CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

THE GYPSUM INDUSTRY IN CANADA 1934

(including production data for first six months 1935)

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

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GYPSUM, 1934.

A distinct improvement in the Canadian gypsum industry was realized in 1934, according to information contained in a bulletin issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa. The 1934 sales at 461,237 tons represents a 21.3 per cent increase over the shipments of 380,234 tons in 1933; the value of the 1934 production totalled $863,776 as compared with $663,312 for the preceding year or an increase of 30.2 per cent. The 1934 output, as in 1933, came from the provinces of Nova Scotia, New Brunswick, Ontario, Manitoba and British Columbia and increases in tonnage and value of production were recorded for each of these provinces. The quantity of gypsum mined or quarried in 1934 amounted to 493,295 tons as against 370,691 tons in 1933; the quantity of the mineral calcined in "quarry" plants totalled 74,356 tons as compared with 44,086 tons in the preceding year.

Gypsum deposits have been known in Nova Scotia since the time of the earliest settlers and shipments of the crude rock were made from the Windsor district to the United States a number of years before the Revolutionary War. After the war of 1812 these shipments assumed larger proportions and have been increasing almost ever since. The first recorded production in Ontario was in 1822 when a small amount was mined and crushed for fertilizer. During the first half of the nineteenth centry the industry in Canada had a varied career, Nova Scotia and Ontario being the principal producers. Of the first discovery of gypsum in New Brunswick very little is known, evidence of very early work having been carried on in the district adjacent to the town of Hillsborough. The deposits in Manitoba were first operated in 1901 and have produced extensively ever since. The first production of gypsum in British Columbia was made in 1911 but it was not until 1926 that the industry was put on a sound basis in this province. Extensive deposits of gypsum are known in Northern Ontario and these deposits form a potential reserve which in years to come may be called upon to supply material to the northern parts of Ontario and Quebec. The deposits in Northern Alberta, although situated at a distance from markets are of good grade. The use of anhydrite in England for the manufacture of sulphuric acid, ammonium sulphate and special plasters is rapidly increasing. At the present time Canadian anhydrite is exported principally as a fertilizer for the peanut crop.

The possibilities for expansion of the gypsum industry in Canada are considered bright. The increasing tendency in construction to make buildings as nearly fireproof as possible has greatly increased the demand for gypsum products; special insulating plasters and other products prepared from gypsum have been developed and are finding a ready market. In the field of sound-deadening products, the market for accoustic plasters prepared from gypsum is being rapidly extended.(1)

(1) Department of Mines, Ottawa.

"One of the more important developments during the past year has been the perfecting of a process whereby grinding and calcining of gypsum is effected in one operation with a greatly reduced equipment outlay ... products introduced during 1933 include a wall board with a new type of wood - grained surface, a perforated plaster-board lath, and a sound-absorbent gypsum board - a light-weight cellular wall board, weighing only 1,250 pounds per 1,000 square feet, is now manufactured; the process involves the use of hydrogen peroxide and a catalyzer mixed with gypsum plaster. Total decomposition of the peroxide is effected, the gas evolved creating a cellular condition that becomes permanent when the plaster sets. Gypsum-coated sawdust has been tried in the West as an aggregate ingredient in concrete used for fireproofing. Fire tests of building columns protected by gypsum have demonstrated the value of a sanded gypsum-plaster finish through a greater fire resistance proportionate to the thickness than for other block coverings." (2)

NOVA SCOTIA - At Cheticamp, Inverness county, the Atlantic Gypsum Products Limited conducted extensive gypsum mining operations during 1934; the number 1 quarry was enlarged by connecting the two open faces into one long face of gypsum; the quarries here are connected by rail with the crushing and storage plant at Cheticamp, a conveyor belt running in a tunnel beneath the stock pile conveys the crushed material to the loading pier where it is discharged directly into the hold of the ship. The company also conducts operations at Dingwall, Victoria county; gypsum of two grades are made here. Number 1 grade is worked by hand selection and the balance or Number 2 grade is handled by a half cubic yard power shovel, a conveyor belt having a capacity of 300 tons per hour is utilized for loading ships up to 3,000 tons capacity. At Walton, Hants county, the Atlantic Gypsum Products Limited recently started a new quarry at the head of the old "North Quarry" and a 35 foot face opened up for about 100 feet, the standard gypsum of this quarry is shipped from Walton to New York where it is calcined for use as plaster. The anhydrite goes to Norfolk, Va., where it is used largely as a fertilizer and moisture retainer around peanut plants.

The Connecticut Adamant Plaster Company operates a quarry at Cheverie, Hants county, where a face 18 feet high has been opened up for about 500 feet; overburden is stripped by gasoline shovel. Shipments in 1934 were based on demand; a narrow gauge railway is used to transport the gypsum from the quarry to the pier for shipment to New Haven, Connecticut.

The largest gypsum operations in the province are conducted by the Canadian Gypsum Company at Wentworth, Hants county. The company is operating two main quarries called "The Cables" and "The Meadow" respectively. The "Cables" quarry is the chief producer, overburden here is removed by steam shovel and holes about 60 feet in depth drilled with well-drills; after blasting the displaced mineral is loaded by power shovel into light railway cars for transportation to the crushing plant at the shipping wharf.

The North American Gypsum Company operates a quarry near the town of Baddeck and a narrow gauge railway about a mile long connects the deposit with the crushing and storage plant located on their pier at Baddeck Bay. The quarry face was extended during the year and a programme of diamond drilling was carried out on the property to determine the thickness of the deposit and also the contour of the anhydrite.

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(2) U. S. Bureau of Mines - 1934 Minerals Year Book.

Near the entrance of the Mabou Harbour is situated the quarry, crushing, storage and loading plant of the Nova Scotia Coal and Gypsum Company. A quarry face 30 feet in height is worked, tunneling is employed where the overburden is heavy; the property was inactive in 1934.

The Windsor Gypsum Company operates the quarry known as the "Mosher" located near Newport Station. The overburden is removed by steam shovel and recent work has been on a face 350 feet long and 40 feet high; broken material is transported by rail to the wharf at Windsor where ocean shipment is made by steamer or sailing vessel to Newburg, New York.

The manufacturing plant of the Windsor Plaster Company is located at Windsor, Hants county, and the company operates a quarry near the village of Brooklyn. At Windsor the ground plaster is calcined in kettles; hard wall and selenite plasters are marketed by the company.

NEW BRUNSWICK - The Canadian Gypsum Company operating at Hillsborough, Albert county, possesses extensive deposits of excellent gypsum from which are manufactured various gypsum products at their plant at Hillsborough. The company quarried a considerably greater tonnage of rock in 1934 than in 1933 and a somewhat larger output of gypsum products was realized at the Hillsborough plant.

Near Petitcodiac Station, F. M. Thompson quarried and shipped a high grade while close grained gypsum, the mineral from this quarry, was shipped to Montreal for manufacture.

ONTARIO - The output of gypsum in Ontario rose from 24,460 tons in 1933 to 33,234 tons in 1934 and came from two companies - Gypsum, Lime and Alabastine, Canada, Limited, with a plant at Caledonia, and the Canadian Gypsum Company Limited at Hagersville. The increase of about 26 per cent in quantity coincides with the general revival in the building industry of Ontario. The Canadian Gypsum Company operates on a gypsum seam at a depth of about 90 feet through a three compartment shaft; the modern plant of this company includes a continuous rotary calcining kiln. The Gypsum, Lime and Alabastine, Canada, Limited, manufacturing an extensive line of plasters, insulating materials, acoustic products, etc., announced that the new plant erected at Rochester, England, by Gyproc Products Limited, in which their company has a forty per cent interest, was completed and in production in June, 1934; satisfactory progress has been made and the plant is now working to capacity. Gypsum products plants are also operated by the Canadian company at Montreal and Calgary.

MANITOBA - The tonnage of gypsum sales in Manitoba increased from 6,830 in 1933 to 9,657 in 1934. Two companies operate in this province - the Western Gypsum Products Limited with a quarry at Amaranth and mill in Winnipeg, and Gypsum, Lime and Alabastine, Canada, Limited, with quarries near Gypsumville. This latter company also ships material to Winnipeg for further processing. The plants of both companies were active throughout 1934.

BRITISH COLUMBIA - The only gypsum mining operations of any magnitude in British Columbia were those conducted by Gypsum, Lime and Alabastine, Canada, Limited. The quarry of this company is located at Falkland and the crude gypsum is shipped to Port Mann where it is manufactured into plaster of Paris, plaster boarding, wall board, gypsum wall-block, etc. In addition to the Falkland output a relatively small shipment of gypsite was reported from an independent producer.

DEFINITION OF SPECIFIED GYPSUM PRODUCTS. (3)

When gypsum is calcined at a red heat, or over, and certain substances (usually borax or alum) added and then heated again, the resultant plaster is known as hard finish plaster. It is slower in setting than ordinary plaster but attains a greater degree of hardness. Several different methods have been employed to produce these plasters and the products so obtained are known under such names as Keene's cement, Parian cement, Martin's cement, etc.

The manufacture of Insulex is comparatively simple. It consists essentially of the addition of certain chemicals to the calcined gypsum at the plant, which, when water is added to the mixture on the job where it is employed, react together with the liberation of a gas, expanding the mass to many times its normal bulk. Dry insulex is a light, fluffy, flaky gypsum insulation. It can be placed direct from its containers into places to be insulated: it is both fireproof and vermin proof.

Acoustic plasters consist essentially of gypsum plaster to which has been added certain chemicals which develop gas cells during the period of hydration and application of the plaster, and during the initial set. Porous volcanic rock sands are added to these plasters and greatly assist the artificially formed pores in absorbing sound waves.

Gypsum wall board is essentially composed of a layer of gypsum plaster enclosed between two sheets of fibrous material somewhat resembling a high grade blotting paper though not so absorbent. Ingredients used in the manufacture of gypsum wall board consist of calcined plaster to which has been added some material such as sawdust, starch, etc., and water, the core of the plaster being enclosed between two sheets of the fibrous paper material.

In the manufacture of gypsum blocks the material used is calcined plaster and some filler material such as shavings or starch; the materials used in the manufacture of gypsum roofing slabs are the same as for tiles or blocks, with the addition of steel reinforcing rods.

PRINCIPAL STATISTICS OF THE GYPSUM MINING INDUSTRY IN CANADA, 1932, 1933 and 1934.

		1932	1933	1934
Number of firms		11	10	8
Capital employed	$	8,054,148	8,769,564	7,352,562
Number of employees - On salary		46	25	39
On wages		432	390	389
Total		478	415	428
Salaries and wages - Salaries	$	90,418	48,942	59,534
Wages	$	278,066	214,337	265,197
Total	$	368,484	263,279	324,731
Cost of fuel and electricity	$	122,926	91,518	118,560
Selling value of products	$	1,080,379	675,822	863,776

(3) Excerpts from Report 714, Department of Mines, Ottawa.

FUEL AND ELECTRICITY USED IN THE GYPSUM MINING INDUSTRY, 1933 and 1934.

	Unit of measure	1933 Quantity	1933 Cost at works	1934 Quantity	1934 Cost at works
			$		$
Coal, bituminous - Imported	short tons	...	...	878	5,486
Canadian	short tons	4,062	20,727	4,223	23,801
Coal, lignite - Canadian	short tons	...	...	687	2,404
Coke	short tons	148	1,212	180	1,863
Gasoline	Imp. gal.	44,697	11,243	59,979	19,822
Kerosene	Imp. gal.	224	49	400	95
Fuel oil and diesel oil	Imp. gal.	79,716	3,983	76,252	5,471
Wood	cords	918	2,891	537	2,148
Gas - Manufactured	M cu.ft.	...	...	192	1,098
Natural	M cu.ft.	10,763	4,305	17,197	6,883
Other fuel	xx	...	...	...	59
Electricity purchased	K.W.H.	2,725,415	47,108	2,912,953	49,430
TOTAL	xx	...	91,518	...	118,560

NUMBER OF WAGE-EARNERS ON PAYROLL OR TIME RECORD ON THE 15th OF EACH MONTH OR NEAREST REPRESENTATIVE DATE, 1933 and 1934.

Month	1933 MINE	1933 MILL	1934 MINE	1934 MILL
January	89	101	110	92
February	86	92	78	124
March	81	86	110	154
April	164	116	116	134
May	224	120	270	153
June	279	171	318	180
July	393	204	353	150
August	495	180	358	181
September	345	150	388	184
October	367	173	326	147
November	333	119	245	149
December	209	112	213	112

The statistics as thus given for Canada cover the primary production of gypsum; these include data for gypsum quarries and for calcining and plaster works when operated in connection with the quarries. In addition there are the secondary or manufacturing plants which include the works making wallboard, blocks, tile, etc.; some of these works purchase crude gypsum from the primary producers and calcine it before using it to manufacture the gypsum products.

PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF GYPSUM, 1933 and 1934.

	1933 Quantity	1933 Value	1934 Quantity	1934 Value
	Tons	$	Tons	$
SHIPMENTS BY GRADES -				
Crude (1) - Lump or mine run	36,439	43,002	33,165	41,475
Crushed	298,579	329,419	369,696	473,558
Fine ground	1,030	6,067	652	3,494
Calcined gypsum (2)	46,688	297,334	57,724	345,249
TOTAL	382,736	675,822	461,237	863,776

PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF GYPSUM, 1933 and 1934. (concluded)

	1933		1934	
	Quantity	Value	Quantity	Value
	Tons	$	Tons	$
SHIPMENTS BY PROVINCES -				
Nova Scotia	315,948	363,528	378,287	488,044
New Brunswick	30,391	88,500	30,398	104,709
Ontario	24,460	112,319	33,234	141,389
Manitoba	6,830	65,471	9,657	81,533
British Columbia	5,107	46,004	9,661	48,081
TOTAL	382,736	675,822	461,237	863,776
Total gypsum mined and quarried	370,691	...	493,295	...
Total gypsum calcined (2)	44,086	...	74,356	...
IMPORTS -				
Gypsum, crude (sulphate of lime)	18	524	18	320
Gypsum ground, not calcined	136	4,251	173	4,938
Plaster of Paris or gypsum calcined and prepared wall plaster	615	16,745	551	15,890
TOTAL	769	21,520	742	21,148
EXPORTS -				
Gypsum or plaster, crude	287,305	344,085	354,978	413,961
Plaster of Paris, ground, and prepared wall plaster	634	13,999	712	16,078
TOTAL	287,939	358,084	355,690	430,039

PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF GYPSUM, JANUARY 1 to JUNE 30, 1934 and 1935

	1934		1935	
	Quantity	Value	Quantity	Value
	Tons	$	Tons	$
PRODUCTION -				
Crude (1) - Lump or mine run	81,715	83,905	31,396	35,715
Crushed	48,078	59,388	113,123	131,011
Fine ground	608	3,640	174	1,078
Calcined (2)	28,194	192,083	30,277	175,316
TOTAL	158,595	339,016	174,970	343,120
Crude gypsum mined	115,770	...	179,153	...
IMPORTS -				
Gypsum, crude (sulphate of lime)	6	196	13	127
Gypsum, ground, not calcined	105	3,132	80	1,976
Plaster of Paris, or gypsum calcined and prepared wall plaster	222	7,378	639	11,652
TOTAL	...	10,706	...	13,755
EXPORTS -				
Gypsum or plaster, crude	88,443	99,749	91,357	104,294
Plaster of Paris, ground, and prepared wall plaster	403	9,508	339	13,468
TOTAL	...	109,257	...	117,762

(1) Includes some anhydrite quarried in Nova Scotia.
(2) Does not include gypsum calcined in manufacturers' plants at Montreal and Calgary.

PRODUCTION (SALES) OF GYPSUM IN CANADA, 1925 - 1934.

Year	Tons	Value $
1925	740,325	2,389,891
1926	883,728	2,770,813
1927	1,063,117	3,251,015
1928	1,246,368	3,743,648
1929	1,211,689	3,345,696
1930	1,070,968	2,818,788
1931	863,752	2,111,517
1932	438,629	1,080,379
1933	382,736	675,822
1934	461,237	863,776

GYPSUM PRODUCTS INDUSTRY.

In 1934 there were eight manufacturing plants in Canada operating as follows:- a plant at Montreal, P.Q., brought crude gypsum from Nova Scotia, calcined it, and produced gypsum wallboard and accoustical plasters. At Caledonia, Ontario, another manufacturing works brought calcined gypsum from its own quarries and made gypsum blocks, wallboard, accoustical plasters, etc. Gypsum wallboard was also produced at Hagersville, Ontario, the company operating here, also produced wallboard at Hillsborough, New Brunswick. At Winnipeg 2 plants utilized calcined gypsum, obtained from primary plants in that province, in the manufacture of wallboard and tile. At Calgary, Alberta, gypsum wall plasters were manufactured from crude rock obtained from quarries situated in British Columbia while at Port Mann, B.C., a plant utilized calcined gypsum obtained from the Falkland quarries in the production of gypsum blocks, wallboard, tile and dry insulex.

PRODUCTION OF GYPSUM PRODUCTS INCLUDING WALLBOARD, BLOCKS, TILE, ETC., 1931 - 1934.

Year	Selling value at works $
1931	1,621,382
1932	1,222,004
1933	980,589
1934	1,089,710

MATERIALS USED IN THE GYPSUM PRODUCTS INDUSTRY, 1933 and 1934.

Materials	Unit of measure	1933 Quantity	1933 Cost at works $	1934 Quantity	1934 Cost at works $
GYPSUM PRODUCTS GROUP -					
Crude gypsum	ton	18,397	68,977	17,481	80,328
Calcined gypsum	ton	30,784	198,393	23,120	156,678
Clay	ton	56	999	78	1,487
Glue	xx	...	2,024	...	238
Hair	lb.	69,533	4,151	48,331	2,886
Paper	ton	2,034	145,815	3,071	156,575
Retarder	lb.	64,688	1,767	93,648	3,106
Sawdust or shavings	lb.	300,100	1,545	419,648	2,024
Starch or paste	lb.	179,047	11,494	168,000	10,994
Other materials	xx	...	33,179	...	18,127
Containers, etc.	xx	...	13,529	...	30,123
TOTAL	xx	...	481,873	...	462,566

CONSUMPTION OF GYPSUM IN CANADIAN CEMENT INDUSTRY, 1930-1934.

Year	Tons
1930	74,227
1931	56,677
1932	27,537
1933	13,319
1934	19,172

WORLD PRODUCTION OF GYPSUM, 1931 - 1933.

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")

(Long tons)

Producing country	1931	1932	1933
BRITISH EMPIRE			
United Kingdom	754,895	995,462	985,055
Union of South Africa	14,613	7,001	11,622
Canada	788,286	392,585	330,974
Cyprus (estimated)	15,300	12,000	14,000
Palestine	483	1,458	2,561
India	53,632	51,421	33,142
Australia	27,732	53,970	60,572
TOTAL	1,655,000	1,514,000	1,438,000
FOREIGN COUNTRIES			
Austria (d)	47,000	35,000	(a)
Estonia	7,727	8,168	5,670
France	2,787,253	(a)	(a)
Germany (e)	556,000	392,200	477,000
Greece (b)	6,400	4,334	(a)
Italy (including alabaster)	578,561	521,453	525,395
Latvia (exports)	32,014	37,759	48,130
Luxemburg	9,117	9,254	12,643
Poland	24,000	(a)	(a)
Roumania (b)	52,166	39,386	(a)
Spain (g)	1,295,576	1,133,282	1,070,509
Sweden	49	[illegible]	48
Yugoslavia	823	[illegible]	927
Algeria	74,416	85,970	82,083
Belgian Congo	1,000	[illegible]	(a)
Egypt (estimated)	130,000	130,000	130,000
Morocco (French)	69,288	(a)	(a)
Tunis (estimated)	25,000	25,000	25,000
United States	2,284,837	1,264,530	1,192,136
Argentina	38,849	33,013	34,255
Brazil (estimated)	2,000	2,000	2,000
Chile	12,965	11,800	(a)
Peru	8,000	(a)	(a)
China	69,266	52,400	64,100
New Caledonia	11,365	11,719	11,380
TOTAL (f)	8,050,000	(a)	(a)
WORLD'S TOTAL (f)	9,700,000	(a)	(a)

For footnotes, see page 9.

Footnotes to table on "WORLD PRODUCTION OF GYPSUM, 1931-1933 (page 8) -

(a) Information not available.
(b) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons.
(d) Estimated by Bundesministerium fur Handel und Verkehr.
(e) Figures supplied by Deutsche Gips-Verein, E.V., Berlin.
(f) Excluding the production of U.S.S.R. (Russia), which was recorded as 404,068 long tons during the year ended September, 1928, the latest year for which information is available.
(g) Including 407,047 and 343,028 cu. metres of gypsum also 60 and 80 cu. metres of alabaster converted as per (b) for years 1931 and 1932, respectively.

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LIST OF OPERATORS IN CANADIAN GYPSUM MINING INDUSTRY, 1934.

Name of Firm	Head Office Address	Quarry Location
NOVA SCOTIA -		
Atlantic Gypsum Products Company	40 Central St., Boston, Mass., U.S.A.	Aspy Bay, Cheticamp and Walton.
Canadian Gypsum Co. Ltd.	1221 Bay St., Toronto, Ont.	Wentworth.
The Connecticut Adamant Plaster Co.	10 River St., New Haven, Conn., U.S.A.	Cheverie.
The Nova Scotia Coal & Gypsum Co. Ltd.	Box 13, Mabou	Mabou Harbour.
North American Gypsum Co.	96 Curtis Ave., Rutland, Vt., U.S.A.	Baddeck Bay.
Windsor Gypsum Co.	Box 727, Newburgh, N.Y., U.S.A.	Newport Station.
Windsor Plaster Co. Ltd.	Windsor	Brooklyn, Hants Co.
NEW BRUNSWICK -		
Canadian Gypsum Co. Ltd.	1221 Bay St., Toronto, Ont.	Hillsborough
Thompson, F. M.	Hillsborough	Peticodiac Co.
ONTARIO -		
Canadian Gypsum Co. Ltd.	1221 Bay St., Toronto	Hagersville
Gypsum, Lime and Alabastine, Canada, Ltd.	Paris	Caledonia
MANITOBA -		
Gypsum, Lime and Alabastine, Canada, Ltd.	Paris, Ontario	Gypsumville
Western Gypsum Products Ltd.	505 McArthur Bdg., Winnipeg	Amaranth
BRITISH COLUMBIA -		
Gypsum, Lime and Alabastine, Canada, Ltd.	Paris, Ontario	Falkland.

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