$	$	$
Nova Scotia	406,846	340,253	339,952	490,543
New Brunswick	123,876	123,625	129,985	171,745
Quebec	1,053,153	1,022,194	1,274,776	1,546,246
Ontario	2,033,845	2,083,496	2,346,638	2,508,540
Manitoba	95,531	105,334	78,892	102,906
Saskatchewan	115,330	118,713	148,774	164,828
Alberta	338,638	377,337	461,079	838,856
British Columbia	349,640	365,132	371,140	520,883
CANADA	4,516,859	4,536,084	5,151,236	6,344,547

Table 10 - PRODUCTION (SALES) OF BUILDING BRICK (a) - DOMINION TOTALS FOR YEARS SPECIFIED, 1905 - 1940

Year	M	$	Average value per M (b)	Year	M	$	Average value per M (b)
			$				$
1905 (x)	523,820	3,933,925	1 7.51	1933 ...	67,700	1,124,517	16.61
1914 ...	551,149	4,769,417	8.65	1934 ...	86,072	1,383,929	16.08
1926 ...	358,348	6,525,565	18.21	1935 ...	100,538	1,555,167	15.47
1927 ...	398,439	6,941,131	17.42	1936 ...	115,732	1,748,772	15.11
1928 ...	421,301	7,281,777	17.28	1937 ...	153,770	2,375,276	15.45
1929 ...	458,630	8,003,358	17.45	1938 ...	148,807	2,341,443	15.73
1930 ...	319,838	5,581,501	17.45	1939 ...	165,024	2,676,634	16.22
1931 ...	237,143	4,289,119	18.09	1940 ...	191,213	3,277,187	17.14
1932 ...	100,477	1,779,334	17.71				

(a) Totals comparable with those in Table 12.
(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.
(x) Quantity not recorded prior to 1905.

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	1935	0.009
1914	0.070	1936	0.010
1929	0.046	1937	0.014
1930	0.031	1938	0.013
1932	0.010	1939	0.015
1933	0.006	1940	0.017
1934	0.008		

Table 12 - PRODUCTION (SALES) OF BUILDING BRICK (a) IN CANADA, BY PROVINCES, 1938 - 1940

Province	1938		1939		1940	
	M	$	M	$	M	$
Nova Scotia	5,102	69,185	4,975	74,489	6,183	108,477
New Brunswick	4,870	77,810	5,371	78,074	6,605	114,832
Quebec	48,249	766,379	59,452	935,051	71,482	1,161,709
Ontario	65,038	1,092,072	71,691	1,270,978	77,106	1,482,273
Manitoba	6,146	95,190	4,099	69,353	5,581	86,423
Saskatchewan	504	8,700	982	16,633	1,230	16,632
Alberta	11,151	108,330	11,907	124,358	13,618	137,839
British Columbia ..	7,747	125,777	6,547	107,698	9,408	169,002
CANADA	148,807	2,341,443	165,024	2,676,634	191,213	3,277,187
Average value per M		$15.73		$16.22		$17.14

(a) Includes fancy and sewer brick.

Table 13 - VALUE (b) OF DRAIN TILE AND SEWER PIPE PRODUCED (SALES) IN CANADA, BY PROVINCES, 1938 - 1940

Province	1938	1939	1940
	$	$	$
Nova Scotia	219,497	202,730	291,511
New Brunswick	9,400	1,588(x)	6,295
Quebec	89,033	103,323	141,498
Ontario	594,993	652,396	582,291
Manitoba	4,196(x)	3,690(x)	4,025(x)
Saskatchewan	...	200(x)	...
Alberta	96,623	114,605	273,692
British Columbia	87,139	88,649	130,842
CANADA	1,100,881	1,167,181	1,430,154

(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	1920	2,111,742	1929	2,726,203
1912	1,242,503	1922	2,173,733	1931	1,837,213
1914	1,470,839	1924	2,003,649	1933	577,287
1916	1,075,674	1926	1,876,794	1935	686,895
1918	1,199,114	1928	2,379,698	1937	1,089,180

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

Table 15 - PRODUCTION (SALES) OF FIRECLAY BLOCKS AND SHAPES AND FIREBRICK, BY PROVINCES, 1940

Province	FIRECLAY(x)		FIRECLAY BLOCKS and SHAPES	FIREBRICK	
	Short tons	$	$	M	$
Nova Scotia	3,042	9,420	559	8	412
New Brunswick	...	...	...	...	...
Saskatchewan	1,054	10,352	64,518	640	34,710
Alberta	...	...	...	65	3,106
British Columbia ..	785	10,792	20,050	2,454	127,297
CANADA	4,881	30,564	85,127	3,167	165,525

(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, 1931 - 1940

Year	FIRECLAY		FIRECLAY BLOCKS and SHAPES	FIREBRICK	
	Short tons	$	$	M	$
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	101,218
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
1939	3,785	22,504	95,256	2,331	119,346
1940	4,881	30,564	85,127	3,167	165,525

NOTE: Firebrick and fireclay blocks and shapes are made also from imported clays; see Table 36.

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

Year	Value	Year	Value
	$		$
1888	27,750	1929	323,194
1898	214,675	1930	294,866
1908	200,541	1931	257,125
1913	53,533	1932	244,861
1918	130,242	1933	202,500
1923	229,547	1934	223,733
1924	238,242	1935	220,711
1925	267,255	1936	218,402
1926	320,135	1937	232,209
1927	307,057	1938	235,890
1928	356,093		

Table 18 - PRODUCTION (SALES) OF POTTERY FROM DOMESTIC CLAYS, BY PROVINCES, 1939 and 1940

Province	1939	1940
	$	$
New Brunswick	30,593(x)	31,628
Ontario	60,692	49,853
Saskatchewan	50	...
Alberta	180,017	381,650
British Columbia	11,360	11,321
CANADA	282,712	474,452

(x) Includes value of sanitaryware in 1939.

Table 19 - PRODUCTION OF STRUCTURAL TILE IN CANADA, BY PROVINCES, 1940

Province	HOLLOW BLOCKS (x)		ROOFING TILE		FLOOR TILE (QUARRIES)
	Short tons	$	No.	$	$
Nova Scotia	7,282	80,102	...	...	...
New Brunswick	2,120	18,307	...	...	...
Quebec	43,244	242,599	...	...	...
Ontario	39,406	335,857	19,872	791	13,447
Manitoba	1,170	10,435	...	...	...
Saskatchewan	1,410	12,698	...	...	...
Alberta	5,437	40,329	...	...	...
British Columbia	5,004	48,151	21,900	1,048	184
CANADA	105,073	788,478	41,772	1,839	13,631

(x) Including fireproofing and load-bearing tile.

Table 20 - PRODUCTION OF STRUCTURAL TILE IN CANADA, 1931 - 1940

Year	HOLLOW BLOCKS(x)		ROOFING TILE		FLOOR TILE (QUARRIES)	
	Short tons	$	No.	$	Sq.ft.	$
1931	105,635	1,046,634	6,935	720	107,499	31,475
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
1939	86,120	714,291	148,291	4,964	90,812	15,233
1940	105,073	788,478	41,772	1,839	...	13,631

(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 - 1940

Year	BENTONITE								KAOLIN(a)	
	Manitoba		Alberta		Br. Columbia		CANADA			
	Tons	$	Tons	$	Tons	$	Tons	$	Tons	$
1928	...	...	...	...	20	100	20	100	5	25
1929	...	...	...	...	...	...	...	...	...	...
1930	...	...	...	...	74	1,396	74	1,396	...	...
1931	...	...	...	...	187	935	187	935	...	...
1932	...	...	...	...	7	176	7	176	...	...
1933	...	...	...	...	55	1,363	55	1,363	...	...
1934	...	...	...	...	63	1,578	63	1,578	48	504
1935	...	...	...	...	41	781	41	781	170	1,520
1936	...	...	...	...	120(b)	180	120(b)	180	...	...
1937	132	1,154	...	...	31	817	163	1,971	...	...
1938	...	...	1,136	3,444	43	215	1,179	3,659	...	...
1939	99	591	889	2,850	...	...	988	3,441	...	...
1940	710	2,023	714	2,240	45	225	1,469	4,488	...	...

(a) All from Quebec.
(b) Partly for experimental purposes.

BENTONITE IN 1940

(Bureau of Mines, Ottawa)

Bentonite, mainly of the highly colloidal, "swelling" type, is widely distributed over large areas of the Prairie Provinces, where it occurs at several horizons in the upper Cretaceous sediments. The more important known deposits are exposed mainly in areas dissected by drainage channels where they show as beds in the slopes bordering valleys, and in the sides or on top of small buttes in typical "bad-land" topography. Thus, many of the chief exposures are found in the Red Deer Valley section of Alberta; over a wide area in southern Saskatchewan; and in the district around Morden, in southern Manitoba. One lower-lying bed is met with as a persistent parting in the No. 1 or main coal seam mined at a number of points in the Drumheller district, Alberta, as well as near Cluny, further to the east. Other exposures exist in the Edmonton region, Alberta, and further west, on the McLeod river, near Edson.

In British Columbia, a deposit of unusual thickness occurs in Tertiary beds near Merritt, and at Princeton.

Until a few years ago, comparatively little interest had been shown in Canadian bentonite and most of the small production had come from the Princeton occurrence in British Columbia, from which a few cars are shipped annually to Vancouver for grinding and local consumption, mainly in gasoline refining. Some six years ago, attention became directed to the Morden deposits and there have since been occasional small shipments, most of which went to the local foundry trade at Winnipeg. In 1940, Pembina Mountain Clays, Limited, was incorporated by Winnipeg interests to undertake more active development, and a small drying and grinding plant was erected at Winnipeg to supply foundry clay. The bentonite of this district has been reported to possess high bleaching power in its natural state, without activation, and the company plans to engage also in the production of clay for the packing house and oil refining industries.

The largest tonnage of bentonite produced in Canada has come from the Drumheller district, in the Red Deer valley, Alberta, where, since 1937, several concerns have been engaged in shipping clay for use in oil well drilling in the Turner Valley field. The larger part of such output has come from the Gordon L. Kidd property at Drumheller, being shipped to a drying and grinding plant at Calgary operated by the Calgary Mud Company, who market their product under the trade name "Altamud". The remainder has been obtained mainly from coal mines operated by the Aetna Coal Company, at East Coulee, and Wayne Coal Producers Association, at Wayne, the material being shipped to a small plant at Longview, in Turner Valley, for processing and sale under the trade name "Viscolite". Shipments from the above concerns in 1940 totalled about 750 tons; total production to date from the area has been about 3,000 tons.

There has as yet been little attempt to exploit occurrences in Saskatchewan, but a small trial shipment was made some years ago from a deposit near Eastend.

Canada exports little or no bentonite. Substantial quantities of activated clay of the Filtrol type are imported from the United States for bleaching purposes in oil refineries and for packing-house products, as well as, possibly, some ground natural bentonite for similar use. There are also considerable imports of American ground bentonite for foundry use and for other minor industrial purposes. Imports of activated clay, for oil refining, in 1940, were valued at $196,467, with no record of quantity.

Outside of the three main above-listed uses, viz., for bleaching, oil-well drilling, and foundry work, bentonite finds a variety of minor industrial applications, most of which call for the colloidal, or "swelling", type. It is employed as an emulsifying agent in asphaltic and resinous compounds; in soaps and detergents, as well as in a variety of cosmetic and pharmaceutical preparations; as a suspending, spreading, and adhesive agent in horticultural sprays and insecticides; as a plasticizing ingredient in ceramic bodies, slips, and glazes, and in plasters; to improve the flow and workability of concrete; and in the clarifying of wines, vinegar, etc. Increasing amounts are being used for water-sealing, in order to stop seepage through or around dam abutments, reservoir walls, and sides or irrigation ditches, and structural foundations. A further growing use is as a coagulant in clarifying the water used in paper mills and sewage disposal plants, as well as to remove turbidity in domestic and industrial water supplies. Research directed to producing a mica substitute from bentonite films has been actively pursued during the last couple of years, but at latest report the product ("Alsifilm") was still in the development stage. Some very fine (micron-size) material is used in paper coatings.

War demands greatly stimulated bentonite sales in the United States for general foundry work in 1939-1940, both for domestic use and export, and producing plants were working at full capacity. Canada probably possesses ample reserves of bentonite of foundry quality to supply domestic requirements, but freight costs to the main consuming centres have proved an obstacle to development in the face of low-priced material from the United States. Wyoming dried and ground 200-mesh clay currently sells for $8 per ton, f.o.b., in bulk, and $10 bagged, whereas similar material from Alberta has been quoted at $38. Selected, air-floated Wyoming clay is priced at $25 per ton, f.c.b. Chicago. Freight rates from Wyoming points to Montreal are about $13.50 per ton. Activated bentonite has sold for $65 to $75 per ton, in carload lots, delivered eastern Canadian points.

Table 22 - FULLER'S EARTH USED IN CANADA IN THE MANUFACTURE OF SOAPS AND WASHING COMPOUNDS AND IN THE PETROLEUM PRODUCTS INDUSTRY, 1930-1940

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
1938	19,687,467	281,668	1,195,208	19,575
1939	19,814,473	304,214	1,586,163	30,924
1940	23,828,660	406,185	1,651,471	40,695

(x) Includes all clays.

Table 23 - CHINA CLAY (KAOLIN) USED IN THE MANUFACTURE OF PAPER IN CANADA, 1930-1939

Year	Tons	Value	Year	Tons	Value
		$			$
1930	13,024	218,423	1935	33,766	422,584
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	1939	32,769	430,092

Table 24 - CLAYS AND EARTHS USED IN CANADIAN RUBBER INDUSTRY, 1933-1939

Year	Tons	Value	Year	Tons	Value
		$			$
1933	1,391	32,361	1937	3,614	79,300
1934	2,391	54,368	1938	2,942	81,035
1935	2,639	63,553	1939	3,438	80,745
1936	3,017	70,709			

Table 25 - FIREBRICK AND FIRECLAY USED IN THE MANUFACTURE OF IRON AND STEEL AND THEIR PRODUCTS IN CANADA, 1931-1939

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	123,632	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)
1938	(a)	(a)	$ 838,012(c)	(a)	(a)
1939	(a)	(a)	$ 939,495(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 1940 are not yet complete.

Table 26 - FULLER'S AND INFUSORIAL EARTH USED IN SPECIFIED CANADIAN INDUSTRIES, 1932-1939

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(x)	9,349
1938	4,908,597(c)	101,473	190,253	9,063
1939	4,819,811(c)	105,711	207,105(b)	10,166

(a) Not recorded. (b) Fuller's earth. (c) Infusorial earth.
(x) Includes other earth.
NOTE: In addition to the consumption recorded, 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	1938	1939	1940
	$	$	$	$	$
Residential.	128,901,300	28,692,600	55,025,600	67,451,200	67,669,900
Business ...	190,161,700	39,399,200	65,327,100	54,945,200	104,593,500
Industrial..	62,968,800	7,820,400	15,982,200	22,753,000	121,760,800
Engineering.	194,620,000	56,760,200	52,943,000	42,029,100	51,979,600
TOTAL ...	576,651,800	132,872,400	187,277,900	187,178,500	346,009,800

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

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, bulk, $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, $10.25 to $10.75. Insecticide clay, $11.50 to $16.50. Imported English, per long ton, C and F. American ports: lump, $26 to $28 in bulk; air-floated $40 to $60 nominal.

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. June, 1941 - prices nominal.

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

(a) Engineering and Mining Journal's "Metal and Mineral Markets" - New York, June, 1941.
(b) "Canadian Chemistry and Metallurgy" - Toronto, November, 1939.
(c) Engineering and Mining Journal's "Metal and Mineral Markets" - New York, August, 1940.

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, etc., MADE FROM DOMESTIC CLAYS, 1940

Name of Firm	Head Office Address	Plant Location
NOVA SCOTIA -		
Brooks, Stephen, & Sons (a)	Box 159, New Glasgow	New Glasgow
MacIntyre, A. D. (a)	Sydney	Sydney
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
NEW BRUNSWICK -		
Ryan, M., & Son, Ltd.	Fredericton	Fredericton
Shaw, L. E. Ltd. (a)	8 Prince St., Halifax, N.S.	Chipman
Tondreau, Adelard	Bathurst	Bathurst
QUEBEC -		
Ascot Tile & Brick Co. Ltd.	Ascot Corner	Richmond Co.
Begin, Olivier	R. R. 1, Petite Riviere	Petite Riviere
Canada China Clay Ltd.	St. Remi d'Amherst	St. Remi d'Amherst
Castonguay, Hubert	Deschaillons	Deschaillons
Champlain Brick Ltd.	323 Blvd. Charest, Quebec	Beauport-Est
Citadel Brick Ltd.	14 St. Joseph St., Quebec	L'Islet Station Boischatel
Cote, Albert	Victoriaville	Victoriaville
Crite, Freddy	Box 2246, St. Tite	St. Tite
Desmarais, S. E., & Co.	Richmond	Richmond
Duquette, Isidore	Box 626, East Angus	Westbury
Gaulin, E.	Princeville	Princeville
Hodgins, David T.	Shawville	Shawville
LaPrairie Co. Inc.	660 St. Catherine St. W., Montreal	LaPrairie and Delson
Lotbiniere Brick Co.	Deschaillons	Deschaillons
Montreal Terra Cotta Ltd.	1010 St. Catherine St. W., Montreal	Lakeside
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.(a)	St. Johns	St. Johns
Tremblay, Jules R.	272 rue Racine, Chicoutimi	Chicoutimi
ONTARIO -		
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 Pressed Brick Co. Ltd.	Kenilworth Ave. S., Hamilton	Hamilton
Central Tile Brick Corp. Ltd.	Box 25, Tilbury	Kent Co.
Chapman Bros.	145 Dawes Road, Toronto	E. York Tp.
Construction Materials Ltd.	Drawer 70, New Toronto	Etobicoke Tp.
Cooksville Co. Ltd.	46 Bloor St. W., Toronto	Cooksville
Cornhill, James & Sons Ltd.	Stanley Ave., Chatham	Chatham
Coultis, Geo. & Son	Thedford	Lambton County
Cowell, Geo. Wesley	Box 361, Tilsonburg	Oxford County

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, ETC., MADE FROM DOMESTIC CLAYS, 1940 (Continued)

Name of Firm	Head Office Address	Plant Location
ONTARIO (Continued) -		
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, R. R. 4	W. Nissouri Tp.
Dochart Brick, Tile & Terra Cotta Works	Arnprior	Arnprior
Donaldson, Thos. Geo.	R. R. 1, Greenock	Culross Tp.
Douglas, John R.	Wilkesport	Lambton County
Elliott, Chas.	Bluevale	Huron County
Elliott, Jas., Jr.	519 Wellington St. W., Sault Ste. Marie	Korah Tp.
Elliott, Wm.	Glenannan	Bruce County
Ferguson, A. W.	95 Rectory St., London	London
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
Gomell Brick & Tile Works	Powassan	S. Himsworth Tp.
Greenwood Brick Co.	348 Greenwood Ave., Toronto	Toronto
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, T.	First Ave., St. Thomas	St. Thomas
Hodder, Mrs. J. H., & Sons	Dutton	Elgin County
Howlett, Fred W., & Sons, Ltd.	Box 849, Petrolia	Petrolia
Huntsville Brick Works	Box 308, Huntsville	Muskoka
Interprovincial Brick Co. Ltd.	46 Bloor St. W., Toronto	Chinquacousy Tp. Nassagaweya Tp.
Jackson, W. B., Brick & Tile	Brantford	Brantford
Jamieson Lime Co.	Renfrew	Renfrew
Janes, D. A.	Mt. Brydges	Middlesex Co.
Jasperson Brick & Tile Co.	Kingsville	Coatsworth
Jervis, W. J.	R. R. 3, Dorchester	N. Dorchester
Kerr, C., Estate of	R. R. 4, Goderich	Huron County
Kerr, Fred	Crediton	Crediton
Koebel Bros.	St. Clements	St. Clements
Lindsay, Earl & Sons	R. R. 2, Wallaceburg	Kent County
McComb, Chester	R. R. 2, London	Middlesex Co.
McCormick, Thos. L.	R. R. 5, Watford	Lambton County
McFarlane, W. J.	Forest	Lambton County
McFarren, F. B. Ltd.	38 Toronto St., Toronto	Streetsville
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	R. R. 3, Napanee	Lennox County

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, etc., MADE FROM DOMESTIC CLAYS, 1940 (Concluded)

Name of Firm	Head Office Address	Plant Location
ONTARIO (Concluded) -		
National Fireproofing Co. of Canada, Ltd.	96 Bloor St. W., Toronto 5	Wentworth Co.
National Sewer Pipe Co. Ltd.	Aldershot	Hamilton Swansea
Northern Brick & Clay Products	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.	Box 131, Billings Bridge	Carleton County
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, H. W. & Son	390 Dawes Road, Coleman P.O. Toronto	E. York Tp.
Richardson, J. & Son	Kerwood	Kerwood
Rollins, D. W.	R. R. 4, Belleville	Thurlow Tp.
Seegmiller Brick and Tile Company	525 Wendell Ave., Kitchener	Kitchener
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	R. R. 4, Atwood	S. Grey Tp.
Toronto Brick Co. Ltd.	897 Bay St., Toronto	Todmorden, Toronto
Wagstaff Brick & Tile Co.	32 Simcoe St., Lindsay	Victoria County
Wallace, R., and Son	92 First Ave. E., North Bay	Widdifield Tp.
Wein, Aaron	Crediton	Huron County
Weitzel Bros.	R. R. 1, Tavistock	Zora Tp.
Wright, Geo., & Sons	Box 56, Comber	Comber
MANITOBA -		
Alsip Brick, Tile & Lumber Co. Ltd.	537 Portage Ave., Winnipeg	Winnipeg
O'Day & Spencer (b)	R. R. 1, Morden	Morden
Snyder Brick Yards Ltd.	Portage la Prairie	Portage la Prairie
Wardrop, D. M.	Whitemouth	Whitemouth
Western Clay Products Ltd.	507 Somerset Blk., Winnipeg	Edrans
SASKATCHEWAN -		
Alberta Clay Products Co. Ltd.(a)	Medicine Hat, Alberta	Willows, Ravenscrag 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, Knollys and Willows
Midland Clay Co.	Willow Bunch	Willow Bunch
Medalta Potteries Ltd.	620 .. 3rd St. W., Calgary, Alberta	Eastend and Willows

LIST OF OPERATORS SHIPPING BRICK, TILE, SEWER PIPE, etc., MADE FROM DOMESTIC CLAYS, 1940 (Concluded)

Name of Firm	Head Office Address	Plant Location
ALBERTA -		
Aetna Coal Co. (b)	East Coulee	Tp.28 Rge.19 W4th
Acme Brick Co. Ltd.	125 Alberta Block, Edmonton	Cannell
Alberta Clay Products Co. Ltd.	Cor. Bridge & Clay Sts., Medicine Hat	Medicine Hat, Dunmore
Grande Prairie Brick Yard	Box 1722, Grande Prairie	Grande Prairie
Gunderson Brick & Coal Co. Ltd.	Redcliff	Redcliff
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
BRITISH COLUMBIA -		
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 Road
Fairey & Company (a)	661 Taylor St., Vancouver	Williams Lake
Glover, Francis (b)	Princeton	Princeton
Gorse, Percy A.	Salmon Arm	Enderby
Haug, Wm., & Son	Box 220, Kelowna	Kelowna
McBride, T. G.	1051 Main St., Vancouver	Gabriola Island
Port Haney Brick Co. Ltd.	846 Howe St., Vancouver	Haney
Richmond, Geo. W., & Co. (a)	3239 W. King Edward Ave., Vancouver	Kilgard
Vancouver Brick & Tile Ltd.	Ft. Columbia Ave., Vancouver	Sullivan

(a) Includes Production of refractories. (b) Produces bentonite.

CANADIAN PRODUCERS OF STONEWARE AND POTTERY FROM DOMESTIC CLAYS, 1940

NEW BRUNSWICK -		
Deichmann, Kjeld and Erica	Moss Glen	Moss Glen and Middle Musquodoboit, N.S.
The Foley Pottery Ltd. (a)	Saint John	Saint John, Middle Musquodoboit, N.S.
Mowat, Miss G. Helen	St. Andrew's	St. Andrew's
ONTARIO -		
The Foster Pottery Co.	Main St. W., Hamilton	Hamilton
ALBERTA -		
Alberta Clay Products Co.	Medicine Hat	Medicine Hat
Medalta Potteries Ltd.	336 .. 7th Ave. W., Calgary	Medicine Hat
Medicine Hat Potteries	Box 672, Medicine Hat	Medicine Hat
BRITISH COLUMBIA -		
Baker Brick & Tile Co. Ltd.	3191 Douglas St., Victoria	Victoria
B. C. Clay Products Co.	3439 Euclid Ave., Vancouver	Vancouver

II. PRODUCTS FROM IMPORTED CLAYS, 1940

This industry covers the operations of Canadian plants which were occupied chiefly in making ceramic products from imported clays. Products made in these plants during 1940 included high tension insulators, vitreous china sanitary ware, china dinnerware, firebrick, sewer pipe, floor and wall tile, refractory cements, electrical porcelains, etc.

Twenty-one plants reported in this group for 1940 and their output was valued at $4,503,791, against last year's total of $2,971,979 and the 1938 figure of $3,048,888. Capital employed amounted to $5,359,190. The average number of workers was 1,381 and payments for salaries and wages totalled $1,573,610. Fuel and electricity cost $302,773 and materials for use in manufacturing processes cost $1,084,669.

Table 28 - PRINCIPAL STATISTICS OF THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940

		1939	1940
Number of plants		20	21
Capital employed	$	4,661,821	5,359,190
Average number of employees		1,097	1,381
Salaries and wages	$	1,150,712	1,573,610
Cost of fuel and electricity	$	237,718	302,773
Cost of materials at works	$	792,767	1,084,669
Gross selling value of products at works	$	2,971,979	4,503,791

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 29 - CAPITAL EMPLOYED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, BY PROVINCES, 1939 and 1940

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 receivable, etc.)	TOTAL CAPITAL EMPLOYED
	$	$	$	$
1939				
Ontario	1,664,201	662,960	670,100	2,997,261
Quebec, Saskatchewan	1,127,212	243,679	293,669	1,664,560
CANADA	2,791,413	906,639	963,769	4,661,821
1940				
Ontario	1,864,676	769,083	954,180	3,587,939
Quebec, Saskatchewan	1,128,358	228,196	414,697	1,771,251
CANADA	2,993,034	997,279	1,368,877	5,359,190

Table 30 - EMPLOYEES, SALARIES AND WAGES IN THE IMPORTED CLAY PRODUCTS INDUSTRY, BY PROVINCES, 1939 and 1940

Provinces	Average Number of Employees					Salaries	Wages	TOTAL SALARIES and WAGES
	On Salaries		On Wages		TOTAL			
	Male	Female	Male	Female				
						$	$	$
1939								
Ontario	84	36	577	160	857	225,173	652,765	877,938
Quebec .....) Saskatchewan ..)	31	7	193	9	240	70,817	201,957	272,774
CANADA ...	115	43	770	169	1,097	295,990	854,722	1,150,712
1940								
Ontario	94	45	752	255	1,146	287,302	954,403	1,241,705
Quebec .....) Saskatchewan ..)	33	8	186	8	235	74,668	257,237	331,905
CANADA ...	127	53	938	263	1,381	361,970	1,211,640	1,573,610

Table 31 - WAGE-EARNERS, BY MONTHS, IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940 (On the last working day of each month)

Month	1939			1940		
	Male	Female	TOTAL	Male	Female	TOTAL
January	767	149	916	802	248	1,050
February	745	147	892	832	247	1,079
March	730	151	881	843	251	1,094
April	754	150	904	868	236	1,104
May	757	164	921	883	256	1,139
June	762	168	930	902	234	1,136
July	749	164	913	930	233	1,163
August	752	169	921	989	271	1,260
September	783	181	964	1,047	280	1,327
October	810	188	998	1,062	299	1,361
November	838	197	1,035	1,037	301	1,338
December	830	204	1,034	1,041	301	1,342
AVERAGE ...	770	169	939	938	263	1,201

Table 32 - FUEL AND ELECTRICITY USED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940

Kind	Unit of measure	1939		1940	
		Quantity	Cost at works	Quantity	Cost at works
			$		$
Coal, anthracite	short ton	7	109	14	194
Coal, bituminous - Canadian	short ton	574	3,287	724	4,352
Imported	short ton	18,291	126,037	23,092	167,339
Coke	short ton	1,040	8,320	1,248	9,984
Gasoline	Imp.gal.	7,692	1,770	12,604	3,286
Kerosene	Imp.gal.	130	17	2,162	273
Fuel oil	Imp.gal.	543,320	37,076	617,960	45,713
Wood	cord	38	224	45	166
Gas - Manufactured	M cu. ft.	341	305	728	638
Natural	M cu. ft.	45,194	36,233	52,671	41,384
Electricity purchased.....	K.W.H.	1,785,240	24,340	2,648,524	29,444
TOTAL	...	...	237,718	...	302,773
Electricity generated for own use	K.W.H.	660,800	...	770,333	...

Table 33 - POWER EQUIPMENT IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940

	1939		1940	
	Number of units	Total rated horse power	Number of units	Total rated horse power
Steam engines	3	465	3	465
Gasoline, gas and oil engines	1	40	...	...
Total Primary Equipment	4	505	3	465
Electric motors run by purchased power	462	2,135	555	2,253
TOTAL	466	2,640	558	2,718
Electric motors run by above primary units	33	365	34	366
Stationary boilers	15	1,128	6	438

Table 34 - MATERIALS USED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940

Material	1939		1940	
	Short tons	Total cost at works	Short tons	Total cost at works
		$		$
Imported clays - Ball clay	2,970	48,994	3,348	58,300
China clay	2,973	51,427	3,332	72,182
Fireclay	21,721	127,663	34,153	203,744
Saggar clay	453	4,909	904	12,776
Other imported clays	1,125	18,000	4,782	16,151
Canadian clays - Fireclay	192	1,722	2	20
Other clays	95	645	100	1,900
Feldspar	2,021	38,840	3,305	70,788
Silica and ground quartz	1,968	27,161	3,426	53,690
Talc	178	2,502	511	7,635
Other glazing materials	...	25,796	...	35,773
Insulator hardware	...	206,221	...	238,076
Shipping containers and packing materials	...	100,155	...	105,349
All other materials	...	138,732	...	208,285
TOTAL	...	732,767	...	1,084,669

Table 35 - PRODUCTS MADE IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1939 and 1940

Products	1939	1940
	Gross selling value at works	Gross selling value at works
	$	$
Firebrick and stove linings - Rigid	403,893	534,943
Plastic	83,095	146,904
High temperature cements	36,280	87,418
High tension porcelain insulators, china sanitary ware, clay sewer pipe, floor and wall tile, pottery, china tableware, etc. (Separate figures cannot be shown for these items as there were only one or two producers in each case)	2,448,711	3,734,526
TOTAL	2,971,979	4,503,791

NOTE: Clay firebrick, floor tile, sewer pipe and pottery are also made in Canada from domestic clays (See tables 7 and 36). High temperature cements and refractory bricks are made also by concerns in other industries. (See Tables 36 and 37).

Table 36 - TOTAL PRODUCTION IN CANADA OF REFRACTORY SHAPES, 1929 - 1940

Year	From domestic clays					Other (x)	TOTAL
	Fireclay blocks and shapes	Firebrick		Silica brick		Rigid fire-brick and stove linings	
	$	M	$	M	$	$	$
1929 ...	130,411	5,196	251,043	3,951	173,581	362,360	917,395
1930 ...	147,309	3,789	177,608	2,418	97,379	298,945	721,241
1931 ...	83,039	2,248	107,597	900	35,746	280,588	506,970
1932 ...	75,209	1,580	71,757	93	4,304	212,838	364,108
1933 ...	80,625	1,547	73,226	636	23,185	220,484	397,520
1934 ...	62,388	2,109	101,219	2,528	85,945	275,472	525,024
1935 ...	71,344	1,817	90,149	2,461	96,194	314,825	572,512
1936 ...	65,171	2,548	118,923	2,393	97,285	330,602	611,981
1937 ...	75,431	2,950	142,827	3,744	181,126	441,341	840,725
1938 ...	73,512	2,213	113,581	1,788	100,403	448,494	735,990
1939 ...	95,256	2,331	119,346	2,493	124,807	640,376	979,785
1940 ...	85,127	3,167	165,525	3,438	182,786	837,192	1,270,630

(x) Includes shapes made from imported clays, from magnesite, etc.

Table 37 - TOTAL PRODUCTION IN CANADA OF REFRACTORY CEMENTS AND PLASTICS, 1932-1940

Year	Short tons	Selling value at works
		$
1932	...	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
1939	5,094	271,106
1940	4,707	521,535

LIST OF FIRMS INCLUDED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1940

Names of Firms and Location of Plants	Products Made
Canada Firebrick Company Ltd., 4741 St. Ambroise St., Montreal, P.Q.	Firebrick
Canada Vitrified Products Limited, 675 Talbot St. E., 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

LIST OF FIRMS INCLUDED IN THE IMPORTED CLAY PRODUCTS INDUSTRY, 1940 (Concluded)

Names of Firms and Location of Plants	Products Made
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., Moose Jaw, Sask.	Firebrick; high temperature cements
Frontenac Floor and Wall Tile Co. Ltd., Kingston, Ont.	Floor and wall tile; ground feldspar; porcelain balls, etc.
Georgetown Clay Products, Ltd., Georgetown, Ont.	Firebrick
Green, A. P., Fire Brick Co. Ltd., Leaside, Ont.	Plastic firebrick; high temperature cements; castable refractories
Hamilton Potteries Limited, 100 Locke St. S., Hamilton, Ont.	Porcelain sockets, plugs, etc.; firebrick, porcelain dies
Maple Leaf Potteries, 601 Merton St., Toronto, Ont.	Dinnerware; flower pots
McMaster Pottery, Dundas, Ont.	Sanitaryware
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 (Estate of), 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.	Sewer pipes; firebrick
Walker-Hind-Sutherland Refractories Ltd., 309 St. Ferdinand St., Montreal, P.Q.	Refractory cements; firebrick.

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