Asbestos

By Donald O. Kennedy [1] and Annie L. Marks [2]

TOTAL OUTPUT of asbestos in the United States declined in 1954 from the record level attained in 1953. However, production in Arizona increased, principally because of a substantial rise in the sale of short fibers. Imports, consumption, and exports declined compared with 1953, continuing the downward trend begun in 1952. Imports of low-iron chrysotile of spinning grade from Southern Rhodesia decreased to less than 25 percent of the 1953 imports, but imports from British Columbia increased almost enough to compensate for the loss of Rhodesian fiber. Total imports of Canadian spinning-grade fibers decreased 4 percent compared with 1953.

Prices of Arizona chrysotile were advanced approximately 5 percent in February 1954, but other prices remained unchanged from the 1952 level.

TABLE 1.—Salient statistics of the asbestos industry in the United States, 1945–49 (average) and 1950–54

	1945–49 (average)	1950	1951	1952	1953	1954
Domestic asbestos:						
Produced short tons	26,662	41,358	51,730	53,888	57,950	45,813
Sold or used do	26,163	42,434	51,645	53,864	54,456	47,621
Value	$1,258,009	$2,925,050	$3,912,500	$4,713,032	$4,857,359	$4,697,962
Imports (unmanufactured) short tons	516,421	705,458	761,873	709,469	692,245	678,390
Value	$27,364,752	$47,284,205	$58,521,046	$61,604,601	$59,753,583	[1] $55,856,606
Exports (unmanufactured) [2] short tons	10,410	20,890	16,526	10,724	3,076	1,894
Value	$1,725,159	$4,084,384	$3,662,270	$2,670,970	$592,222	$291,157
Apparent consumption short tons	532,281	727,002	796,992	752,609	743,625	724,117
Exports of asbestos products [2 3]	$8,982,900	$8,147,141	$14,321,278	$13,028,857	$10,627,293	$11,484,735

[1] Owing to changes in tabulating procedures by the U. S. Department of Commerce, data known not to be strictly comparable to earlier years.
[2] Includes material that has been imported and subsequently exported without change.
[3] 1945 figures include value of "Magnesia and manufactures."

DOMESTIC PRODUCTION

Chrysotile was produced in Arizona and Vermont during 1954 and amphibole in California, Georgia, and North Carolina. So few companies have produced chrysotile and amphibole that detailed figures cannot be published. Domestic sales of chrysotile in 1954 were 10 percent below 1953 and amphibole sales 38 percent below,

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Minerals Yearbook: Asbestos Chapters, 1954
ACL Doc 10993 · Page 1 of 12
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resulting in a decline of 13 percent in total domestic sales from 1953.

Production in Arizona was 63 percent higher than in 1953, but the increase was confined to the shorter grades. The following firms and individuals produced chrysotile in the Globe district of Arizona during 1954: American Fiber Co., Arizona Asbestos Mining Co., Bear Canyon Mining Co., Crown Asbestos Mines, Inc., Arthur Enders, Jacquays Mining Corp., Jack Kennedy, Kyle Asbestos Mines, Metate Asbestos Corp., W. B. Patterson, Phillips Asbestos Mines, Triple Star Mining Co., and Western Chemical Co.

The Materials Branch, Emergency Procurement Service, General Services Administration, has a receiving depot in Globe, Ariz., and purchases domestic low-iron chrysotile for defense and other essential uses. Reports of purchases made at the Globe depot show 79 percent of the production of crudes Nos. 1, 2, and 3 in Arizona was sold to the Government. The Government was paying $1,500 a ton for crude No. 1, $900 for crude No. 2, and $400 for crude No. 3. The program was scheduled to run until October 1, 1957, or until a total of 1,500 tons, crudes Nos. 1 and 2 combined, had been purchased.

The Mount Shasta Mining Co., Mount Shasta, Calif., reported a small sale of chrysotile fibers that probably came from stock, since no mining was reported in 1954. W. Zimdars and J. Delmue, Auburn, Calif., mined and sold a small quantity of tremolite asbestos from Placer County. Calasbestos Corp., South San Gabriel, Calif., shipped a small quantity of amphibole asbestos from Riverside County.

The Powhatan Mining Co., Baltimore, Md., reported a small production of amphibole asbestos from Rabun County, Ga.

Amphibole asbestos was produced in North Carolina by the Powhatan Mining Co. in Transylvania County and the Mining & Milling Corp., Spruce Pine, N. C., in Spruce Pine County. The Powhatan Mining Co. shipped the asbestos rock to its plant in Baltimore, Md., where it was milled and processed to produce asbestos. The Mining & Milling Corp., a subsidiary of Mastic Tile Corp. of America, shipped the crude ore to California, where it was processed and the recovered fibers sold.

The Vermont Asbestos Mines Division of the Ruberoid Co. produced less chrysotile asbestos in 1954 than in 1953. The Vermont quarry remained the only sizable asbestos producer in the United States.[3]

CONSUMPTION AND USES

The consumption of asbestos in the United States, as shown in table 2, decreased 3 percent in quantity and 6 percent in value in 1954 as compared with 1953.

TABLE 2.—Apparent consumption of raw asbestos in the United States, 1945–49 (average) and 1950–54

Year	Short tons	Value	Year	Short tons	Value
1945–49 (average)	532, 281	$26, 897, 602	1952	752, 609	$63, 646, 663
1950	727, 002	46, 124, 871	1953	743, 625	64, 018, 720
1951	796, 992	58, 771, 276	1954	724, 117	60, 263, 411

[3] Briggs, Marion L., More Efficient Mining and Modern Plant Double Asbestos Production: Rock Products, vol. 57, No. 7, July 1954, pp. 74–78.

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The consumption of chrysotile, which represented 96 percent of the total United States consumption of asbestos, also decreased 3 percent in 1954 as compared with 1953. Consumption of spinning-grade chrysotile fibers decreased 13 percent, while consumption of short-fiber chrysotile decreased only 2 percent. The consumption of amosite and amphibole asbestos decreased 4 percent and 38 percent, respectively; consumption of crocidolite increased 19 percent. Asbestos was employed extensively in building materials, such as asbestos-cement shingles and siding, floor tile, and various heat-insulating products. Trends in asbestos consumption, industrial production, and volume of new construction are compared graphically in figure 1.

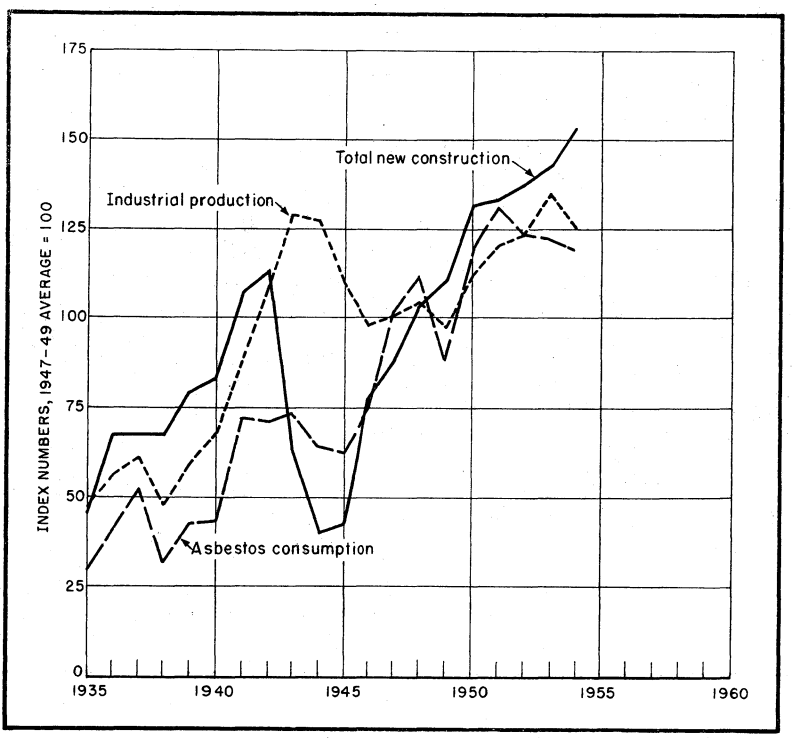


FIGURE 1.—Consumption of asbestos compared with total new construction and industrial production, 1935–54. Statistics on value of construction from Bureau of Foreign and Domestic Commerce and on industrial production from Federal Reserve Board.

PRICES

Prices of asbestos continued unchanged during 1954. No changes occurred in Canadian or Vermont quotations from those recorded in 1952. Trade-journal quotations follow:

Crude No. 1	$1, 100–$1, 500
Crude No. 2	500– 1, 000
No. 3—Spinning fiber	300– 525
No. 4—Shingle fiber	150– 200
No. 5—Paper fiber	100– 140
No. 6—Plaster fiber	77
No. 7—Shorts	35– 70

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The Arizona quotations were increased in February 1954 as follows:

	Per ton of 2,000 lbs., f. o. b. Globe	
	January 1954	*February 1954*
No. 1 crude	$1, 200–$1, 500	$1, 600–$1, 700
No. 2 crude	900– 1, 000	1, 000– 1, 050
No. 3 crude	375– 450	450– 500
Filter fiber	425– 450	250– 450

There were no market quotations for African asbestos. It was sold by negotiation with individual purchasers. Department of Commerce reports show the following average figures for imports in 1953 and 1954, per short ton:

	1953	*1954*
Amosite:		
South Africa	$117. 26	$132. 73
Crocidolite:		
Bolivia	446. 85	450. 21
Australia	352. 18	316. 83
South Africa	224. 55	209. 61

FOREIGN TRADE [4]

Imports.—Since 1950 the United States has consumed about half the asbestos produced in the world, but in 1954, as in 1953, only 7 percent of its requirements came from domestic sources. In 1954 imports were 2 percent less than in 1953. Over 94 percent of the 1954 imports originated in Canada; 4 percent came from the Union of South Africa, Southern British Africa, and British East Africa; and 1 percent came from Southern Rhodesia. On a value basis, these percentages were 86, 9, and 4, respectively. These figures reveal that most of the relatively cheaper short fibers were imported from Canada and that oversea shipments consisted generally of the higher priced fibers.

Supplies of chrysotile of spinning grade were of most interest strategically. Tables 4 and 5 were therefore prepared to show imports of chrysotile from Canada and Southern Rhodesia, by grades.

TABLE 3.—Asbestos (unmanufactured) imported for consumption in the United States, 1945–49 (average), 1950–52 (totals), and 1953–54, by countries and classes

[U. S. Department of Commerce]

Country	Crude (including blue fiber)		Mill fibers		Short fibers		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1945–49 (average)	29, 305	$4, 228, 651	151, 563	$13, 192, 477	335, 553	$9, 943, 626	516, 421	$27, 364, 754
1950	27, 803	5, 857, 687	177, 951	21, 381, 704	499, 704	20, 044, 814	705, 458	47, 284, 205
1951	35, 289	6, 618, 140	[1] 225, 284	[1] 28, 844, 485	501, 300	23. 058, 421	761, 873	58, 521, 046
1952	38, 636	8, 048, 835	212, 684	31, 292, 506	458, 149	22, 263, 260	709, 469	61, 604, 601
1953								
North America: Canada	842	423, 949	169, 096	27, 129, 703	482, 179	23, 129, 921	652, 117	50, 683, 573
South America:								
Bolivia	828	369, 992	------	------	------	------	828	369, 992
Venezuela	4	2, 233	52	20, 020	------	------	56	22, 253
Total	832	372, 225	52	20, 020	------	------	884	392, 245

See footnotes at end of table.

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

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TABLE 3.—Asbestos (unmanufactured) imported for consumption in the United States, 1945–49 (average), 1950–52 (totals), and 1953–54, by countries and classes—Continued

[U. S. Department of Commerce]

Country	Crude (including blue fiber)		Mill fibers		Short fibers		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1953—Continued								
Europe:								
France			[2]	$188			[2]	$188
Italy	1	$1,340	3	6,321			4	7,661
Portugal	5	558					5	558
U. S. S. R.	108	12,000	217	24,000			325	36,000
United Kingdom	[3] 110	[3] 30,641	10	3,241			120	33,882
Total	224	44,539	230	33,750			454	78,289
Africa:								
Madagascar	1	371					1	371
Southern British Africa	619	186,116					619	186,116
Southern Rhodesia	9,157	3,155,355	833	247,373			9,990	3,402,728
Union of South Africa	25,778	4,253,838	481	90,592	171	$49,195	26,430	4,393,625
Total	35,555	7,595,680	1,314	337,965	171	49,195	37,040	7,982,840
Oceania: Australia	1,748	615,614			2	1,022	1,750	616,636
Grand total	39,201	9,052,007	170,692	27,521,438	482,352	23,180,138	692,245	59,753,583
1954								
North America: Canada	1,107	338,268	148,026	24,242,023	491,149	23,549,156	640,282	48,129,447
South America:								
Bolivia	166	74,736					166	74,736
Venezuela			47	7,943			47	7,943
Total	166	74,736	47	7,943			213	82,679
Europe:								
Finland					168	9,759	168	9,759
Germany, West	4	6,000	2	275			6	6,275
Italy			1	1,340	1	2,498	2	3,838
Malta, Gozo, and Cyprus					120	3,166	120	3,166
U. S. S. R.			292	32,442			292	32,442
United Kingdom	[3] 28	[3] 9,985	119	39,216	2	1,891	149	51,092
Total	32	15,985	414	73,273	291	17,314	737	106,572
Africa:								
British East Africa	166	36,499			53	5,394	219	41,893
Federation of Rhodesia and Nyasaland [4]	6,699	1,832,596	156	94,626	364	199,824	7,219	2,127,046
Southern British Africa	990	213,944	125	31,688			1,115	245,632
Union of South Africa	27,045	4,592,379	194	107,400	110	25,607	27,349	4,725,386
Total	34,900	6,675,418	475	233,714	527	230,825	35,902	7,139,957
Oceania: Australia	1,256	397,951					1,256	397,951
Grand total	37,461	[5] 7,502,358	148,962	[5] 24,556,953	491,967	[5] 23,797,295	678,390	[5] 55,856,606

[1] Includes 11 tons ($1,632) classified by U. S. Department of Commerce as amosite, crude; reclassified by the Bureau of Mines as mill fibers.
[2] Less than 1 ton.
[3] Data includes 7 tons of blue (crocidolite) crude, valued at $3,924 in 1953 and less than 1 ton, valued at $501 in 1954, believed to have originated in the Union of South Africa or Australia and processed in the United Kingdom.
[4] Believed to be all from Southern Rhodesia.
[5] Owing to changes in tabulating procedures by the U. S. Department of Commerce, data known not to be strictly comparable to earlier years.

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TABLE 4.—Asbestos (chrysotile) imported for consumption in the United States from Canada, by grades, 1945–49 (average) and 1950–54, in short tons

[U. S. Department of Commerce]

Grades	1945–49 (average)	1950	1951	1952	1953	1954
Crude No. 1	210	390	126	144	168	82
Crude No. 2	300	260	226	332	207	181
Other crudes	134	1,114	384	79	467	844
Spinning and textile fiber	17,822	24,417	22,463	24,112	19,417	18,319
Shingle fiber	69,695	83,640	104,419	98,577	86,540	72,242
Paper fiber	62,304	69,171	97,888	87,644	63,139	57,465
Short fiber	335,545	499,704	501,264	458,012	482,179	491,149
Total	486,010	678,696	726,770	668,900	652,117	640,282

TABLE 5.—Asbestos (chrysotile) imported for consumption in the United States from Southern Rhodesia,[1] by grades, 1945–49 (average) and 1950–54, in short tons

[U. S. Department of Commerce]

Grades	1945–49 (average)	1950	1951	1952	1953	1954 [1]
Crude No. 1	1,042	2,124	678	462	1,039	181
Crude No. 2	3,063	1,844	1,239	1,363	814	275
Spinning and textile fiber	40	556	25	177	730	156
Other crude	[2] 3,647	4,940	5,783	8,296	7,304	6,243
Shingle fiber	45	----------	----------	245	103	----------
Short fiber	6	----------	----------	----------	----------	364
Total	7,843	9,464	7,725	10,543	9,990	7,219

[1] Effective July 1, 1954, reported by the Department of Commerce as Federation of Rhodesia and Nyasaland. Believed to be all from Southern Rhodesia.
[2] Includes small amounts credited by U. S. Department of Commerce to Mozambique.

Exports.—Exports of raw asbestos in 1954 declined 38 percent compared with 1953, showing that the needs of foreign customers were being supplied more readily from foreign sources.

TABLE 6.—Asbestos and asbestos products exported from the United States, 1945–49 (average) and 1950–54

[U. S. Department of Commerce]

Year	Unmanufactured asbestos				Asbestos products	
	Domestic [1]		Foreign [2]		Domestic [1]	Foreign [2]
	Short tons	Value	Short tons	Value	Value	Value
1945–49 (average)	9,150	$1,466,584	1,260	$270,451	$8,978,844	$4,056
1950	18,980	3,646,828	1,910	437,556	8,097,192	49,949
1951	14,298	3,216,810	2,228	445,460	14,320,389	889
1952	10,265	2,550,065	459	120,905	13,027,739	1,118
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

[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.

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TABLE 7.—Asbestos and asbestos products exported from the United States, 1953–54, by kinds

[U. S. Department of Commerce]

Product	1953		1954	
	Quantity	Value	Quantity	Value
Unmanufactured asbestos:				
Crude and spinning fibers.....short tons	752	$252,748	286	$58,726
Nonspinning fibers.....do	1,260	242,182	438	100,227
Waste and refuse.....do	768	45,343	1,123	116,825
Total unmanufactured.....do	2,780	540,273	1,847	275,778
Asbestos products:				
Brake lining and blocks:				
Molded, semimolded, and woven	(1)	4,268,736	(1)	4,620,416
Clutch facing and lining.....number	1,241,409	900,725	1,138,760	879,450
Construction materials.....short tons	14,809	2,457,973	15,056	2,521,652
Pipe covering and cement.....do	2,161	592,054	2,094	635,224
Textiles, yarn, and packing.....do	1,006	2,013,852	1,387	2,434,904
Manufactures, n. e. c.	(2)	382,492	(2)	383,436
Total products		10,615,832		11,475,082

[1] Owing to changes in classification, values have been summarized; quantities not shown.
[2] Quantity not recorded.

TECHNOLOGY

A report stressed the need in Africa for better methods of removing grit and dust from asbestos fibers and for better methods of testing the dust content. The report [5] stated:

> It is important that separation and removal of impurities be accomplished with minimum breakage or weakening of the fibers. There is generally a penalty on grit and dust contents over 5 percent, and shipments are rejected as a rule if the impurities exceed 8 percent.

It was reported that sintered metal friction disks consisting chiefly of copper and graphite are being substituted to some extent for asbestos in brake linings of military tanks.

Details of the modern mill operated by Vermont Asbestos Mines Division of the Ruberoid Co. near Hyde Park, Vt., were described.[6]

At the Canadian Johns-Manville Corp. new mill at Asbestos, Quebec, an elaborate dust-collecting system has been developed. Dust control is a difficult problem facing asbestos-mill operators. Milling asbestos is a dry process, and the fiber and rock pass through a long succession of breakers, pulverizers, and screens. The dust consists of both granular and fibrous particles. All machines at the new Johns-Manville mill are so well equipped that the air within the mill is virtually dust free. Dust is so plentiful that its disposal requires a shed 200 feet long and 60 feet high in which floats settle in 8 graded sections at a rate of 140 tons a day. Over 1½ million cubic feet per minute of dusty air moves through the shed. From 80 to 95 percent of the microscopic dust that is not caught in the dust shed is removed with a Cottrell-type electric precipitator, which recovers about 60 tons per day of fine dust. A foreman and a staff of 10 men

[5] Rhodesian Mining Review, Reducing Impurities in Asbestos Fiber: Vol. 19, No. 3, March 1954, pp. 39–40.
[6] Work cited in footnote 3, p. 2.

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ACL Doc 10993 · Page 7 of 12
asbestosclaims.law/library/10993/7

are regularly employed to install and maintain dust-control equipment. A detailed description of the system was published.[7]

Much technical research has also been devoted to dust problems in the asbestos mills of Southern Rhodesia. The principal phases of the problem are control of dust inside the mill buildings, removal of dust by means of an exhaust system, and filtration of the dust-laden exhaust air. The design and operation of dust-control equipment at a Rhodesian plant was described.[8]

Further progress was reported in the manufacture of electric insulating tapes consisting of purified asbestos fiber reinforced with fiberglass. Several "Novabestos" tapes have been designed for special uses.[9]

WORLD REVIEW

World production of asbestos by countries for 1954 is shown in table 8. Official statistics are not complete, but estimates are included for unreported countries. Revisions for previous years have been made where new information has become available. World output for 1954 was slightly less than in 1953.

TABLE 8.—World production of asbestos by countries,[1] 1945–49 (average) and 1950–54, in short tons[2]

(Compiled by Helen L. Hunt)

Country [1]	1945–49 (average)	1950	1951	1952	1953	1954
North America:						
Canada (sales) [3]	595,715	875,344	973,198	929,339	911,226	924,116
United States (sold or used by producers)	26,163	42,434	51,645	53,864	54,456	47,621
Total	621,878	917,778	1,024,843	983,203	965,682	971,737
South America:						
Bolivia (exports)	117	183	348	513	810	33
Brazil	2,090	930	1,456	1,439	[4] 794	(5)
Chile	325	190	(5)	(5)	(5)	(5)
Venezuela	154	209	287	434	44	743
Total [6]	2,700	1,700	2,400	2,700	2,000	2,500
Europe:						
Finland [7]	8,297	12,069	13,062	6,724	12,047	7,853
France	950	8,219	7,814	8,338	10,251	11,795
Greece	18	33	37	28		2
Italy	11,854	23,626	24,925	26,387	22,484	25,955
Portugal	141	283	344	185	105	(5)
Spain	17	45	45	33		(5)
U. S. S. R. [6]	141,400	240,000	240,000	240,000	240,000	240,000
Yugoslavia	[8] 797	1,056	1,679	2,762	4,131	3,598
Total [6]	165,000	290,000	290,000	290,000	295,000	295,000
Asia:						
Cyprus	7,668	16,523	18,938	18,250	15,966	[9] 20,343
India	340	233	580	765	637	(5)
Iran				3	55	(5)
Japan	5,854	6,243	6,767	3,373	4,495	6,916
Korea	[8] 1,300	(5)	(5)	(5)	(5)	[10] 233
Taiwan (Formosa)	277	238	39	26		163
Turkey	196	270	88			50
Total [6]	19,000	25,000	29,000	25,000	28,000	35,000

See footnotes at end of table.

[7] Rozovsky, H., Air Handling and Dust Control at the Jeffrey Mine of Canadian Johns-Manville Company: Canadian Min. Jour., vol. 75, No. 11, November 1954, pp. 59–65.

[8] Benham, M. G., The Problem of Dust in Asbestos Milling: Rhodesian Min. Rev., vol. 19, No. 5, May 1954, pp. 47–49; No. 6, June 1954, pp. 47–53.

[9] Materials and Methods, Asbestos and Glass Form New Insulating Tapes: Vol. 40, No. 6, December 1954, p. 143.

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TABLE 8.—World production of asbestos by countries,[1] 1945–49 (average) and 1950–54, in short tons [2]—Continued

Country [1]	1945-49 (average)	1950	1951	1952	1953	1954
Africa:						
Bechuanaland			41	528	548	729
Egypt	640	287	1,375	66	220	(5)
French Morocco	560	563	666	635	600	597
Kenya	520	252	418	390	166	224
Madagascar	1	1	19	3	8	(5)
Southern Rhodesia	62,923	71,527	77,662	84,834	87,738	79,962
Swaziland	29,982	32,667	34,964	34,769	30,103	30,142
Union of South Africa	39,047	87,413	107,367	133,838	94,816	109,151
Total	133,674	192,710	222,511	255,064	214,200	[6] 221,000
Oceania:						
Australia	2,011	1,811	2,865	4,546	5,566	5,279
New Zealand		46	911	764		
Total	2,011	1,857	3,776	5,310	5,566	5,279
World total (estimate) [1]	950,000	1,425,000	1,575,000	1,550,000	1,500,000	1,525,000

[1] In addition to countries listed, asbestos is produced in Argentina, China, and Czechoslovakia. Estimates by authors of the chapter are included in the total.
[2] This table incorporates a number of revisions of data published in previous Asbestos chapters.
[3] Exclusive of sand, gravel, and stone (waste rock only), production of which is reported as follows: 1950, 48,007 tons; 1951, 33,762 tons; 1952, 35,317 tons; 1953, 21,118 tons; 1954, 26,429 tons.
[4] Produced in Bahia only (incomplete figure).
[5] Data not available; estimate by authors of chapter included in total.
[6] Estimate.
[7] Includes asbestos flour.
[8] Average for 1947–49.
[9] Exports.
[10] Excluding North Korea.

NORTH AMERICA

Canada.—Shipments of Canadian asbestos increased 1.4 percent in 1954 as compared with 1953; the increase was mainly in sale of shorts (table 9). As their average value was lower than in 1953, the total value increased less than 0.5 percent.

TABLE 9.—Sales of asbestos in Canada, 1953–54, by grades

[Dominion Bureau of Statistics]

	1953 [1]			1954 [1]		
	Short tons	Value [1]		Short tons	Value [1]	
		Total	Average per ton		Total	Average per ton
Grade:						
Crudes	781	$837,623	$1,072.50	725	$645,608	$890.49
Fibers	326,340	56,226,083	172.29	326,653	56,724,585	173.65
Shorts	584,105	28,989,189	49.63	596,738	29,039,019	48.66
Total	911,226	86,052,895	94.44	924,116	86,409,212	93.50
Rock mined	13,912,839			14,793,760		
Rock milled	11,189,027			11,394,571		

[1] Canadian currency.

Lake Asbestos of Quebec, Ltd., subsidiary of American Smelting & Refining Co., started draining Black Lake. The asbestos deposit which lies beneath the lake has been explored extensively. It will be mined by open-pit methods.

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Mill capacity was increased considerably in Quebec. The new Johnson's Co. mill came into production in 1954, and the new Normandie mill of the Asbestos Corp., Ltd., was nearly completed by the end of the year. A large area of the Normandie deposit had been stripped, and open-cut mining had begun on two benches.

Further progress was made in 1954 on the new Jeffrey mill of Canadian Johns-Manville Corp., Ltd., the largest asbestos mill in the world. It is in operation although not completed. When completed, it will have an annual capacity of 600,000 tons of fiber. It has been described in some detail in the press.[10]

Quebec Asbestos Corp. reported discovery of a new extensive asbestos deposit about 3 miles from its present East Broughton operation. Production facilities were in the planning stage.

A crocidolite (blue asbestos) deposit was discovered in New Quebec. No information was available concerning the extent or nature of the deposit.

Deposits of asbestos of the low-iron Arizona type, consisting of cross-fiber chrysotile veins in limestones of the Grenville Series, have been found at various points in the Ottawa River Valley between Montreal and Ottawa. On one of these deposits, about 24 miles from Buckingham, Quebec, Eastern Asbestos Co., Ltd., of Montreal began an extensive drilling and drifting exploratory program. Asbestos veins over a wide area and to a depth of at least 200 feet are reported.

The Munro mine of the Canadian Johns-Manville Corp. near Matheson, Ontario, has been operated since 1950 as an open pit, but considerable progress was made in 1954 on a shaft-sinking project for development of underground facilities.

A new mill having a daily capacity of 500 tons of mill rock was completed by Cassiar Asbestos Corp., Ltd., and began operation in 1954, at McDame Creek in northern British Columbia. The deposit worked by this company contains an exceptionally high content of spinning-grade asbestos of the low-iron type. Substantial quantities are reaching United States markets. According to press reports, an aerial tramway 15,000 feet long, to carry rock from mine to mill, was under construction in 1954.[11]

EUROPE

Yugoslavia.—Since World War II the Yugoslav Government stimulated development of several asbestos deposits, the most important of which is the Stragari. The asbestos industry of the country has been described in some detail.[12]

ASIA

Cyprus.—Short-fiber chrysotile was produced in Cyprus in substantial quantities. A description of the asbestos mining industry has appeared.[13]

[10] Walkom, L. K., New Shaft, Unusual New Mill Feature Expansion at World's Largest Asbestos-Producing Property: Canadian Min. Jour., vol. 75, No. 10, October 1954, pp. 57–63.
Western Miner and Oil Review, The Story of Asbestos: Vol. 27, No. 11, November 1954, pp. 79–81.
[11] Northern Miner, Toronto, Impressive News for Cassiar Asbestos: Vol. 41, No. 30, Oct. 14, 1954, pp. 1,
[12] Bureau of Mines, Mineral Trade Notes: Vol. 37, No. 3, September 1953, pp. 42–47.
[13] See work cited in footnote 12, p. 38.

AFRICA

Southern Rhodesia.—Production of asbestos in Southern Rhodesia was nearly 9 percent less in 1954 than in 1953 (table 10). The decline in demand for asbestos in the latter part of 1953 continued into 1954 and is reflected in the decrease in value of the production for 1954.

TABLE 10.—Asbestos produced in Southern Rhodesia, 1950–54

Year	Short tons	Value	Year	Short tons	Value
1950	71, 527	£4, 615, 490	1953	87, 739	£6, 542, 731
1951	77, 663	5, 452, 108	1954	79, 962	5, 922, 724
1952	84, 834	6, 651, 975			

A new asbestos mill at the Temeraire mine, Mashaba, was formally opened in November 1954. It is the second largest asbestos mill in Southern Rhodesia. The Canadian Johns-Manville Corp. has the controlling interest in this operation.[14]

Canadian Overseas Asbestos Corp. was being organized in 1954. A plan contemplated was to erect a custom mill to clean and grade the output of the smaller Rhodesian asbestos mines and to ship the asbestos so prepared to India. The project had not advanced beyond the planning stage.[15]

Union of South Africa.—In 1953 and early in 1954 the supply of asbestos in the Union exceeded the demand, and buying became increasingly selective. As most of the small producers lacked the milling facilities necessary to meet specifications, many mines and mills suspended activity. However, during 1954 the demand for asbestos from the Union of South Africa improved, resulting in a 15-percent increase in production and a 31-percent increase in exports.

TABLE 11.—Asbestos produced in and exported from the Union of South Africa, 1950–54

Year	Production (short tons)			Exports	
	Transvaal	Cape Province	Total	Short tons	Value
1950	72, 203	15, 211	87, 414	70, 609	£3, 475, 200
1951	89, 290	18, 078	107, 368	89, 735	5, 056, 143
1952	109, 398	24, 441	133, 839	106, 576	6, 899, 086
1953	73, 934	20, 883	94, 817	71, 791	4, 158, 476
1954	81, 015	28, 136	109, 151	94, 322	5, 453, 116

The South African Bureau of Standards appointed a committee to establish better grading and classification of fibers in an effort to improve service to overseas markets.

An article [16] on economic problems facing the smaller asbestos producers in the Union was published. Improved processing and grading, better marketing facilities, and development of new uses were some of the problems discussed.

[14] Mining World, J–M Opens Asbestos Mines in Rhodesia: Vol. 17, No. 1, January 1955, p. 51.
[15] Chemical Age (London), Canadian Investment in Rhodesia: Vol. 70, No. 1820, May 29, 1954, p. 1204. Rhodesian Mining Review, Canadian Interest in S. R. Asbestos: Vol. 19, No. 5, May 1954, p. 24.
[16] Sinclair, W. E., The Economic Aspect of Asbestos Production in the Union: South African Min. and Eng. Jour., vol. 55, p. 1, No. 3203, June 1954, pp. 643–649.

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TABLE 12.—Asbestos produced in the Union of South Africa, 1950–54, by varieties and sources, in short tons

Variety and source	1950	1951	1952	1953	1954
Amosite (Transvaal)	42,393	54,053	63,280	38,258	45,922
Chrysotile (Transvaal)	14,334	19,509	24,970	18,840	19,373
Blue (Transvaal)	15,387	15,581	20,294	16,824	15,610
Blue (Cape)	15,211	18,078	24,441	20,883	28,136
Anthophyllite (Transvaal)	89	147	854	12	110
Total	87,414	107,368	133,839	94,817	109,151

Bechuanaland.—The Marline Chrysotile Asbestos Corp., Ltd., had a substantial investment in mining and milling facilities at Lobatsi. The deposit consists of cross-fiber veins in dolomite associated with intrusive diabase. Drill records indicated that rock over a large area contains about 4 percent fiber. About 25 percent of that produced was of spinning grade. A mill built on the property has a capacity of 200 tons of fiber a month.

Swaziland.—The Havelock mine was first worked as an open pit but was converted to underground operation in 1948. The fiber-bearing rock is hoisted from stopes through a 1,280-foot shaft dipping 40° S. Details of the operation were published.[17]

OCEANIA

Australia.—Production of crocidolite (blue asbestos) at Wittenoom Gorge, Western Australia, was considerably higher in 1953 than in 1952. Output could have been increased further if marketing conditions were more favorable. Mining and transportation costs were so high that prices comparable with those of imported fibers were difficult to maintain. Australian Blue Asbestos, Ltd., applied for a protective tariff, which was opposed by asbestos consumers.

[17] Mining Journal (London), Operation at the Havelock Asbestos Mine, Swaziland: Vol. 243, No. 6212, September 1954, pp. 288–289.

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