Asbestos

By D. O. Kennedy [1] and Annie L. Mattila [2]

WORLD PRODUCTION of asbestos was somewhat higher in 1957 than in 1956. Production in Quebec increased 4 percent and in British Columbia 47 percent. Overall Canadian output was 5 percent higher than in 1956. Production in the United States reversed a 3-year decline by advancing slightly—3 percent over 1956. However, domestic production was only 2 percent of the world output.

Imports were slightly less in 1957 than in 1956, and their value declined 3 percent. Imports of low-iron chrysotile of Spinning-grade lengths from British Columbia increased 39 percent, and total imports from that source 17 percent. Imports of Canadian spinning fibers increased 4 percent compared with 1956.

TABLE 1.—Salient statistics of the asbestos industry in the United States, 1948–52 (average) and 1953–57

	1948–52 (average)	1953	1954	1955	1956	1957
Domestic asbestos:						
Produced.....short tons..	45, 426	57, 950	45, 813	44, 752	41, 626	42, 967
Sold or used.....do....	45, 684	54, 456	47, 621	[1] 44, 568	41, 312	43, 653
Value.....	$3, 194, 252	$4, 857, 359	$4, 697, 962	$4, 487, 428	$4, 742, 446	$4, 917, 548
Imports (unmanufactured) short tons..	666, 810	692, 245	678, 390	740, 423	[1] 689, 910	682, 732
Value.....	$47, 864, 705	$59, 753, 583	[2]$55, 856, 606	[2]$60, 957, 578	[1 2]$61,938,889	[2]$60, 139, 815
Exports (unmanufactured) [3] short tons..	15, 483	3, 076	1, 894	2, 787	2, 950	2, 893
Value.....	$3, 274, 916	$592, 222	$291, 157	$267, 776	$374, 964	$349, 602
Apparent consumption short tons..	697, 011	743, 625	724, 117	[1] 782, 204	[1] 728, 272	723, 492
Exports of asbestos products [1]..	$10, 898, 365	$10, 627, 293	$11, 484, 735	$12, 858, 504	$14, 181, 122	$15, 222, 659

[1] Revised figure.
[2] Owing to changes in tabulating procedures by the U. S. Department of Commerce, data known to be not strictly comparable with earlier years.
[3] Includes material that has been imported and subsequently exported without change.

DOMESTIC PRODUCTION

Asbestos production in the United States increased 3 percent compared with 1956, reflecting a 5-percent increase in Vermont and a 12-percent decrease in Arizona. Small quantities of amphibole asbestos were produced in California and North Carolina.

The Vermont Asbestos Mines Division of the Ruberoid Co., operating near Eden, Vt., continued to be the one large asbestos producer in the United States. Only a small percentage of spinning fiber was produced, and most of it was used in electrolytic cells rather than in textiles.

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Minerals Yearbook: Asbestos Chapters, 1957
ACL Doc 10996 · Page 1 of 13
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The purchase program for acquiring Government warehouse stocks of Arizona asbestos established under Public Law 733, 84th Congress, dated July 19, 1956, was continued in 1957. Purchases were made for a time with funds remaining from the previous program; but with exhaustion of the funds purchases ceased in April 1957, and most of the mines became virtually inactive. However, new funds amounting to $2½ million were made available in the United States Department of Interior Appropriation Bill for 1958, and purchases were resumed on July 1, 1957. Production of the longer fibers (crudes Nos. 1, 2, and 3) decreased 10 percent compared with 1956, and production of the shorter grades increased 28 percent. During 1957, 98 percent of all crudes Nos. 1, 2, and 3 was purchased by the Government.

Some of the more important Arizona asbestos mines were described and illustrated.[3]

The following firms and individuals produced chrysotile in the Globe district of Arizona in 1957: American Asbestos Cement Corp., American Fiber Corp., Barry De Rose, Jaquays Mining Corp., Kyle Asbestos Mines of Arizona, Lawrence D. Poor, Metate Asbestos Corp., Phillips Asbestos Mines, Via Development Co., and Western Chemical Co.

A small output of short-fiber chrysotile was reported by the Tabor Mining Co., Phoenix mine, Napa County, Calif. Amphibole asbestos was produced in small quantity by Huntley Industrial Minerals, Inc., at Lone Pine, Inyo County, Calif. Powhatan Mining Co. produced a small tonnage of amphibole asbestos in Transylvania County, N. C.

A chrysotile deposit in Beaverhead County, southwestern Montana, was explored.[4]

CONSUMPTION AND USES

Consumption of chrysotile in the United States in 1957 was a little lower than in 1956; but amosite and crocidolite were consumed in substantially larger quantities, hence, the overall consumption was virtually the same in 1957 as in 1956. About 94 percent of the asbestos used was chrysotile; of this only 22,500 tons (approximately 3 percent) was of Spinning grade.

Asbestos was used extensively in building construction, and it also had many industrial applications. The relation of asbestos consumption to industrial production and total new construction is shown in figure 1.

TABLE 2.—Apparent consumption of raw asbestos in the United States, 1948–52 (average) and 1953–57

Year	Short tons	Value	Year	Short tons	Value
1948–52 (average)	697,011	$47,784,041	1955	[1] 782,204	$65,177,230
1953	743,625	64,018,720	1956	[1] 728,272	[1] 66,306,371
1954	724,117	60,263,411	1957	723,492	64,707,761

[1] Revised figure.

[3] Jaquays, D. W., and Gerhardt, A. W., How Low-Iron Chrysotile Asbestos Is Mined and Milled in Central Arizona: Min. World, vol. 19, No. 8, July 1957, pp. 54–58.
[4] Boots, David A., A New Montana Chrysotile Discovery: Asbestos, vol. 39, No. 5, November 1957, pp. 2–6.

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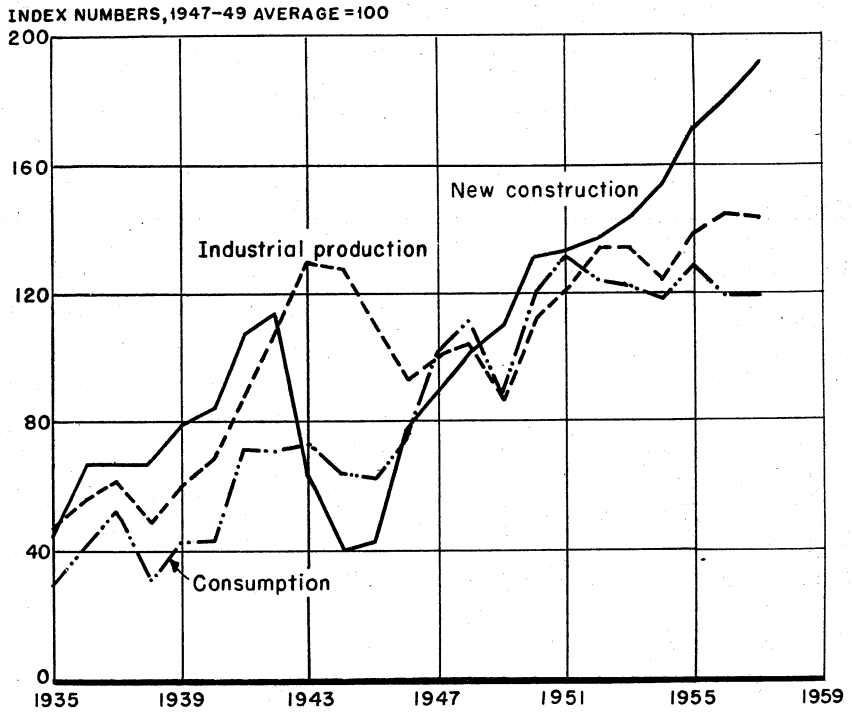


FIGURE 1.—Consumption of asbestos compared with total new construction and industrial production, 1935–57. Statistics on value of construction from Bureau of Foreign and Domestic Commerce and on industrial production from Federal Reserve Board.

PRICES

Prices of Quebec asbestos were advanced about 5 percent as of October 1, 1957. A requirement was added that payment must be in Canadian rather than United States funds. Under existing exchange rates such a requirement was, in effect an additional price advance. Following is the new schedule:

Grade:	*Price per ton*
Crude No. 1	Can$1,475–Can$1,850
Crude No. 2—Crude run-of-mine and sundry	790– 1,200
No. 3—Spinning fiber	370– 650
No. 4—Shingle fiber	180– 245
No. 5—Paper fiber	120– 150
No. 6—Plaster fiber	86
No. 7—Shorts	40– 80

Prices of British Columbia chrysotile asbestos similarly advanced were quoted in E&MJ Metal and Mineral Markets reports in November 1957 as follows, in Canadian funds: Per short ton f. o. b. Vancouver, B. C., effective October 1, 1957, crude No. 1 $1,522, AAA $787, AA $682, A $494, AC $325, AK $220. The AAA fiber is said to be equivalent to Rhodesian C&G No. 1, AA to C&G No. 2, A to Canadian 3K, AC to Rhodesian C&G No. 3, and AK to Canadian 4K.

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Vermont prices were increased in December 1957 to quotations higher than Canadian quotations for some grades to compensate for Canadian exchange differences. Vermont prices per short ton, f. o. b. Hyde Park or Morrisville, were as follows:

Group 3 (spinning and filtering)	$381–$440
Group 4 (shingle)	185– 205
Group 5 (paper)	123– 155
Group 6 (plaster)	88
Group 7 (shorts)	42– 77

Advanced prices for Arizona asbestos were quoted in December 1957 as follows:

Grade:	*Per short ton f. o. b. Globe*
No. 1 crude (soft)	$1, 500–$2, 000
No. 2 crude (soft)	1, 000– 1, 350
No. 3 crude (soft)	400– 675

No advances were quoted for filter grades or for semisoft crudes. No increases were paid by the Government during 1957 for stockpile grades, because prices were fixed by law at those of January 1956.

No market quotations are available for African or Australian asbestos as sales are made by negotiation with individual purchasers. United States Department of Commerce reports show the following average prices for imports in 1956 and 1957, per short ton:

Crocidolite:	*1956*	*1957*
Amosite, Union of South Africa	$126. 51	$145. 56
Bolivia	92. 74	75. 61
Australia	224. 00	230. 59
Union of South Africa	186. 46	197. 12

FOREIGN TRADE [5]

Imports.—During 1957 imports of chrysotile totaled 644,095 tons, a decline of nearly 2 percent from 1956. On the other hand, imports of amosite increased 21 percent and of crocidolite 9 percent. Although these items represented less than 6 percent of total imports, their increases were large enough to overcome the decline in chrysotile imports, with the result that the total imports (682,732 tons) were only slightly less than in 1956. About 92 percent of the 1957 imports originated in Canada, but so much of the Canadian material was low-priced short fiber that Canadian imports represented only 84 percent of the total value of all imports into the United States in 1957.

Spinning fiber, most of which was imported from Canada, was available in excess of United States requirements in 1957. Imports of low-iron chrysotile of Spinning grade from British Columbia increased from 4,143 tons in 1956 to 5,764 tons in 1957.

[5] Figures on imports and exports compiled by Mae B. Price and Elsie D. Jackson, Division of Foreign Activities, Bureau of Mines, from records of the U. S. Department of Commerce, Bureau of the Census.

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TABLE 3.—Asbestos (unmanufactured) imported for consumption in the United States, 1948–52 (average), 1953–55 (totals), and 1956–57, by countries and classes

[Bureau of the Census]

Country	Crude (including blue fiber)		Mill fibers		Short fibers		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1948–52 (average)	35,818	$6,537,410	[1] 184,066	[1] $22,804,623	446,926	$18,522,672	666,810	$47,864,705
1953	39,201	9,052,007	170,692	27,521,438	482,352	23,180,138	692,245	59,753,583
1954	37,461	7,502,358	148,962	24,556,953	491,967	23,797,295	678,390	55,856,606
1955	40,648	8,049,533	168,152	27,597,527	531,623	25,310,518	740,423	60,957,578
1956								
North America: Canada	273	208,248	155,961	27,814,601	477,512	24,261,803	633,746	52,284,652
South America:								
Bolivia	34	3,153					34	3,153
Venezuela	120	17,866	14	2,740	11	2,316	145	22,922
Total	154	21,019	14	2,740	11	2,316	179	26,075
Europe:								
Germany, West					40	1,530	40	1,530
Greece	2	400					2	400
Italy			11	12,060			11	12,060
Portugal	5	560					5	560
U. S. S. R.			6	2,750			6	2,750
United Kingdom			[2] 127	[2] 32,671	193	48,688	320	81,359
Yugoslavia	3,735	141,275					3,735	141,275
Total	3,742	142,235	144	47,481	233	50,218	4,119	239,934
Africa:								
British East Africa			13	1,199	9	1,494	22	2,693
French Morocco			3	3,111			3	3,111
Rhodesia and Nyasaland, Federation of [3]	[4] 16,375	[4] 3,179,721	339	180,117	30	14,244	[4] 16,744	[4] 3,374,082
Union of South Africa [5]	[4] 31,546	[4] 5,239,219	199	28,097	202	35,146	[4] 31,947	[4] 5,302,462
Total	[4] 47,921	[4] 8,418,940	554	212,524	241	50,884	[4] 48,716	[4] 8,682,348
Oceania: Australia	3,150	705,880					3,150	705,880
Grand total	[4] 55,240	[4] [6] 9,496,322	156,673	[6] 28,077,346	477,997	[6] 24,365,221	[4] 689,910	[4] [6] 61,938,889
1957								
North America: Canada	590	239,627	136,505	24,886,273	489,055	25,067,526	626,150	50,193,426
South America:								
Bolivia	28	2,117					28	2,117
Venezuela	17	5,672	2	475			19	6,147
Total	45	7,789	2	475			47	8,264
Europe:								
Germany, West	3	4,278			6	458	9	4,736
Italy	496	21,839	9	10,351	4	3,290	509	35,480
Portugal	10	1,120					10	1,120
United Kingdom			[2] 69	[2] 25,472	261	62,954	330	88,426
Yugoslavia	1,920	50,742					1,920	50,742
Total	2,429	77,979	78	35,823	271	66,702	2,778	180,504

See footnotes at end of table.

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TABLE 3.—Asbestos (unmanufactured) imported for consumption in the United States, 1948–52 (average), 1953–55 (totals), and 1956–57, by countries and classes—Continued

[Bureau of the Census]

Country	Crude (including blue fiber)		Mill fibers		Short fibers		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
Africa:								
Algeria					7	$589	7	$589
Rhodesia and Nyasaland, Federation of [2]	11,083	$1,997,485	431	$96,595	202	28,980	11,716	2,123,060
Union of South Africa [5]	34,721	5,998,997	315	60,233	406	54,723	35,442	6,113,953
Total	45,804	7,996,482	746	156,828	615	84,292	47,165	8,237,602
Oceania: Australia	6,592	1,520,019					6,592	1,520,019
Grand total	55,460	9,841,896	137,331	25,079,399	489,941	25,218,520	682,732	60,139,815

[1] Includes 11 tons ($1,632) classified by the Bureau of the Census as "amosite, crude;" reclassified by Bureau of Mines as "mill fibers."
[2] Believed to have originated in the Union of South Africa and processed in the United Kingdom.
[3] All believed to be from Southern Rhodesia.
[4] Revised figure.
[5] Includes 1956: 225 tons ($57,304) of chrysotile crudes, 30 tons ($5,820) of blue crocidolite, and 15 tons ($3,875) of short fibers credited by the Bureau of the Census to Mozambique; 2 tons ($785) of amosite crude credited by the Bureau of the Census to the United Kingdom and 2 tons ($679) of blue crocidolite believed to have originated in the Union of South Africa and processed in the United Kingdom. 1957: 51 tons ($11,162) of blue crocidolite and 2 tons ($607) of mill fibers credited by the Bureau of the Census to Southern British Africa; 1 ton ($296) of short fibers credited by the Bureau of the Census to British East Africa; and 20 tons ($1,773) of short fibers credited by the Bureau of the Census to Mozambique.
[6] Owing to changes in tabulating procedures by the Bureau of the Census data known to be not comparable with other years.

TABLE 4.—Asbestos (chrysotile) imported for consumption in the United States from Canada, by grades, 1948–52 (average) and 1953–57, in short tons

[Bureau of the Census]

Grades	1948–52 (average)	1953	1954	1955	1956	1957
Crude No. 1	227	168	82	65	50	44
Crude No. 2	266	207	181	164	217	162
Other crudes	422	467	844	644	6	384
Spinning or textile fiber	21,100	19,417	18,319	21,339	20,638	21,222
Shingle fiber	86,409	86,540	72,242	83,898	83,032	67,833
Paper fiber	74,164	63,139	57,465	61,954	52,291	47,450
Short fiber	446,884	482,179	491,149	531,023	477,512	489,055
Total	629,472	652,117	640,282	699,087	633,746	626,150

TABLE 5.—Asbestos (chrysotile) imported for consumption in the United States from Southern Rhodesia,[1] by grades, 1948–52 (average) and 1953–57, in short tons

[Bureau of the Census]

Grades	1948–52 (average)	1953	1954	1955	1956	1957
Crude No. 1	1,142	1,039	181	105	61	666
Crude No. 2	2,410	814	275	162	71	56
Spinning or textile fiber	172	730	156	76	339	344
Other crudes	[2] 6,404	7,304	6,243	7,901	[3] 16,243	10,361
Shingle fiber	49	103		161		87
Short fiber	6		364	15	30	202
Total	10,183	9,990	7,219	8,420	[3] 16,744	11,716

[1] Effective July 1, 1954, reported by the Bureau of the Census as Federation of Rhodesia and Nyasaland. All believed to be from Southern Rhodesia.
[2] Includes small amounts credited by the Bureau of the Census to Mozambique.
[3] Revised figure.

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TABLE 6.—Asbestos (amosite, crocidolite, and chrysotile) imported for consumption in the United States from Union of South Africa, 1954–57, in short tons

[Bureau of the Census

	1954	1955	1956	1957
Amosite	14, 634	11, 745	[1] [2] 11, 433	14, 197
Crocidolite	10, 911	[2] 14, 592	[1] [2] 18, 344	[2] 17, 820
Chrysotile	1, 855	2, 363	[2] 2, 170	[2] 3, 425
Total	27, 400	28, 700	[1] 31, 947	35, 442

[1] Revised figure.
[2] Includes countries adjusted by Bureau of Mines. See table 3, footnote 5, for explanation.

Exports.—Exports of unmanufactured asbestos decreased slightly in 1957. Compared with imports they are insignificant.

TABLE 7.—Asbestos and asbestos products exported from the United States, 1948–52 (average) and 1953–57

[Bureau of the Census]

Year	Unmanufactured asbestos				Asbestos products	
	Domestic [1]		Foreign [2]		Domestic [1]	Foreign [2]
	Short tons	Value	Short tons	Value	Value	Value
1948–52 (average)	13, 539	$2, 841, 133	1, 944	$433, 743	$10, 886, 646	$11, 719
1953	2, 780	540, 273	296	51, 949	10, 615, 832	11, 461
1954	1, 847	275, 778	47	15, 379	11, 475, 082	9, 653
1955	2, 161	236, 336	626	31, 440	12, 820, 917	37, 587
1956	2, 797	337, 696	153	37, 268	14, 171, 309	9, 813
1957	2, 775	339. 923	118	9, 679	15, 208, 443	14, 216

[1] Material of domestic origin, or foreign material that has been milled, blended, or otherwise processed in the United States.
[2] Material that has been imported and subsequently exported without change.

TABLE 8.—Asbestos and asbestos products exported from the United States, 1956–57, by kinds

[Bureau of the Census]

Products	1956		1957	
	Quantity	Value	Quantity	Value
Unmanufactured asbestos:				
Crude and spinning fibers, short tons	514	$107, 022	333	$90, 826
Nonspinning fibers, do	301	54. 654	334	60, 918
Waste and refuse, do	1, 982	176, 020	2, 108	188, 179
Total unmanufactured, do	2, 797	337, 696	2, 775	339, 923
Asbestos products:				
Brake lining and blocks:				
Molded, semimolded, and woven	[1]	5, 380, 551	[1]	5, 117, 533
Clutch facing and lining, number	1, 160, 166	910, 820	1, 350, 181	1, 044, 234
Construction materials, short tons	19, 076	3, 749, 659	17, 489	4, 034, 530
Pipe covering and cement, do	2, 262	737, 666	3, 522	1, 091, 419
Textiles, yarn, and packing, do	1, 206	2, 785, 596	1, 449	3, 238, 557
Manufactures, n. e. c	[2]	607, 017	[2]	682, 170
Total products		14, 171, 309		15, 208, 443

[1] Values have been summarized; quantities not shown.
[2] Quantity not recorded.

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WORLD REVIEW

World production of asbestos was higher in 1957 than in 1956. The increase was due in part to an upward estimate of production in the U. S. S. R. Production in Quebec increased about 4 percent, and the overall Canadian production was 5 percent greater than in 1956. United States output increased 6 percent.

NORTH AMERICA

Canada.—The remarkable engineering operations involved in draining Black Lake and stripping the heavy overburden from the asbestos deposit, chiefly by dredging methods, were described in some detail in several articles.[6] It was expected that stripping operations would continue into 1959 but that mining would begin by mid-1958 to furnish asbestos-bearing rock for the new mill having a capacity of 5,000 tons a day. Mining and milling operations were conducted by Lake Asbestos of Quebec, Ltd., a subsidiary of American Smelting and Refining Co.

The deposit at East Broughton mined by Quebec Asbestos Mines, a subsidiary of the Philip Carey Manufacturing Co., was nearly exhausted. A new deposit 3 miles eastward was under development, and a new mill on this property was expected to be operated in 1958 by the Carey-Canadian Mines, Ltd.

National Asbestos Mines, a subsidiary of National Gypsum, Ltd., expected to operate its new 3,000-ton-per-day mill a few miles northeast of Thetford Mines during 1958.

Nicolet Asbestos Mines introduced additional facilities to increase its mill capacity from 2,400 tons per day to 3,600.

The Beaver mill of the Asbestos Corp. was renovated and enlarged to handle the production of both the Beaver and King mines. The King mill will be dismantled.

A series of articles covering current progress in Quebec asbestos mining appeared late in 1957.[7]

The Jeffrey mill of Canadian Johns-Manville at Asbestos, Quebec, was described.[8]

Cassiar Asbestos Corp., Ltd., in British Columbia increased its milling capacity and improved its mining and transportation facilities. It acquired 3 additional asbestos properties, on 1 of which development work was conducted.

Advocate Mines, Ltd., was reported to have delineated an asbestos reserve of about 13 million tons on its property in northern Newfoundland. The fiber, unsuited for spinning, was a semiharsh, free-filtering type of chrysotile well adapted for manufacturing pipe and other asbestos-cement products. Two 600-pound bulk samples gave a 14.9-percent fiber recovery with a value of $21.53 per ton and 10.63-percent recovery with a value of $14.83 per ton, respectively.[9]

[6] Mine and Quarry Engineering, Developing a Quebec Asbestos Mine: Vol. 23, No. 9, September 1957, pp. 384–390.
Pit and Quarry, Lake Asbestos of Quebec: Vol. 50, No. 2, August 1957, pp. 68–75.
Mining Engineering, Black Lake Asbestos Opens Pit Scheduled to Begin Operations Next Summer: Vol. 9, No. 8, August 1957, pp. 845, 848, 854.
Asbestos, Lake Asbestos of Quebec, Ltd., New $32.5 Million Asbestos Mine and Mill: Vol. 39, No. 2, August 1957, pp. 2–12.
Skillings' Mining Review, Lake Asbestos of Quebec, Ltd.: Vol. 46, No. 15, July 13, 1957, pp. 2–4, 20–21.
[7] Guimond, Roger, and Canning, Hugh, The Asbestos Industry: Precambrian, vol. 30, No. 12, December 1957, pp. 12–31.
[8] Pit and Quarry, World's Leading Asbestos Operation: Vol. 49, No. 12, June 1957, pp. 126–130, 136.
[9] Northern Miner, Advocate's Asbestos Deposit Betters Grade and Tonnage: Vol. 42, No. 41, Jan. 3, 1957, pp. 1, 15.
Asbestos, Advocate Mines, Limited: Vol. 38, No. 8, February 1957, pp. 16–20.

Minerals Yearbook: Asbestos Chapters, 1957 Published by AsbestosClaims.Law
ACL Doc 10996 · Page 8 of 13 asbestosclaims.law/library/10996/8

TABLE 9.—World production of asbestos by countries,[1] 1948–52 (average) and 1953–57, in short tons [2]

[Compiled by Helen L. Hunt and Berenice B. Mitchell]

Country [1]	1948–52 (average)	1953	1954	1955	1956	1957
North America:						
Canada (sales) [3]	813,911	911,226	924,116	1,063,802	1,014,249	1,046,086
United States (sold or used by producers)	45,684	54,456	47,621	44,568	41,312	43,653
Total	859,595	965,682	971,737	1,108,370	1,055,561	1,089,739
South America:						
Argentina	257	([4])	([4])	198	238	220
Bolivia (exports)	281	810	33		62	121
Brazil	1,408	1,357	2,816	3,124	3,739	[5] 3,300
Chile	224	([4])	([4])	([4])	([4])	([4])
Venezuela	271	185	743	1,757	5,041	7,727
Total	2,441	[5] 2,800	[5] 4,000	[5] 5,300	[5] 9,300	[5] 11,600
Europe:						
Bulgaria	[5] 220	992	1,213	1,323	1,102	[5] 1,100
Finland [6]	12,016	12,047	7,853	18,674	8,282	10,031
France	5,404	11,419	14,449	10,913	9,370	15,432
Greece	23	1	2	3	6	
Italy	21,816	22,484	25,955	33,266	36,459	37,797
Portugal	275	105	30	56	35	[5] 30
Spain	41		176			
U. S. S. R.[5]	224,000	300,000	375,000	450,000	500,000	500,000
Yugoslavia	1,509	4,131	3,598	4,305	4,165	6,128
Total [1 5]	270,000	350,000	435,000	520,000	565,000	575,000
Asia:						
Cyprus	15,297	15,881	15,309	15,306	15,375	[7] 13,313
India	407	805	435	1,564	1,378	664
Iran [8]	12			110	39	[5] 55
Japan	5,482	4,495	6,916	6,932	9,914	13,330
Korea, Republic of	([4])		233	66	54	96
Taiwan	294		161	403	118	268
Turkey	172		50	259	634	
Total [1 5]	23,700	27,000	31,000	36,000	39,000	39,000
Africa:						
Bechuanaland	114	548	729	1,426	1,356	[5] 1,300
Egypt	730	220				
Kenya	483	166	224	152	170	109
Madagascar	6	8				
Morocco: Southern Zone	547	600	597	631	379	132
Mozambique			196	301	202	75
Rhodesia and Nyasaland, Fed. of: Southern Rhodesia	76,476	87,739	79,962	105,261	118,973	132,124
Swaziland	33,760	30,103	30,142	32,613	29,875	30,727
Uganda			7	2	2	
Union of South Africa	89,055	94,817	109,151	119,699	136,520	157,296
Total	201,171	214,201	221,008	260,085	287,477	321,763
Oceania:						
Australia	2,510	5,567	5,279	5,993	9,857	[5] 13,800
New Zealand	344			172	368	[5] 330
Total	2,854	5,567	5,279	6,165	10,225	[5] 14,130
World total (estimate) [1 2]	1,360,000	1,565,000	1,670,000	1,935,000	1,970,000	2,050,000

[1] In addition to countries listed, asbestos is produced in China, Czechoslovakia, and North Korea. Estimates by author of chapter are included in the total.

[2] This table incorporates a number of revisions of data published in previous Asbestos chapters. Data do not add to totals shown due to rounding where estimated figures are included in the detail.

[3] Exclusive of sand and gravel and stone (waste rock only), production of which is reported as follows: 1948–52 (average) 40,178 tons; 1953, 21,118 tons; 1954, 26,429 tons; 1955, 28,582 tons; 1956, 45,428 tons; 1957, 13,652 tons.

[4] Data not available; estimate by author of chapter included in total.

[5] Estimate.

[6] Includes asbestos flour.

[7] Exports.

[8] Year ended Mar. 20 of year following that stated.

486221—58——15

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TABLE 10.—Sales of asbestos in Canada 1956–57, by grades

[Dominion Bureau of Statistics]

Grades	1956			1957		
	Short tons	Value		Short tons	Value	
		Total	Average per ton		Total	Average per ton
Crude No. 1, 2, and other	717	$692,677	$966	622	$589,410	$948
Milled group:						
3	33,929	14,071,703	415	34,320	14,210,634	414
4	246,295	42,124,569	171	259,268	45,848,069	177
5	112,759	13,200,835	117	110,428	13,161,082	119
6	168,942	12,685,874	75	159,098	12,222,231	77
7	428,159	16,676,452	39	460,539	18,041,742	39
8	23,448	407,859	17	21,811	416,263	19
Total, all grades	1,014,249	99,859,969	98	1,046,086	104,489,431	100
Waste rock	45,428	52,507	1	13,652	18,455	1
Rock mined	21,922,874			22,610,743		
Rock milled	13,740,326			14,096,117		

EUROPE

Greece.—Kennecott Copper Corp. conducted further geological studies and diamond-drill exploration of an asbestos deposit in Kozani Province, western Macedonia. Conclusive results of tests of samples of fiber from the deposit had not yet been announced.

Italy.—The Vittore-Balangero Mine (Torino) was reported to have attained a production of 35,300 short tons a year of chrysotile—about 98 percent of the total Italian production.[10]

AFRICA

Union of South Africa.—Difficult problems arose in mining both crocidolite and amosite in the Union. Crocidolite mining difficulties were largely overcome, and production increased steadily; but the

TABLE 11.—Asbestos produced in Southern Rhodesia, 1953–57

Year	Short tons	Value	Year	Short tons	Value
1953	87,739	£6,542,731	1956	118,973	£8,524,671
1954	79,962	5,922,724	1957	132,124	9,016,388
1955	105,261	7,051,831			

TABLE 12.—Asbestos produced in the Union of South Africa, 1953–57, by varieties and sources, in short tons

Variety and source	1953	1954	1955	1956	1957
Amosite (Transvaal)	38,258	45,922	50,137	50,097	56,798
Chrysotile (Transvaal)	18,840	19,373	20,535	24,336	25,646
Blue (Transvaal)	16,824	15,610	13,964	14,399	15,503
Blue (Cape)	20,883	28,136	34,878	47,688	59,549
Anthophyllite (Transvaal)	12	110	185		
Total	94,817	109,151	119,699	136,520	157,296

[10] Mining World (London), Production Doubled at Italy's Largest Open-Pit Asbestos Mine: Vol. 19, No. 11, October 1957, p. 95.

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TABLE 13.—Asbestos produced in and exported from the Union of South Africa, 1953–57

Year	Production (short tons)			Exports	
	Transvaal	Cape Province	Total	Short tons	Value
1953	73,934	20,883	94,817	71,971	£4,158,476
1954	81,015	28,136	109,151	94,322	5,453,116
1955	84,821	34,878	119,699	114,056	6,697,352
1956	88,832	47,688	136,520	122,867	7,336,037
1957	97,747	59,549	157,296	[1] 103,399	[1] 6,559,950

[1] January to September.

necessity for mining amosite at greater depths was attended with problems of pumping and ventilation that were not resolved.[11]

OCEANIA

Australia.—Production of crocidolite at Wittenoon Gorge, Western Australia, increased considerably in 1957. Additional milling capacity was constructed. Mining was difficult and costly because the 2 main fiber seams were about 20 feet apart and 200 feet above the gorge floor. The fiber and fiber-bearing rock removed from a series of adits and crosscuts were transported 2 miles to the milling plant. The nature of the fiber veins and mining methods pursued were described.[12]

TECHNOLOGY

A new type of lime product was marketed in California. It consisted of hydrated lime to which was added 10 percent asbestos fiber. It was claimed that addition of the asbestos increased workability, plasticity, water retentivity, and compressive and tensile strength. It was also said to improve fireproofing and insulating qualities. Finishing-coat plasters were prepared with even larger proportions of asbestos.[13]

A new gasket material consisting of rubber-coated asbestos fiber was introduced. It was said to have greater flexibility than conventional asbestos-fiber gasket products, and to have good sealing properties at temperatures up to 500° F., and at pressures up to 500 p. s. i.[14]

The importance of air currents in asbestos milling was described in some detail. Air is used as an aspirator or "lifter" of fiber from the screens, and is also employed for dust control, for pneumatic conveying, and in cyclone fiber collectors. It was estimated that the Quebec asbestos mills in toto use air at a rate of 10 million cubic feet per minute.[15]

A new filtering material that was claimed to have superior properties consisted of a combination of asbestos with diatomite.

[11] Mining Journal (London), Blue and Amosite: Vol. 248, No. 6356, June 14, 1957, p. 758.
[12] Mine and Quarry Engineering, Australian Blue Asbestos: Vol. 23, No. 7, July 1957, p. 322.
Mining Magazine (London), Wittenoon Blue Asbestos: Vol. 96, No. 2, February 1957, pp. 121–122.
Mining Journal (London), Mining Blue Asbestos in W. Australia: Vol. 248, No. 6340, Feb. 22, 1957, pp. 238–239.
[13] Pit and Quarry, Diamond Springs Lime Co. Markets 10 Percent Asbestos Lime: Vol. 50, No. 1, July 1957, p. 158.
[14] Materials and Methods, Coated Asbestos Fiber Used as Gaskets, Seals: Vol. 45, No. 5, May 1, 1957, p. 198.
[15] Rozovsky, H., Air in Asbestos Milling: Canadian Min. Jour., vol. 78, No. 5, May 1957, pp. 95–103.

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The properties and qualities of the various types of African asbestos and their adaptability for ordinary and specialized uses were described. New and important applications were being developed, particularly in combination with plastics and resins.[16]

The composition, physical properties, qualities, and uses of amosite were described.[17]

Many patents relating to asbestos were recorded in 1957. Several related to improvements in asbestos milling processes, such as removal of dust and unopened fiber bundles, and a more complete recovery of short fibers.[18]

Improvements were devised in processes of manufacture of heat-insulating materials, such as asbestos paper and sheets, and 85-percent magnesia products; also in increasing their thermal efficiency.[19]

Patents were issued in 1957 relating to improved processes for making molded products, including regulation of molding pressure, orientation of asbestos fiber, and preparation of free-flowing mixtures.[20]

Patents were issued pertaining to methods of shaping and curing brake linings and other friction materials, and of making friction products from both long and short asbestos fibers.[21]

A new roofing and siding composition was patented consisting of 15 to 20 percent asbestos, together with 35 to 50 percent slate flour, and 25 to 35 percent portland cement.[22]

A method was devised for making a two-layer composition floor tile in which asbestos was used as a strengthener and whiting as a filler.[23]

A composition for demonstrating visually the efficiency of filtering materials consisted of a mixture of 3 to 15 percent of minimum 3-micron asbestos fiber together with viscose, cotton or other materials.[24]

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[16] Sinclair, W. E., Asbestos in Industry: South African Min. and Eng. Jour., vol. 68, No. 3345, Mar. 22, 1957, pp. 519–521.

[17] Sinclair, W. E., Amosite-Montasite the Unique Forms of Amphibole Asbestos: Asbestos, vol. 38, No. 9, March 1957, pp. 2–12.

[18] Weston, D., and MacPherson, A. R., Movable Bed Stratifier With Constant Pneumatic Current: U. S. Patent 2,803,346, Aug. 20, 1957.

Sheldon, W. D., Jr., Apparatus for Removing Dust and Granular Material From Asbestos Fiber: U. S. Patent 2,813,306, Nov. 19, 1957.

Johnson, H. B., and Boss, C. C. (assigned to The Quaker Oats Co., Chicago, Ill.), Method of Separating Asbestos From Its Ores: U. S. Patent 2,813,626, Nov. 19, 1957.

[19] Lillis, S. M. (assigned to Victor Manufacturing & Gasket Co., Chicago, Ill.), Method of Making Cement-Bound Asbestos Paper: U. S. Patent 2,791,159, May 7, 1957.

Spooner, L. W., and Joyner, G. A. (assigned to Westinghouse Electric Co.), Method of Making Asbestos Insulating Material With Improved Electrical Properties: U. S. Patent 2,804,908, Sept. 3, 1957.

Kloss, H. (assigned to Sued-Chemie-West G. m. b. H., New Ulm (Danube), Germany), Process of and Apparatus for Producing Continuous Layers of Fiber Material: U. S. Patent 2,811,195, Oct. 29, 1957.

Speil, S., and Barnett, I. (assigned to Johns-Manville Corp., New York, N. Y.), Inorganic Bonded Thermal Insulating Bodies and Method of Manufacture: U. S. Patent 2,811,457, Oct. 29, 1957.

Bruno, A. J., and Speil, S. (assigned to Johns-Manville Corp., New York, N. Y.), Thermal Insulating Bodies and Method of Manufacture: U. S. Patent 2,808,338, Oct. 1, 1957.

Seipt, W. R. (assigned to Keasbey & Mattison Co., Ambler, Pa.), Asphaltic Magnesia Composition and Method of Producing the Same: U. S. Patent 2,800,415, July 23, 1957.

Schwartz, A., and Fogelson, E. (assigned to Leobarb Corp., New York, N. Y.), Thermal Insulation: U. S. Patent 2,786,004, Mar. 19, 1957.

Fisher, E. J., Blending and Mixing Machine: U. S. Patent 2,764,392, May 14, 1957.

[20] Reed, D. J. (assigned to A. O. Smith Corp., Milwaukee, Wis.), Fiber Reinforced Tubular Article: U. S. Patent 2,791,241, May 7, 1957.

Colliva, D. (assigned to Eternit Societa per Azioni, Genoa, Italy), Valve With Adjustable Weight for Automatically Varying the Moulding Pressure in Tube Moulding Machines: U. S. Patent 2,813,544, Nov. 19, 1957.

Thompson, J. S. (assigned to Parker Rust Proof Co.), Inorganic Molding Composition: U. S. Patent 2,795,510, June 11, 1957.

Hutchcroft, C. R., Seipt, W. R., and Schneider, R. A. (assigned to Keasbey & Mattison Co., Ambler, Pa.), Equipment for Charging Fiber-Containing Slurry Into Molds: U. S. Patent 2,816,321, Dec. 17, 1957.

[21] Cofek, H. J. (assigned to Raybestos-Manhattan, Inc., Passaic, N. J.), Production of Friction Material: U. S. Patent 2,811,750, Nov. 5, 1957; Method for Curing Friction Compounds: U. S. Patent 2,790,206, Apr. 30, 1957.

[22] Blake, C. L., Cementitious Material Containing Slate Flour: U. S. Patent 2,785,987, Mar. 19, 1957.

[23] Banks, C. K. (assigned to Metal and Thermit Corp., New York, N. Y.), Floor Covering: U. S. Patent 2,816,852, Dec. 17, 1957.

[24] Ayer, J. L. (assigned to Cambridge Filter Corp.), Filter Demonstration Device: U. S. Patent 2,790,253, Apr. 30, 1957.

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A new self-lubricating packing material contained asbestos fiber agitated with a finely divided abrasive material, such as soot or ground glass, for the purpose of loosening the fibers. The material was mixed with ground talc or graphite and molded.[25]

Asbestos was an important constituent of a patented fire-resistant artificial fireplace log.[26]

A barrier material in an intermittent dehumidifying apparatus was made by suspending asbestos fiber in excess of ⅛ inch in length with a binder in a water slurry and collecting a mat of desired thickness on a screen.[27]

[25] Zagorski, J., and Zagorski, J., Method of Preparing Self-Lubricating, Asbestos Containing Stuffing-Box Packings: U. S. Patent 2,809,397, Oct. 15, 1957.
[26] Nielsen, H., Simulated-Log Fireplace Heater: U. S. Patent 2,762,362, May 14, 1957.
[27] Asker, G. C. F. (assigned to Desomatic Products, Inc., Falls Church, Va.), Valveless Intermittent Dehumidifier: U. S. Patent 2,801,706, Aug. 6, 1957.

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