



HISTORY OF
CAREY CANADA INC.

Carey-Canadian Mines, Ltd. was incorporated in the Dominion of Canada on 2/14/55 as an independent corporation. It was not a successor to any other corporation. Carey-Canadian Mines, Ltd. was a wholly-owned subsidiary of the Philip Carey Manufacturing Company.

Supplementary Letters of Patent (the Canadian equivalent of Articles of Incorporation) were filed on 2/25/64, 12/30/64 and 10/26/77.

The Celotex Corporation acquired Carey-Canadian Mines, Ltd. as a wholly-owned subsidiary, as a result of the merger between The Celotex Corporation and Panacore Corporation, effective June 30, 1972.

On 10/26/77, Carey-Canadian Mines, Ltd. changed its name to Carey Canadian Mines, Ltd.--Les Mines Carey Canadiennes Ltée. On 4/30/79, Carey-Canadian Mines, Ltd.--Les Mines Carey Canadiennes Ltée., changed its name to Carey Canada Inc.

Carey Canada Inc. ceased its mining and milling operations in April, 1986, and remains an independent Canadian subsidiary of The Celotex Corporation.

Exhibit "A"

CAREY-CANADIAN MINES, LIMITED

EAST BROUGHTON STATION
QUEBEC, CANADA



ASBESTOS FIBRE

REPLY TO:
P.O. BOX 15005
CINCINNATI, OHIO 45215

September 21, 1964

Bulletin No. 189
(Cancels No. 134)

ASBESTOS FIBRE PRODUCT INFORMATION

<u>Fibre Grade</u>	<u>Characteristics</u>	<u>Uses</u>
3T	Medium	Spinning fibre.
4K-1	Medium	Acoustical and fire-proofing cements, asbestos cement products.
4K-5	Crudy	Asbestos cement products.
4T-1	Medium	Asbestos cement, paper and millboard.
5D-1	Medium	Asbestos millboard, asbestos papers and felts, acoustical and fireproofing cements, compressed asbestos sheet packing.
5D-5	Crudy	Asbestos Cement products.
5K-1	Medium	Asbestos millboard, asbestos papers and felts, friction materials, compressed asbestos sheet packing.
5K-5	Crudy	Asbestos cement products, friction materials.
5R-01	Open	Compressed asbestos sheet packing.

Exhibit "B"

<u>Fibre Grade</u>	<u>Characteristics</u>	<u>Uses</u>
5R-1	Medium	Asbestos millboard, asbestos paper and felt, fireproofing and refractory cements, friction materials, cold molded plastics.
5R-5	Crudy	Asbestos cement products, friction materials.
6D-01	Open	Asbestos felt.
6D-1	Medium	Acoustical plaster, asbestos millboard, asbestos paper and felt, fireproofing, insulation and refractory cements, friction material, cold molded plastics, compressed asbestos sheet packing.
6D-5	Crudy	Asbestos cement products, friction materials.

<u>Short Grades</u>	<u>Characteristics</u>	<u>Uses</u>
TD-1	High bulk	Acoustical plaster, asphalt compounds, fireproofing cement, compressed asbestos sheet packing.
TD-3	Medium bulk	Acoustical, fireproofing and insulation cements, friction materials, cold molded plastics.
TD-5	Low bulk	Friction materials.
TF	Medium bulk	Asphalt compounds, caulking and sealers, fibrated greases, friction materials, compressed asbestos sheet packing.
TH	Medium bulk	Asphalt compounds, caulking and sealers.
TKS-1	High bulk	Asphalt compounds.
TK-3	Medium bulk	Asphalt compounds, caulking and sealers, fibrated greases, friction material.
TMS-1	High bulk	Acoustical plaster, asphalt compounds, caulking and sealers, fireproofing cement, friction materials.
TM-3	Medium high bulk	
TM-5	Medium bulk	Acoustical plaster, asbestos millboard, asbestos paper and felt, asphalt compounds, caulking and sealers, insulation and refractory cements, friction materials, fibre pipe, cold molded plastic, radiator sealing compound, welding rods.

<u>Short Grades</u>	<u>Characteristics</u>	<u>Uses</u>
7M-90	Low bulk	Insulation and refractory cements.
7RS-1	High bulk	Asphalt compounds, caulking and sealers.
7R-3	Medium bulk	Adhesives, asphalt compounds caulking and sealers, asphalt vinyl and rubber floor tile, oil well muds, fibre pipe, welding rods.
7TS-1	High bulk	Asphalt compounds, caulking and sealer compounds.
7T-5	Medium bulk	Adhesives, asphalt compounds, caulking and sealers, insulation cement, rubber compounds, magnesite flooring, cold molded and pre-mix polyester molded plastics, radiator sealing compound, welding rods.
7RF-9	Medium bulk	Caulking and sealers, dry wall joint cement, fibrated grease, magnesite flooring, oil well muds, plastic molding compounds, textured paint, radiator sealing compound, sheet packing, welding rods.
7RF-10	High bulk	Caulking and sealers, dry wall joint cement, fibrated greases, textured paint.
7TF-8	Low bulk	Caulking and sealers, dry wall joint cement, plastic molding compounds, textured paints.

Short Grades

Characteristics

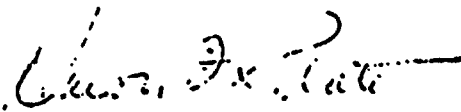
Uses

7IF-22

Very low bulk

Dry wall joint cements,
plastic molding compounds,
textured paints.

It is difficult to say that Carey-Canadian has an exact equivalent to a competitor, or a competitor matching up exactly with our asbestos grades. However, there are similarities close enough whereby the user with appropriate adjustment in his formulae may arrive at the desired results when comparing asbestos within the same fibre length and degree of surface area.


Harold F. X. Plate
Assistant Sales Manager

CAREY CANADA'S NORTH AMERICA DISTRIBUTOR LIST

Archway Chemical & Supply Inc.
St. Louis, MO; N. Kansas City, MO; Memphis, TN

John K. Bice Company, Inc.
Los Angeles, CA

Canada Colors & Chemicals Ltd.
Don Mills, ON, Canada; Hamilton, ON, Canada; New Westminster, B.C., Canada;
Ville St-Laurent, P.Q., Canada; Calgary, AB, Canada; Edmonton, AB, Canada

Carmona Chemical Company
San Francisco, CA

Chemcial Distributors, Inc.
Portland, OR; Seattle, WA

Commercial Chemicals, Inc.
Buffalo, NY

Cron Chemical Corp.
Dallas, TX; Houston, TX; New Orleans, LA

A. E. Fleming Company, Inc.
Warren, MI

McCann-Shields Paint Company
Pittsburgh, PA

Peltz Rowley Chemical Co.
Philadelphia, PA

H. M. Royal, Inc.
Trenton, NJ

Donald McKay Smith, Inc.
Lakewood, OH

Smith Chemical & Color Company
Jamaica, L.I., NY

Exhibit "C"

CAREY-CANADIAN ASBESTOS
P. O. BOX 15070
CINCINNATI, OHIO 45215

5 April 1972
Bulletin No.
381

TO: ALL U.S. DIRECT CUSTOMERS

SUBJECT: MATERIAL SAFETY DATA SHEET

Please note enclosed Material Safety Data Sheet covering our Canadian Chrysotile Asbestos fibre.

Please forward this data sheet to those in your organization who are responsible for the safety and health of the employees.

If you need additional copies, please let us know.

Enclosure

Exhibit "D"

Section I

MANUFACTURER'S NAME

CAREY-CANADIAN MINES, LTD.

STREET ADDRESS

P. O. BOX 190

CITY, STATE, AND ZIP CODE

EAST BROUGHTON STATION, QUEBEC, CANADA

EMERGENCY TELEPHONE NO.

418 - 426-3050

CHEMICAL NAME AND SYNONYMS

Hydrous Magnesium Silicate

TRADE NAME

None

CHEMICAL FAMILY

Fibrous Mineral Silicate (Chrysotile)

FORMULA

$3MgO \cdot 2SiO_2 \cdot 2H_2O$

PAINTS, PRESERVATIVES, & SOLVENTS

PIGMENTS

Not applicable

%

TLV
(Units)

SOLVENTS

Not applicable

%

TLV
(Units)

CATALYST

Not applicable

ADDITIVES

Not applicable

VEHICLE

Not applicable

OTHERS

Not applicable

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Chrysotile Asbestos Fibre

Approx.

100

For TLV see attached copy Federal Register 12/7/71, Vol. 36, No. 234 -

four time weighted average 5 fibres/ML greater than 5 microns in length. Concentrations above 5 fibres/ML not to exceed 10 fibres/ML permitted for 15 minutes in an hour for up to 5 hours per 8 hour day.

BOILING POINT (°F.)

Not

Applicable

SPECIFIC GRAVITY (H₂O=1)

Not

Applicable

VAPOR PRESSURE (mm Hg.)

"

"

PERCENT VOLATILE BY VOLUME (%)

"

"

VAPOR DENSITY (AIR=1)

"

"

EVAPORATION RATE (H₂O=1)

"

"

SOLUBILITY IN WATER

"

"

APPEARANCE AND ODOR

"

"

FLASH POINT (METHENOL)

FLAMMABLE LIMITS

Exp

Lim

EXTINGUISHING MEDIA

Non-flammable

SPECIAL FIRE FIGHTING PROCEDURES

"

UNUSUAL FIRE AND EXPLOSION HAZARDS

"

THRESHOLD LIMIT VALUE

See Section II and attached OSHA regulation effective 12/7/71.

EFFECT OF OVEREXPOSURE

Prolonged continuous exposure to asbestos dust may cause impairment to the respiratory system.

AGENCY AND FIRST AID PROCEDURES

Not applicable

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

x

Avoid breathing excessive dust.

COMPATIBILITY (Materials to avoid)

None

DANGEROUS DECOMPOSITION PRODUCTS

None

DANGEROUS
POLYMERIZATION

MAY OCCUR

CONDITIONS TO AVOID

WILL NOT OCCUR

x

Avoid breathing excessive dust

ACTIONS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Vacuum clean spillage. Repair broken

bags. If sweeping is necessary, wet down spillage. Use approved respiratory equipment when required.

WASTE DISPOSAL METHOD

Place waste in closed containers. Dispose of waste in closed containers.

PERSONAL PROTECTION (Specify type)

U.S. Bureau of Mines Approved Respirator - See OSHA Part 1910 - 12/7/71.

VENTILATION

LOCAL EXHAUST

SPECIAL

MECHANICAL (General) CONTROL WITH MECHANICAL DUST COLLECTION EQUIPMENT TO WITHIN TLV.

PROTECTIVE GLOVES

EYE PROTECTION

ADDITIONAL PROTECTIVE EQUIPMENT

Use respiratory equipment per OSHA Part 1910 - 12/7/71.

ACTIONS TO BE TAKEN IN HANDLING AND STORAGE

Maintain good housekeeping practices.

Vacuum clean waste and place in closed containers.

REMARKS

He estimated, Table G-2 reads as follows:

STATE (GENERAL) DATA

[illegible]

Note: Convention 1945-
 1946-1947-1948-1949-1950-1951-1952-1953-1954-1955-1956-1957-1958-1959-1960-1961-1962-1963-1964-1965-1966-1967-1968-1969-1970-1971-1972-1973-1974-1975-1976-1977-1978-1979-1980-1981-1982-1983-1984-1985-1986-1987-1988-1989-1990-1991-1992-1993-1994-1995-1996-1997-1998-1999-2000-2001-2002-2003-2004-2005-2006-2007-2008-2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100-2101-2102-2103-2104-2105-2106-2107-2108-2109-2110-2111-2112-2113-2114-2115-2116-2117-2118-2119-2120-2121-2122-2123-2124-2125-2126-2127-2128-2129-2130-2131-2132-2133-2134-2135-2136-2137-2138-2139-2140-2141-2142-2143-2144-2145-2146-2147-2148-2149-2150-2151-2152-2153-2154-2155-2156-2157-2158-2159-2160-2161-2162-2163-2164-2165-2166-2167-2168-2169-2170-2171-2172-2173-2174-2175-2176-2177-2178-2179-2180-2181-2182-2183-2184-2185-2186-2187-2188-2189-2190-2191-2192-2193-2194-2195-2196-2197-2198-2199-2200-2201-2202-2203-2204-2205-2206-2207-2208-2209-2210-2211-2212-2213-2214-2215-2216-2217-2218-2219-2220-2221-2222-2223-2224-2225-2226-2227-2228-2229-2230-2231-2232-2233-2234-2235-2236-2237-2238-2239-2240-2241-2242-2243-2244-2245-2246-2247-2248-2249-2250-2251-2252-2253-2254-2255-2256-2257-2258-2259-2260-2261-2262-2263-2264-2265-2266-2267-2268-2269-2270-2271-2272-2273-2274-2275-2276-2277-2278-2279-2280-2281-2282-2283-2284-2285-2286-2287-2288-2289-2290-2291-2292-2293-2294-2295-2296-2297-2298-2299-2300-2301-2302-2303-2304-2305-2306-2307-2308-2309-2310-2311-2312-2313-2314-2315-2316-2317-2318-2319-2320-2321-2322-2323-2324-2325-2326-2327-2328-2329-2330-2331-2332-2333-2334-2335-2336-2337-2338-2339-2340-2341-2342-2343-2344-2345-2346-2347-2348-2349-2350-2351-2352-2353-2354-2355-2356-2357-2358-2359-2360-2361-2362-2363-2364-2365-2366-2367-2368-2369-2370-2371-2372-2373-2374-2375-2376-2377-2378-2379-2380-2381-2382-2383-2384-2385-2386-2387-2388-2389-2390-2391-2392-2393-2394-2395-2396-2397-2398-2399-2400-2401-2402-2403-2404-2405-2406-2407-2408-2409-2410-2411-2412-2413-2414-2415-2416-2417-2418-2419-2420-2421-2422-2423-2424-2425-2426-2427-2428-2429-2430-2431-2432-2433-2434-2435-2436-2437-2438-2439-2440-2441-2442-2443-2444-2445-2446-2447-2448-2449-2450-2451-2452-2453-2454-2455-2456-2457-2458-2459-2460-2461-2462-2463-2464-2465-2466-2467-2468-2469-2470-2471-2472-2473-2474-2475-2476-2477-2478-2479-2480-2481-2482-2483-2484-2485-2486-2487-2488-2489-2490-2491-2492-2493-2494-2495-2496-2497-2498-2499-2500-2501-2502-2503-2504-2505-2506-2507-2508-2509-2510-2511-2512-2513-2514-2515-2516-2517-2518-2519-2520-2521-2522-2523-2524-2525-2526-2527-2528-2529-2530-2531-2532-2533-2534-2535-2536-2537-2538-2539-2540-2541-2542-2543-2544-2545-2546-2547-2548-2549-2550-2551-2552-2553-2554-2555-2556-2557-2558-2559-2560-2561-2562-2563-2564-2565-2566-2567-2568-2569-2570-2571-2572-2573-2574-2575-2576-2577-2578-2579-2580-2581-2582-2583-2584-2585-2586-2587-2588-2589-2590-2591-2592-2593-2594-2595-2596-2597-2598-2599-2600-2601-2602-2603-2604-2605-2606-2607-2608-2609-2610-2611-2612-2613-2614-2615-2616-2617-2618-2619-2620-2621-2622-2623-2624-2625-2626-2627-2628-2629-2630-2631-2632-2633-2634-2635-2636-2637-2638-2639-2640-2641-2642-2643-2644-2645-2646-2647-2648-2649-2650-2651-2652-2653-2654-2655-2656-2657-2658-2659-2660-2661-2662-2663-2664-2665-2666-2667-2668-2669-2670-2671-2672-2673-2674-2675-2676-2677-2678-2679-2680-2681-2682-2683-2684-2685-2686-2687-2688-2689-2690-2691-2692-2693-2694-2695-2696-2697-2698-2699-2700-2701-2702-2703-2704-2705-2706-2707-2708-2709-2710-2711-2712-2713-2714-2715-2716-2717-2718-2719-2720-2721-2722-2723-2724-2725-2726-2727-2728-2729-2730-2731-2732-2733-2734-2735-2736-2737-2738-2739-2740-2741-2742-2743-2744-2745-2746-2747-2748-2749-2750-2751-2752-2753-2754-2755-2756-2757-2758-2759-2760-27

* Difference of particles per cubic foot of air, based on
temperature, is corrected by the following formula:

1966 International of Communism came in the formality
of the National Council of the Communist Party, ex-
posed to the world press with other people have been
linked to the conspiracy.

1. The results of the present study method at
the University of Michigan

On March 22, 1951, the following information was received from the
Federal Bureau of Investigation, New York City, New York:

Acoustic density (micro)	Percent reading
9	60
2.5	75
2.6	85
2.8	95
10	0

The above comments under this entry refer to the use of an Anti-Dumping. If the exporting nation of steel from China remains with a trade barrier of 100% on steel to the United States in the future for consumers to be able to

7. A new #1010374 is added to Part 1010. The new #1010374 reads as follows:

6 1210.02a A-Lecture dist.

(u) The 6-hour time-weighted average airborne concentration of radiation dust to which employees are exposed shall not exceed 6 grains per cubic foot greater than 5 percent in month, as determined by the measurements their normal 40-hour workweek (a minimum of 160 hours) plus to contract the duration. Concentration shall be above 6 grains per cubic foot but not to exceed 10 grains per cubic foot may be permitted up to a total of 15 hours in a month for up to 5 hours in a 6-hour day.

(b) [REDACTED]

be used to meet the expense of the pre-
sented in paragraph (a) of this section.
Where such compensation shall not be
feasible, or to the extent that it is
consideration being made by
paragraph (a) of this section, such
provision shall be provided
and used in accordance with paragraph
(c) of this section.

(c) (1) (i) When the limits of exposure to asbestos dust prescribed in paragraph (a) of this section are exceeded and when engineering controls required by paragraph (b) of this section are not feasible or do not otherwise reduce the concentration of asbestos dust below those prescribed in paragraph (a) of this section, the employer shall engage the use of respiratory protective devices. The selection of respiratory protective devices shall be based on those specified in the following subparagraphs of this paragraph (c).

(11) The employee must require that each employee to a) use respiratory protective device before each use in order to insure a proper fit according to the manufacturer's instructions. The employer shall further require for collective training or supervision of employees in the testing of respiratory protective devices for fit before their use.

(2) For an atmosphere containing not more than 25 fibers per milliliter greater than 5 microns in length over an 8-hour average, or more than 50 fibers per milliliter over any part of 15 minutes, a reusable or single-use other type respirator, operating with negative pressure during the intended time of use, is approved by the U.S. Bureau of Mines under the provisions of 29 C.F.R. Part 14 (Bureau of Mines *Coalmine Act*), or a valveless respirator providing equivalent protection, shall be used.

(3) Not to anywhere containing not more than 250 liters per million (or less than 5 meters in length over an 11-hour average, or less than .05 liters per milliliter over any period of 15 minutes, a powered filter passive pressure respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 1; Bureau of Mines Schedule 21-J) and be used.

(4) For an atmosphere containing more than 2% steam, for example, more than 3 inches in length over an hour requires a type C positive pressure supplied-air respirator approved by the U.S. Bureau of Mines under the provisions of 30 CFR Part 12, Bureau of Mines Safety Code 12.1 and 12.2.

(d) The employer shall establish a requester program in accordance with the requirements of Section 104.04. The program shall be in place for January 1, 2007.

(c) The regulations provided that compliance shall be subject to periodic check, if desired, by the local authority.

(d) (1) When an employee has employees who are expected to work in short periods the hours present in a calendar month are:

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1862. It is a very long letter, and it contains a great deal of information about the state of the country at that time. It is a very important document, and it is one of the most interesting documents in the collection.

comply with the requirements of these subparagraphs relating to the evidence involved, and instruments of that nature are in addition to those prescribed in paragraph (b) of this section.

(2) All kinds of power-operated tools which produce exhaust dust such as, but not limited to, saws, grinders, abrasive wheels, and drills can be provided with local exhaust ventilation and dust collectors in accordance with the American National Standard Pneumatics Code covering the Design and Operation of Local Exhaust Systems, ANSI Z92-1971.

(3) Employees exposed to the spraying of solvents or the demolition of pipes, structures, or equipment covered or insulated with asbestos shall be provided with temporary protective devices in accordance with paragraph (c)(3) of this section.

(c) Asbestos cement roofing, ceilings, floor, and plaster shall be removed in closed boxes or other containers.

(f) ~~Asbestos~~ waste and scrap shall be collected and disposed of in sealed bags or other containers.

(g) All cleanup of asbestos dust and blowing shall be performed by vacuum cleaners. No dry sweeping shall be performed.

3. Section 1510.12 is amended by changing paragraph (a) in order to apply the emergency security procedure in the new § 1510.52a, which is published in this document, to construction work which is subject to the Act. The amendment is necessary in light of the rule of mandatory construction set forth in § 1510.5(c). As amended, § 1510.12 reads as follows:

§ 1510.12 Construction work.

(n) (1) Adoption and extension of established safety and health standards for construction. The two-Grade program by Part 1515 of this title and in effect on April 24, 1971, are adopted as occupational safety or health standards under section (16) of the Act and shall apply, according to the provisions thereof, to every employment and place of employment of every employee engaged in construction work. Each employer shall protect the employment and places of employment of each of his employees engaged in construction work by conforming with the minimum standards prescribed by this part.

(2) The standards presented in § 1512.55(c) of this title shall apply in the case of the exposure of any employee in construction work to airborne asbestos dust.

Effective date. These amendments shall become effective immediately upon publication in the Federal Register (12-7-71).

[illegible]

Printed at Washington, D.C. This is
copy of B-100-107-1571.

A. C. GOSWAMI,
Assistant Secretary to the
International Labour Office

To be a valid assay, the percent salicin recovery should be 100±2 percent.

(6) *Assay.* Potency is directed in § 141.501 of this chapter, using a 0.5 percent potassium bromide dry preparation as described in paragraph (b) (1) of that section.

(7) *Certification.* Potency is directed in § 141.502(a) of this chapter.

§ 150.11 Minocycline hydrochloride capsules.

(a) *Requirements for certification.*

(1) *Standards of identity, strength, quality, and purity.* Minocycline hydrochloride capsules are composed of minocycline hydrochloride and one or more suitable and harmless ingredients and diluents chosen in a suitable manner. Each capsule contains minocycline hydrochloride equivalent to 100 milligrams of minocycline. Its potency is a minimum of 95 percent and not more than 105 percent of the number of milligrams of minocycline that is represented to contain. Its relative content is not more than 12 percent. The minocycline hydrochloride is of conformance to the standards prescribed by § 150.1(a) (1).

(2) *Labeling.* It shall be labeled in accordance with the requirements in § 149.3 of this chapter.

(3) *Assay for certification; samples.* In addition to complying with the requirements in § 149.2 of this chapter, each manufacturer shall submit:

(a) Samples of 10 in and 100 mg capsules.

(b) The minocycline hydrochloride used in making the batch for potency, safety, moisture, and minocycline content, identity, and certification.

(c) The batch for potency and moisture.

(d) Samples required:

(a) The minocycline hydrochloride used in making the batch for potency, each containing approximately 300 milligrams.

(b) The batch: A minimum of 30 capsules.

(c) *Tests and methods of assay.*—(1) *Potency.* Potency is directed in § 141.111 of this chapter, providing the sample for assay is received from a representative lot number of a minocycline hydrochloride capsule. The assay is performed by the hydrochloride salt to form a weak solution of concentrated ammonium containing not less than 100 milligrams of minocycline per milliliter of solution. Blend for 3 to 5 minutes in a mortar an aliquot and further add 0.5% potassium phosphoric acid, pH 4.0 (solution 4), to the solution. Concentration of 0.05 milligrams of minocycline per milliliter (continued).

(2) *Moisture.* Potency is directed in § 141.502 of this chapter.

It is submitted by the manufacturer concerning the relative potency data have been evaluated. Since the conditions pre-

sumable to provide for its certification have been completed with and since not deviation in its production is in the future, notice and public hearing and delayed effective date are not prerequisites to this promulgation.

Effective date. This order shall be effective upon publication in the *Federal Register* (12-7-71).

(Sec. 277, 50 Stat. 463, as amended; 21 U.S.C. 357)

Dated: November 21, 1971.

H. E. SHIMON,
Director, Bureau of Drugs.

[FR Doc. 71-1772 Filed 12-6-71; 9:45 am]

TUESDAY

Chapter XIII—Bureau of Labor Standards, Department of Labor

PART 1516—SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

Standard for Exposure to Asbestos Dust

Pursuant to section 4(b) (2) of the Williams-Steiger Occupational Safety and Health Act of 1970 (81 Stat. 1362, 29 U.S.C. 655), 1516.15 of Title 29, Code of Federal Regulations is hereby amended in the manner indicated below in order to provide a new standard limiting the exposure of workers to asbestos dust. The new standard limiting the exposure of workers to asbestos dust is that related under section 6(a) of the Williams-Steiger Occupational Safety and Health Act of 1970 and published in the *Federal Register* of this date. It is amended to be hereby declared to be more effective than that previously provided under § 1516.15 to the extent that it requires minimum levels of exposure to asbestos dust. Therefore, by operation of section 4(b) (2) of the Act the new standard issued under section 6(a) supersedes the construction safety standard relating to exposure to asbestos dust.

Section 1516.15 is hereby amended by adding a new part (c) to read as follows:

§ 1516.15 *Asbestos dust, fibers, dusts, and mist.*

(c) Paragraphs (a) and (b) of this regulation apply to the exposure of employees to asbestos dust in a workplace any employee is exposed to asbestos dust the requirements of § 1516.15 of this title shall apply.

Effective date. This amendment shall become effective upon publication in the *Federal Register* (12-7-71).

(Sec. 270 (2), 24 Stat. 159, 25 U.S.C. 650; Secretary's Order No. 22-71, 25 Stat. 1592)

Signed at Washington, D.C., this 22 day of December 1971.

G. C. GUNTER,
Assistant Secretary of Labor.
[FR Doc. 71-1763 Filed 12-6-71; 9:45 am]

Chapter XVII—Occupational Safety and Health Administration, Department of Labor

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Emergency Standard for Exposure to Asbestos Dust

Pursuant to section 6(a) of the Williams-Steiger Occupational Safety and Health Act of 1970 (81 Stat. 1362, 29 U.S.C. 655), Part 1910 of Title 29, Code of Federal Regulations (29 CFR 1910.1000, May 29, 1971) is hereby amended in the manner indicated below in order to provide an emergency standard dealing with the exposure of employees to asbestos dust.

In light of increasing information on the results of exposure of employees to airborne asbestos dust, including recent studies by the National Institute for Occupational Safety and Health and others, and recommendations by the American Conference of Governmental Industrial Hygienists (ACGIH), it is hereby determined that (1) exposure under the present standard for asbestos dust in Table G-3, § 1910.1000, of 12 fibers per cubic centimeter greater than 5 microns in length or 2 million particles per cubic foot of air, which is derived from an established Federal standard promulgated under the Federal Safety and Health Act on May 29, 1970, constitutes a grave danger to employees exposed to this 3-hour time-weighted average concentration; and that (2) an emergency standard is necessary to protect workers from this excessive exposure. The National Institute for Occupational Safety and Health concurs that the proposed change in the asbestos dust standard recommended by the American Conference of Governmental Industrial Hygienists is based on the substantial basis for the emergency standard.

Such a change in the standard will be commensurate with section 6(a) of the Federal Safety and Health Act. Any notice of proposed rulemaking under section 6(a) will also notice of the emergency standard as a proposed rule and the effect of the proposed rulemaking process shall have no effect in the event of a proposed rulemaking (b) and (c) of section 6(a) relating to the exposure of employees to asbestos dust.

Part 1910 is amended as follows:

1. Table G-3 shall be § 1910.1000 (29 CFR 1910.1000, Apr. 12, 1971) is hereby amended by deleting the following:

Asbestos—12 fibers per cubic centimeter greater than 5 microns in length or 2 million particles per cubic foot of air.

CAREY-CANADIAN ASBESTOS
P. O. BOX 15070
CINCINNATI, OHIO 45215

27 July 1971
Bulletin No.
368

TO: DISTRIBUTORS
DIRECT CUSTOMERS
SALESMEN

SUBJECT: CAUTION NOTICE ON ASBESTOS BAGS

In the very near future all of our bags will show a
caution notice as follows:

CAUTION

This bag contains Chrysotile asbestos fibre.
Persons exposed to this material should use
adequate protective devices as inhalation of
this material over long periods may be harmful.

It is our understanding that our competitors are
including such a caution notice on their bags also.

Exhibit "E"

RECEIVED
JUL 21 1971
LEGAL DEPT.

6-10-72 12:00 PM
6-10-72 12:00 PM
6-10-72 12:00 PM

CAREY-CANADIAN MINES, LTD.

WEST ISLE TOWER, SUITE 303, 2121 NORTH SERVICE ROAD
DORVAL 740, P.O., CANADA - TELEPHONE: 514-683-2990
CABLE ADDRESS: CARMINES MTL. - TELEX: 05-24552

April 2, 1973.
Bulletin No.
400

TO: ALL CCM DOMESTIC CUSTOMERS, DISTRIBUTORS AND
SALESMEN.

SUBJECT: OSHA

The attached news release from the Asbestos Information Association/North America should be of interest to everyone.

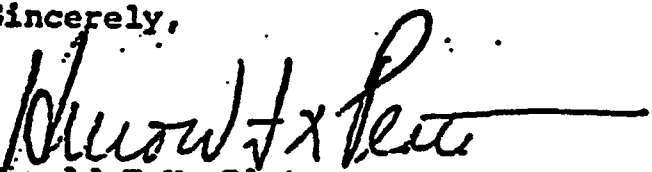
Although the contents could be considered a double edged sword, I prefer to think that this redoing of the current entire asbestos standard, is a positive step in favor of the asbestos industry.

The AIA/NA is the main, if not only organization in the U.S. that is carrying our message to the people and Government.

Anyone interested in learning more about supporting the AIA/NA should write to Matthew M. Swetonic.

Asbestos Information Association/North America,
22 East 40th. Street,
New York, N.Y. 10016.

Sincerely,


Harold F.X. Plate,
Sales Manager.
/dm.
encl.

bcc: A. Bagenstose
A. Bowe



MAR 19 1973

Asbestos Information Association/North America

22 East 40th Street
New York, N. Y. 10016
212-689-3378

March 15, 1973

OF VITAL IMPORTANCE

We have just learned that the Occupational Safety and Health Administration has decided to redo the entire asbestos standard, starting from scratch.

The official reason is that recently developed medical and technological data indicates that the present regulations no longer reflect "the best available evidence." The real reason for the decision is that OSHA has taken so much flack from both industry and labor regarding the standards that OSHA wants to get itself off the hot seat. This time, however, OSHA is determined to make sure that no complaints can be raised over its handling of the development process.

Thus, within two to three months, a 15 man (the maximum allowed under the law) advisory committee will be put together to review all the available evidence and make its recommendations to OSHA. The 15 man advisory committee will consist of: four representatives from industry, four representatives from organized labor, two from government (one each from NIOSH and the Department of Defense), two from State Government, and three representing the scientific community. Dr. Selikoff will be one of the scientific community representatives --- this has already been decided. The Chairman will be selected from among the three scientific community representatives. The committee will be given from three to nine months to complete its work.

Public hearings will be held following the submission of the advisory committee recommendations. Recommendations for individuals to sit on the advisory committee will be sought from industry trade associations, thus the AIA will once again find itself in the forefront of the industry effort.

You will obviously be kept closely informed of all developments regarding this situation.

Sincerely,



Matthew M. Swetonic

CAREY-CANADIAN MINES, LTD.

WEST ISLE TOWER, SUITE 303, 2121 NORTH SERVICE ROAD
DORVAL 740, P.Q., CANADA - TELEPHONE: 514-683-2990
CABLE ADDRESS: CARMINES MTL. - TELEX: 05-24552

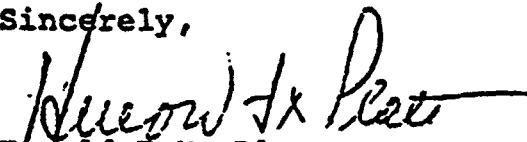
April 26, 1973
Bulletin No.
401

TO: ALL CCM SALESMEN, DOMESTIC DISTRIBUTORS,
DIRECT CUSTOMERS & EXPORT DISTRIBUTORS.

SUBJECT: ASBESTOS & HEALTH

Please note the attached press release based on AIA/NA material released in the U.S. earlier in the month. Similar coverage is being provided in Canada by The Quebec Asbestos Mining Association to all leading Canadian newspapers, trade journals and wire services.

Sincerely,


Harold F.X. Plate,
Sales Manager.
/dm.

bcc: M. Prus
A. Bagenstose
A. Bowe
File



Address

Quebec Asbestos Mining Association,
Room 412 - 5 Place Ville Marie,
Montreal 113, Que.

For information

Matt Swetonic

(212) 689-3373

For Immediate Release

World Health Organization reports:

Asbestos in environment
not public health threat

NEW YORK -- "Recent findings that levels of asbestos dust in the environment do not endanger the general public -- as reported by a World Health Organization agency -- confirm the position of the asbestos industry," says Matthew M. Swetonic, executive secretary of the Asbestos Information Association/North America.

The findings are contained in a report of the Advisory Committee on Asbestos Cancers to the director of the International Agency for Research on Cancer, a division of the WHO. They are conclusions of a specially selected panel of medical researchers convened following the IARC conference on the "Biological Effects of Asbestos" held at Lyon, France, October 5-6, 1972. According

to World Health Organization headquarters in Geneva, the full proceedings of the meeting will be published sometime this year.

Commenting on the IARC report, Mr. Swetonic calls it a major contribution by distinguished researchers from all over the world, and the most comprehensive presentation of facts available about the occupational hazards of asbestos and the relationship of asbestos to the general public.

"The Lyon conference," Mr. Swetonic adds, "was attended by 130 participants from 20 countries -- including Belgium, Canada, Czechoslovakia, Denmark, France, West Germany, Italy, Japan, South Africa, Switzerland, The United Kingdom, The United States, The U.S.S.R. and Yugoslavia -- and is representative of world medical opinion."

According to Mr. Swetonic, the major conclusions of the IARC report can be summarized as follows:

- The population at large is not threatened by asbestos fibers in the atmosphere. Surveys in a number of countries have shown that the concentration of asbestos dust in the urban atmosphere is about 10,000 times lower than the concentration known to be safe for occupationally exposed workers.
- While a direct relationship between inhalation of excessive asbestos dust and certain diseases was confirmed, risks varied according to the type of fiber, the type of occupation, and the extent of engineering controls implemented in the workplace.

- No increased risk of disease results from asbestos fibers which might be present in the water supply, beverages, food, or in the fluids used for the administration of drugs.
- It is confirmed that cigarette smoking greatly increases the risk of lung cancer among men and women exposed to excessive asbestos dust in their occupations.

The IARC report also recommends that future research be directed at understanding the mechanism of disease production, at ways to control disease and protect workers from excessive dust levels, at methods to determine the quantity of asbestos fiber in the human lung and other tissues and at the standardization of diagnostic criteria.

Much of the world-wide research into asbestos-related disease is supported and coordinated by the Institute of Occupational and Environmental Health, of Montreal.

Established by the Quebec Asbestos Mining Association in 1966, the Institute's goal is to support and coordinate medical research projects around the world aimed at identifying and eliminating asbestos-based health risks not solely for Canadian asbestos production workers but for all worldwide fabricators and users of finished asbestos products.

BULLETIN

BULLETIN NUMBER 458

AUGUST 11, 1975

ASBESTOS INFORMATION ASSOCIATION/NA

ASBESTOS/HEALTH HAZARD

For your information we are enclosing two pamphlets,

ASBESTOS AND BRAKE LININGS
and
ASBESTOS IN THE ATMOSPHERE

published by the Asbestos Information Association,
Washington, D.C., U.S.A.

We found these pamphlets reassuring. We hope you
also find them reassuring.

Sincerely yours,

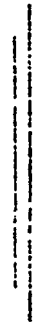


A. H. Bagenstose
Vice President - Marketing & Sales

AHB/cb

Enclosures-2

Asbestos and Auto Linings



ASBESTOS INFORMATION ASSOCIATION
Serving a Vital Industry

—

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References

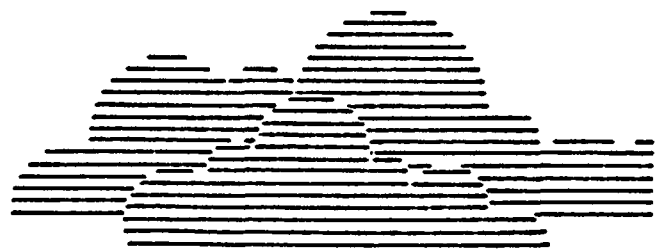
1. "Asbestos: A Hazard to Health," U.S. Department of Health, Education and Welfare, Public Health Service, National Institute for Environmental Health Sciences, Research Triangle Institute, Durham, North Carolina, 1970.
2. "Asbestos: A Hazard to Health," U.S. Department of Health, Education and Welfare, Public Health Service, National Institute for Environmental Health Sciences, Research Triangle Institute, Durham, North Carolina, 1970.
3. "Asbestos: A Hazard to Health," U.S. Department of Health, Education and Welfare, Public Health Service, National Institute for Environmental Health Sciences, Research Triangle Institute, Durham, North Carolina, 1970.
4. "Asbestos: A Hazard to Health," U.S. Department of Health, Education and Welfare, Public Health Service, National Institute for Environmental Health Sciences, Research Triangle Institute, Durham, North Carolina, 1970.
5. "Asbestos: A Hazard to Health," U.S. Department of Health, Education and Welfare, Public Health Service, National Institute for Environmental Health Sciences, Research Triangle Institute, Durham, North Carolina, 1970.

Additional Copies of This Pamphlet
Are Available

Asbestos Information Administration/North America
1030 L Street, N.W.
Washington, D.C. 20036

Asbestos in the Home

A hazard to health?



[illegible]

References

1. Asbestos: The Need For And Feasibility of Air Pollution Controls. National Academy of Sciences. Committee on Biologic Effects of Atmospheric Pollutants. ISBN 0-309-01927-3. 1971.
2. Biological Effects of Asbestos. Report of the Advisory Committee on Asbestos Cancers to The Director of the International Agency for Research on Cancer. World Health Organization. IARC Scientific Publications No. 6. pp 341-346. 1973.
3. "Asbestos Cancer: Past and Future Hazards" by J. C. Gilson. Proceedings of the Royal Society of Medicine. Vol. 66. pp. 395-403. 1973.
4. "Epidemiologic Surveillance of Mesothelioma in Canada" by A. D. McDonald and J. C. McDonald. CMA Journal. Vol. 109. pp. 359-362. 1973.
5. Background Information On Development Of National Emission Standards For Hazardous Air Pollutants: Asbestos, Beryllium, And Mercury. Environmental Protection Agency. EPA-AFTD-1503. pp 22-23. March 1973.
6. "Standard For Exposure to Asbestos Dust. Federal Register. Vol. 37. No. 110. pp. 11316-11322. June 7, 1972.

Additional copies of this pamphlet
are available.

Asbestos Information Association North America
1660 L Street, N.W.
Washington, D. C. 20036



BULLETIN

Carey-Carey Mining Corp. 2575 Columbia Road, Suite 100, San Francisco, CA 94109
Cable Address: CAREY C Tele: HWUD1542282 CAREY MINES, INC.

Bulletin #482

October 13, 1976

ASBESTOS IN PHENOLICS

We enclose a copy of an article from Modern Plastics Magazine, September, 1976, wherein an authority on phenolics states that no material can yet replace asbestos in phenolic compounds.

If you have phenolic compounders who are reluctant to use asbestos show them this article and convince them that if they want to make a superior product they can only achieve it by using asbestos.

A. H. Bagenstose

A. H. Bagenstose
Vice President - Marketing & Sales

PR:bba

Plastiscope 1

News and Interpretation
Roland R. MacBride, managing editor

Harnessing the hazards of asbestos

When the Occupational Safety & Health Administration began its long-range regulatory program aimed at a virtual elimination of asbestos fibers from workplace atmospheres, it raised speculation that asbestos' days were numbered as a resin reinforcement. And indeed, the 1972 OSHA ruling (which limited airborne concentration of fibers to 5 units per cc. of air, with a ceiling concentration of 10 fibers) triggered off a round of asbestos-free phenolic molding compound introductions by major producers (Dec. 1972 MP, p. 42).

As of July 1 of this year, the allowable exposure limit has been reduced to 2 fibers/cc. of air, and OSHA proposes a further reduction, to 0.5 fibers/cc. That's tough, but not so tough that producers and processors can't live with it. As a matter of fact, one diversified producer (and user) of phenolic molding compounds that has taken steps to comply with exposure standards and regulations is distributing a letter to its customers and industry at large confirming its intention to continue to supply asbestos-reinforced phenolic molding compounds.

/// The company is Rogers Corp., Rogers, Conn. It says its decision to stick with asbestos fibers was based on a conviction that—particularly in the growth-potential automotive and appliance industries—high-heat performance and economic requirements "preclude the use of anything but asbestos as a filler system" for phenolics.

••• To make that conviction practicable within the even narrower exposure limits defined by OSHA, the company has developed procedures that it says are designed to stay ahead of, rather than catch up with, exposure standards. Rogers says it was able to meet the current 2 fibers/cc. limit before it achieved the force of law, and is now working to bring its affected manufacturing areas (two compounding plants and two processing plants) into compliance with the proposed 0.5 fiber/cc. ruling.

Rogers points out that it got a head start on compliance many years prior to the first OSHA regulation, by implementing good manufacturing practice for the control of airborne fibers. The regulations accelerated the pace of implementation. Although the company cautions that its experience should not be regarded as a blueprint for other firms to follow (since different conditions call for different responses), the way in which it handles the problem could be interesting to other companies pondering the asbestos situation.

Typical is the operation at Rogers' Manchester, Conn., plant. It is equipped with 10 bag-house collectors handling air emissions containing asbestos fibers. All areas of the plant in which asbestos are—or, equally sig-

nificant, could reasonably be expected to become—airborne are vented to the collectors. Accumulated fines are wetted for reuse in beater operations, where fibers are broken up and sized. Each beater is equipped with a load-section exhaust hood. Whenever possible, Rogers receives its asbestos raw material in pulpable bags, thereby eliminating the need for an operator to open the bag and expose himself to the potential of fiber inhalation. If asbestos is received in nonpulpable (e.g., polyethylene film) bags, they are opened inside the hoods and dumped into the beater, so that there is minimal fiber-exposure potential. (Empty film bags are sealed in bulk sacks containing an asbestos warning label, then shipped to a specially designed area of the local municipal landfill. These empties, says Rogers, represent the only free asbestos fibers sent to waste from its operations.)

Sweeping is prohibited in asbestos work areas. All floor cleaning (done at frequent and specified intervals) is via vacuum machines fitted with special impermeable dust bags. And all inplant materials movement is via sealed container or vacuum conveyor.

Protection of employees extends to such details as dual clothes lockers: one for work clothing, the other for street wear. Soiled uniforms are placed in sealed bags (also labeled with asbestos warning signs) before being sent out for commercial cleaning.

Rogers maintains a detailed medical monitoring and filing system for each employee exposed to asbestos fibers. It entails an annual physical examination that includes chest X-ray and pulmonary function testing, the results of which are reviewed by a certified lung specialist. In addition, routine counts taken to monitor airborne asbestos fibers within the plant include personal monitoring of employees at their work stations.

Cost of the program, says Rogers, is not excessive in light of the results achieved in reducing asbestos-fiber hazards. Prior to 1974, the company spent \$150,000 for exhausts, air-makeup, and other equipment modifications to comply with the then-existing OSHA regulation. Since '74, an additional \$75,000 has gone to upgrade existing equipment and provide more bag-house collectors and increased exhaust. Monitoring costs run about \$5000/yr., and some \$15,000/yr. is spent for the company's continuing program of engineering redesign and review—the better to prepare for whatever comes next from OSHA.

BULLETIN



Carey-Canadian Mines, Ltd. P. O. Box 190 East Broughton Stn., PQ, Canada G0N 1H0
Phone: (418) 426-3050 Telex: 05-834 554 CAREYMINÉ EA8R
Cables: CARMINES EASTBROUGHTONPQ

Bulletin # 495

February 21, 1977

TO: All US Distributors and Customers

Gentlemen,

We are enclosing herewith a copy of the US Federal Register, outlining the contents of the advance notice of proposed rule, whereby, if accepted will classify Asbestos as hazardous material.

For your information, please note that we are, through the Quebec Asbestos Mining Association, preparing a brief which will be presented before March 14th, 1977.

Please note that you are most welcomed to take similar action, and in the event that added information would be required, please feel free to contact the undersigned.

Kind regards,


G.R. Therrien
TRAFFIC MANAGER

CRT/mfn

January 17, 1977

File: GEN-0-120-340.3

Mr. R. Gagnon
Black Lake

Dear Rollie:

Last week I told you of a pending investigation being made by the Materials Transportation Bureau of the United States Department of Transportation relative to certain materials which are now not classified as hazardous.

I am enclosing a copy of the Federal Register outlining the contents of the advance notice of proposed rule making and suggest you discuss it with QAMA members to determine the position of that organization.

Sincerely,

Frank Meunier

enc.

cc: R. Muth

LCW
To discuss at
QAMA meeting

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Mr. T. H.	_____
Mr. P. G.	_____
Mr. P. D.	_____
Mr. R.	_____
Mr. L. C. W.	_____
Mr. K. P.	_____
Mr. D. A.	_____
Mr. G. C.	_____
Mr. H. M.	_____
Mr. C. R.	_____

JAN 24 1977

cc QAMA

at all times. This request is being considered because of limited requests for openings during this period. (There were eight requests during 1975-1976).

Interested persons may participate in this proposed rule making by submitting written data, views, or arguments to the Commander (oan), Ninth Coast Guard District, 1240 East Ninth Street, Cleveland, Ohio 44199. Each person submitting comments should include his name and address, identify the bridge, and give reasons for any recommended change in the proposal. Copies of all written communications received will be available for examination by interested persons at the office of the Commander, Ninth Coast Guard District.

The Commander, Ninth Coast Guard District, will forward any comments received before January 12, 1977, with his recommendations to the Chief, Office of Marine Environment and Systems, U.S. Coast Guard Headquarters, Washington, D.C., who will evaluate all communications received and take final action on this proposal. The proposed regulations may be changed in the light of comments received.

In consideration of the foregoing, it is proposed that Part 117 of Title 33 of the Code of Federal Regulations, be amended by revising § 117.706 to read as follows:

§ 117.706 Sandusky Bay, Ohio.

(b) Ohio Department of Highways bridge between Martin Point and Dagbury. (1) The owner of or agency controlling this bridge shall provide the necessary draw tender and the proper mechanical appliances for the safe, prompt opening of the draw for the passage of vessels except when ice prevents navigation.

(2) The opening signal and the acknowledging signal shall be those prescribed in paragraph (a) (2) and (3) of this section.

(3) The draw shall open on signal, except that the draw need not open from 11 p.m. to 7 a.m. daily, except when notification prior to 3 p.m. has been given.

(4) Advance notification should be given to the Sandusky Post, State Highway Patrol.

(5) Public vessels of the United States, vessels in distress, and state or local government vessels used for public safety shall be passed through the draw of this bridge as soon as possible at any time even though the closed periods may be in effect.

(6) The owner or agency controlling the bridge shall keep a copy of the regulations in this section, together with a notice stating exactly how the Sandusky Post, State Highway Patrol, may be reached, conspicuously posted both upstream and downstream, either on the bridge or elsewhere in such a manner that it can be easily read from an approaching vessel at all times.

(Sec. 5, 28 Stat. 362, as amended, sec. 6(c) (2), 49 Stat. 937; (33 U.S.C. 499, 49 U.S.C. 1655(c)

(2)); 49 CFR 1.46(c)(5), 33 CFR 1.65-1(c) (4).)

Note.—The Coast Guard has determined that this document does not contain a major proposal requiring preparation of an Inflation Impact Statement under Executive Order 11821 and OMB Circular A-107.

Dated: December 1, 1976.

D. J. RILEY,
Captain, U.S. Coast Guard, Acting
Chief, Office of Marine
Environment and Systems.

[FR Doc. 76-38214 Filed 12-8-76; 8:45 am]

VETERANS ADMINISTRATION

[38 CFR Part 21]

EDUCATION ALLOWANCE OVERPAYMENTS

Charging of Entitlement; Review Board
Made Permanent

The following regulatory changes are made to clarify and update existing provisions.

Section 21.1045 is amended to provide proper rules for charging entitlement for overpayments, the collection of which is barred by a discharge of the debtor in a bankruptcy proceeding.

Section 21.4009 is amended to indicate that the Central Office ad hoc review board is renamed and made a permanent body.

Interested persons are invited to submit written comments, suggestions or objections regarding the proposal to the Administrator of Veterans Affairs (271A), Veterans Administration, 810 Vermont Avenue, NW., Washington, D.C. 20420. All relevant material received before January 10, 1977, will be considered. All written comments received will be available for public inspection at the above address only between the hours of 8 a.m. and 4:30 p.m. Monday through Friday (except holidays). During the mentioned 30-day period and for 10 days thereafter, Any person visiting Central Office for the purpose of inspecting any such comments will be received by the Central Office Veterans Services Unit in room 132. Such visitors to any VA field station will be informed that records are available for inspection only in Central Office and furnished the address and the above room number.

The Veterans Administration has determined that this document does not contain a major proposal requiring preparation of an Inflation Impact Statement under Executive Order 11821 and OMB Circular A-107.

Notice is also given that it is proposed to make these changes effective date of final approval.

Approved: December 3, 1976.

By direction of the Administrator.

OBELL W. VAUGHN,
Deputy Administrator.

1. In § 21.1045, paragraph (f) is revised to read as follows:

§ 21.1045 Entitlement charges.

(f) Overpayment cases. Entitlement will be charged for an overpayment in educational assistance allowance only if the overpayment is discharged in bankruptcy or waived and is not recovered. The charge will be at the appropriate rate for the elapsed period covered by the overpayment.

2. In § 21.4009, paragraphs (d), (h), (i) and (j) are revised to read as follows:

§ 21.4009 Overpayments; waiver or recovery.

(d) Field station committees, the field station regional committee having jurisdiction over the area in which the school is located is authorized to find:

(1) Whether recovery may be waived as to the veteran or eligible person.

(2) Liability of the school or liability of both the school and the veteran or eligible person.

(g) Administrative reviews. A request for an administrative review will be forwarded to Central Office where it will be considered by the Central Office School Liability Administrative Review Board convened for that purpose. The Board's decision will serve as authority for instituting collection proceedings, if appropriate, or for discontinuing collection proceedings instituted on the basis of the original decision of the field station committee in any case where the Board reverses a finding made by the committee that the school is liable.

(h) Review and modification. The Central Office School Liability Administrative Review Board may review and modify its decision upon submission of new and material evidence. The field station committee will forward such evidence with its recommendation.

(i) Finality of decisions. The Central Office School Liability Administrative Review Board has authority to act for the Administrator in making administrative reviews of determinations that a school is or is not liable for an overpayment to a veteran or an eligible person. There is no right of appeal.

[FR Doc. 76-36192 Filed 12-8-76; 8:45 am]

DEPARTMENT OF TRANSPORTATION

Materials Transportation Bureau

[49 CFR Parts 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189]

[Docket No. 31M-145]

ENVIRONMENTAL AND HEALTH EFFECTS MATERIALS

Advance Notice of Proposed Rulemaking

In issuing this advance notice of proposed rulemaking, the Materials Transportation Bureau (MTB) is giving notice that it is considering whether new

senting certain hazards to humans and to the environment and which are not generally subject to the existing Hazardous Materials Regulations (HMR). The MTB is particularly interested in receiving views on the practicality and need for transportation controls on materials whose potential release during or incident to transportation may result in an unreasonable risk to property, the environment, or to human health and safety as has been determined through exposure in the work place or exposure by environmental accumulation.

This action is in response to recommendations from other organizations who have expressed a desire for the MTB to take more effective steps to deal with certain unregulated materials.

Comments by: March 14, 1977.

Addressed to: Docket Section, Office of Hazardous Materials Operations, Department of Transportation, Washington, D.C. 20590. Comments should reference Docket No. HMR-145. It is requested that comments be submitted in five copies.

BACKGROUND

A number of public and private organizations and environmental agencies have expressed to MTB the view that the MTB should consider establishing transportation controls to deal with materials which are not regulated or are only partially regulated by the U.S. Department of Transportation's (DOT) HMR, transportation of which may pose certain hazards that the DOT previously has not formally recognized. The Natural Resources Defense Council, the General Electric Company, the National Tank Truck Carriers, the National Maritime Safety Association, the U.S. Environmental Protection Agency (EPA), and the Occupational Health and Safety Administration (OSHA) of the Department of Labor have expressed various concerns with the transportation of materials that may cause or contribute to the incidence of cancer, birth defects, genetic changes, environmental damage, and other effects, some poorly understood, and which in the past have been regulated, if at all, primarily because of other more easily recognized hazard characteristics. Such materials are referred to herein as "environmental and health effects materials." The MTB is considering the development of rules to deal with the transportation of a variety of environmental and health effects materials, to incorporate a systematic approach to identification of the kinds of hazards that might require attention, identification of materials that pose such hazards, and evaluation of the appropriateness of regulating such materials in transportation. Any such action would be based on Section 104 of the Hazardous Materials Transportation Act of 1974 (Pub. L. 93-633, 88 Stat. 2156) which authorizes the Secretary of Transportation to designate as a hazardous material any material the transportation of

and safety or property.

EXISTING DOT REGULATIONS

Historically, the DOT has established its regulatory control upon properties of materials that pose a significant potential hazard to humans from acute exposures. The program to minimize this hazard has been primarily directed at controlling the handling of the materials and was further confined to the circumstances of the hazardous materials transportation activity. This philosophy has led to the development of a series of regulations found in Title 49 of the Code of Federal Regulations. These regulations define the classes of hazardous materials and list materials contained in the classes (49 CFR 172.101).

Present DOT definitions of classes of materials regulated as hazardous are found in 49 CFR Part 173. Definitions dealing primarily with toxic effects, found in Subpart H therein, include those of Poison A (§ 173.326), Poison B (§ 173.343), Irritating materials (§ 173.351), Etiologic agents (§ 173.356) and Radioactive materials (§ 173.383). The existing definitions are generally limited in scope by reliance on testing criteria that may not provide adequate consideration of the risks that transporting some materials may have on health or environmental effects. Some of these limitations in the transportation regulations can be recognized as: (a) Not listing as HMR, those materials which when directly exposed to man over a prolonged period of time (month to years) effect his health; (b) not listing as HMR, those materials which when discharged into the environment pose imminent and substantial danger to public health or welfare, including, but not limited to, fish, shellfish, wildlife, shorelines and beaches, or (c) not listing as HMR, those materials which when found in man's food, water, or air may endanger his health. These risks have been addressed to some extent by agencies outside this Department.

ACTIONS OF OTHER AGENCIES

In connection with possible modification of existing MTB classification criteria, the MTB may consider partial or full adoption of criteria, and lists of materials identified thereunder, which have been developed for specific purposes by other agencies. This approach has been employed in this Department's definition of etiologic agents, 49 CFR 173.356, which rely on identification of such agents by the Department of Health, Education, and Welfare.

The EPA has proposed rules under section 311 of the Federal Water Pollution Control Act (33 U.S.C. 1321) which identify 306 materials as hazardous substances, based upon their toxicity to aquatic, mammalian, and plant organisms, as well as their potential for entering the navigable waters of the United States (see Appendix A).

The OSHA of the Department of Labor has published a list of materials it considers to be human carcinogens (see

Appendix B) of chronic occupational exposure which may be quite remote in time from the onset of exposure. OSHA has also proposed rules governing occupational exposure to asbestos (see Appendix B), which would include controls on asbestos handling incident to transportation. The Inter-governmental Maritime Consultative Organization is actively concerned with possible hazards associated with health effects of asbestos particles released during transportation.

The Organization for Economic Cooperation and Development has issued a decision of the Council on Protection of the Environment by Control of Polychlorinated Biphenyls (PCB's), which was adopted at its 315th meeting in Paris, France, February 13, 1973, and which recommended that member countries require labeling and specification packaging for the transport of PCB's. Both the EPA and the U.S. Department of State have indicated concern over the health effects of these materials founded, in part, upon the PCB's levels found in the fisheries of the Great Lakes, certain foodstuffs, and in the milk fat of nursing mothers in several States. In Section 6 of the Toxic Substances Control Act (Pub. L. 94-469, October 11, 1976) Congress has directed EPA to prescribe methods of marking and disposal of PCB's and has completely banned manufacture and distribution of these materials within two and one-half years of the effective date of the Act, subject to exception by the EPA Administrator.

LEGISLATION

Additional mechanisms, either existing or in development, which address health or environmental effects of various materials, may exist at both the Federal and State level. Such programs as can be identified may be considered by the MTB in evaluating any action it may take. State programs pertaining to the transportation of materials called hazardous wastes are of particular interest.

Recent Federal legislation includes the previously mentioned Toxic Substances Control Act which provides EPA with authorization to require pre-market evaluation of new chemicals, as well as evaluation of some presently known materials. Although full implementation of this Act by EPA is some time off, activities of EPA and industries regulated under the Act may provide a great deal of information concerning environmental and health effects materials.

Title III of the Resources Conservation and Recovery Act of 1976 (Pub. L. 94-540, October 21, 1976) directs the EPA Administrator to develop criteria for identifying hazardous wastes and a list of such wastes to be subject to EPA regulatory control. Any proposed or existing hazardous waste transportation control activities using specific packaging, labeling, and shipping documents are of interest in the MTB's evaluation of environmental and health effects materials.

REQUEST FOR COMMENT

To assist the MTB in its examination of the possible need for further identification

location and control of environmental and health effects materials moving in commerce, comments on the following subjects would be useful:

1. Whether or not additional regulation of environmental and health effects materials in transportation is needed and why, if so.

2. What sort of human health effects should be considered.

3. What sort of environmental effects should be considered.

4. What criteria should be used to ascertain effects and identify materials. The MTB is concerned that duplication of research efforts carried out by other agencies be avoided as far as possible and is interested in the suitability of considering lists of materials identified by other agencies as having adverse environmental or health effects.

5. Whether modifications to existing DOT hazardous material classifications, establishment of new classes, would accommodate the identified environmental and health effects materials.

6. What sort of transportation controls may be needed for identified environmental and health effects materials. Presently available controls include classification of the physical containment necessary for transportation of a hazardous material, as well as systems to insure adequate communication of information on the material and its hazards to persons handling the material. Is it in transportation or in storage identical to transportation and to persons responding to an emergency. Degree of control generally reflects the intensity of given hazard. Should packaging controls be necessary, performance standards rather than specification standards should be considered.

With regard to hazardous waste, a classification system may be used to identify mixtures as opposed to the compound materials; what packages may be appropriate for transportation; and how existing transportation nomenclature can be used to cover transport of hazardous wastes from the origin (shipper) to the disposer (signee).

Should new or additional transportation controls be necessary, what the effect on affected industries may be, what a reasonable implementation rule would be. The MTB is specifically concerned with avoiding costs that are not essential to the maintenance of transportation safety, and obtaining cost data to determine whether regulation impact statement will be required.

Should new or additional transportation controls be necessary, whether the effect of an environmental impact statement will be required.

Any other matters relevant to the location and control in transportation of environmental and health effects materials, or to the need therefore, in the need for uniformity in the ability of such safety regulations as are developed under this docket to various modes of transportation.

PROGRAM PLAN

If rulemaking is determined appropriate, under this docket, the MTB may consider a limited revision of the hazard classification; develop a list of substances; and provide a discussion for the basis of their selection. In addition, this effort may include consideration of regulatory requirements pertaining to communications, packaging, handling, and personnel training.

The MTB will be reviewing any comments received to answer questions outlined above and with a view to establishing selection criteria and rationale which would indicate specifically: (a) What types of toxicological data are meaningful; (b) in what context should these data be used; and (c) what degree of risk may be viewed as acceptable under what given conditions. Certain testing requirements may be established by the MTB to address: (a) The potential biological threat of a material; and (b) the probable occurrence of that threat during transportation.

The materials included in the EPA Hazardous Substances List and the OSHA list of carcinogenic chemicals, which are not presently regulated by the MTB in the Code of Federal Regulations, Title 49, are contained in Appendix A and B of this advance notice. These lists are provided as example lists of materials only and interested parties may wish to include in their comments specific reference to these listed materials as appropriate.

If sufficient interest is expressed in comments, an informal hearing on this subject will be held in Washington, D.C., no earlier than February 7, 1977. The time, location, and agenda of the hearing, if required, will be published in the Federal Register.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53 (e) and paragraph (a) (4) of Appendix A to Part 102)

Issued in Washington, D.C., on December 6, 1976.

Dr. C. H. THOMPSON,
Acting Director, Office of Hazardous Materials Operations.

APPENDIX A—U.S. ENVIRONMENTAL PROTECTION
AGENCY PROPOSED HAZARDOUS SUBSTANCES
(40 FR 59960—December 30, 1975)

MATERIALS NOT SPECIFIED BY U.S. DOT 49 CFR
172.101

NOTE: * Means Materials Not Regulated in
all Transport Modes.

COMMON NAME	COMMON NAME
Adiponitrile	Ammonium fluo- borate
Aluminum sulfate	Ammonium hypo- phosphite
Ammonium acetate	Ammonium iodide
Ammonium ben- zoate	Ammonium oxalate
Ammonium bicar- bonate	Ammonium penta- borate
Ammonium bisulfite	Ammonium per- sulfate
Ammonium bromide	Ammonium silico- fluoride
Ammonium carba- mate	Ammonium sulfa- mate
Ammonium carbon- ate	Ammonium sulfite
Ammonium chloride	Ammonium tartrate
Ammonium citrate	
Ammonium dibasic	

COMMON NAME—continued

Ammonium thio- cyanate	Endrin
Ammonium thio- sulfate	Ethion
Antimony potassium tartrate	Ethylene diamine- tetraacetic acid
Antimony tribromide	Aluminum fluoride
Antimony trifluoride	Ammonium bisulfide
Antimony trioxide	Ammonium fluoride
Arsenic disulfide	Sodium bisulfide
Arsenic trisulfide	Sodium fluoride
Benzene acid	Stannous fluoride
Benzonitrile	Formic acid
Beryllium chloride	Guthion
Beryllium fluoride	Heptachlor
Beryllium nitrate	Hydroxylamine
Cadmium acetate	Ferric ammonium citrate
Cadmium bromide	Ferric ammonium oxalate
Cadmium chloride	Ferric chloride
Calcium hydroxide	Ferric fluoride
Calcium oxide	Ferric nitrate
Captan	Ferric sulfate
Carbaryl	Ferrous ammonium sulfate
Chlordane	Ferrous chloride
Chlorofen	Ferrous sulfate
Ammonium chro- mate	Kelthane
Calcium chromate	Lead acetate
Chromic acetate	Lead fluoroborate
Chromic sulfate	Lead fluoride
Chromous chloride	Lead iodide
Lithium bichromate	Lead stearate
Lithium chromate	Lead sulfide
Potassium chromate	Lead tetramucate
Sodium bichromate	Lead thiocyanate
Sodium chromate	Lead thiosulfate
Strontium chromate	Lead tungstate
Zinc bichromate	Lindane
Cobaltous bromide	Malathion
Cobaltous fluoride	Maleic acid
Cobaltous formate	Maleic anhydride
Cobaltous sulfamate	Mercuric nitrate
Cupric acetate	Methoxychlor
Cupric chloride	Mevinphos
Cupric formate	Naled
Cupric glycinate	Naphthalene acid
Cupric lactate	Nickel ammonium sulfate
Cupric nitrate	Nickel formate
Cupric oxalate	Nickel hydroxide
Cupric subacetate	Nickel nitrate
Cupric sulfate	Nickel sulfate
Cupric sulfite	Nitrophenol
Cupric tartrate	Paraformaldehyde
Cuprous bromide	Pentachlorophenol
Coumaphos	Polychlorinated biphenyls
Cresol	Propyl alcohol
Cyanogen chloride	Pyrethrins
2,4-D (acid or esters)	Quinoline
Dalapon	Resorcinol
DDT	Selenium oxide
Dicamba	Sodium bisulfite
Dichlobenil	Sodium selenite
Dichloro	Sodium hydrosulfide
Dichlorvos	Sodium hypochlorite
Dieldrin	Sodium phosphate, dibasic
Diquat	Sodium phosphate, monobasic
Disulfoton	Sodium phosphate, tribasic
Diuron	Styrene
Dodecylbenzenesul- fonic acid	2,4,5-T (acid)
Dodecylbenzenesul- fonic acid, calcium salt	2,4,5-T (esters)
Dodecylbenzenesul- fonic acid, isopro- panolamine salt	Trichlorfon
Dodecylbenzenesul- fonic acid, sodium salt	TDE
Dodecylbenzenesul- fonic acid, trieth- anolamine salt	Texaphene
Dursban	Trichlorophenol
Endosulfan	Uranium peroxide
	Uranyl acetate
	Uranyl sulfate
	Vanadium pentoxide
	Vanadyl sulfate
	Xyleneol
	Zectran

Zinc acetate	Zinc potassium chromate
Zinc ammonium chloride	Zinc silicofluoride
Zinc borate	Zinc sulfate
Zinc bromide	Zinc sulfate, monohydrate
Zinc carbonate	Zirconium acetate
Zinc fluoride	Zirconium nitrate
Zinc formate	Zirconium potassium fluoride
Zinc hydroxide	Zirconium oxychloride
Zinc nitrate	Zirconium sulfate
Zinc phenylsulfonate	
Zinc phosphide	

APPENDIX B—U.S. DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

CANCER SUSPECT AGENTS

(29 CFR 1910.1003 through 1910.1016, except 1910.1005)

MATERIALS NOT SPECIFIED BY DOT 49 CFR 173.101

CHEMICAL NAME

Acetylaminofluorene	4-Nitrotriphenylamine
Aminodiphenyl benzidine	N-Nitrosodimethylamine
2,3'-Dichlorobenzidine (and its salts)	beta-Propiolactone
4-Dimethylaminobenzenes	bis-Chloromethyl ether
alpha-Naphthylamine	Methyl chloromethyl ether
beta-Naphthylamine	Ethyleneimine

PROPOSED CANCER HAZARD

(40 FR 47852—October 9, 1975)

MATERIALS NOT SPECIFIED BY DOT 49 CFR 173.101

asbestos, or chrysotile, amosite, crocidolite, tremolite anthophyllite, actinolite

[FR Doc. 75-36237 Filed 12-2-75; 8:43 am]

National Highway Traffic Safety
Administration

[49 CFR Part 525]

[Docket No. FE75-04; Notice 1]

AVERAGE FUEL ECONOMY STANDARDS Proposed Regulations Regarding Petitions for Exemptions

This notice proposes a new regulation setting forth the requirements applicable to the submission of petitions by low volume manufacturers of passenger automobiles for exemptions from average fuel economy standards. An exemption would be available only if the otherwise applicable average fuel economy standard were more stringent than the maximum feasible average fuel economy level which the petitioning low volume manufacturer could attain. The notice also describes the procedures that the National Highway Traffic Safety Administration (NHTSA) would follow in acting on the petitions.

Background. Part A of title III of the Energy Policy and Conservation Act (Pub. L. 94-163) amended the Motor Vehicle Information and Cost Savings Act (referred to hereafter as "the Act") by adding a new title V. That title (15 U.S.C. 2001 et seq.) requires the Secretary of Transportation to implement a program for improving the average fuel economy of new automobiles "manufactured" in the United States; i.e., produced or assembled in or imported into the customs territory of the United States. Authority

to administer the program was delegated by the Secretary to the Administrator of the NHTSA (41 FR 25015; June 22, 1976). Section 502(a)(1) of the Act establishes average fuel economy standards for passenger automobiles of 18 mpg, 19 mpg, and 20 mpg, for model years 1978, 1979, and 1980, respectively, and 27.5 mpg for model year 1985 and subsequent model years. Under a new Part 523 that the NHTSA is considering proposing for addition to title 49 of the Code of Federal Regulations, passenger automobiles would be station wagons built on a passenger car chassis, sedans, coupes, and sports cars and other motor vehicles classified as passenger cars under the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1381 et seq.) and implementing regulations at 49 CFR 571.3. The standards for passenger automobiles manufactured during the intervening model years, 1981-1984, are required by section 502(a)(3) to be promulgated by the Administrator. The penalty for a manufacturer's violating the standard for any model year is a civil penalty equal to \$5.00 for each tenth of a mile per gallon by which the average fuel economy of the manufacturer's passenger automobiles for that model year failed to meet the standard, multiplied by the number of those passenger automobiles.

Section 502(c) of the Act provides for exempting low volume manufacturers of passenger automobiles from the standards with which higher volume passenger automobile manufacturers must comply. To be eligible for an exemption, a manufacturer must produce (world-wide) fewer than 10,000 passenger automobiles in a model year for which an exemption is sought (an "affected model year") and fewer than 10,000 passenger automobiles in the second model year preceding the affected model year.

Congress authorized these exemptions in apparent recognition of the special circumstances of the low volume manufacturers and the extremely minor role that these manufacturers can play in increasing the average fuel economy of all passenger automobiles manufactured annually. Low volume manufacturers differ from higher volume manufacturers in several important respects. The former group of manufacturers typically produces a much narrower range of model types. Thus, they are less able to balance passenger automobiles with high fuel economy against passenger automobiles with low fuel economy. Further, their model types tend to be concentrated in the luxury market. Since the fuel economy of luxury vehicles is now generally lower than that of less expensive vehicles, the average fuel economy of the low volume manufacturers is also generally lower than that of higher volume manufacturers. Finally, the low volume manufacturer is relatively limited in his ability to make technological improvements by limited financial resources, small engineering staffs, and longer model type redesign cycles.

Although the number of low volume manufacturers is large, the total passen-

ger automobile production of these manufacturers is very small. There are approximately 25 low volume manufacturers which either produce passenger automobiles in this country or produce them abroad and import them into the country. Together, these manufacturers produce approximately 25,000 passenger automobiles annually for sale in the country and elsewhere. This is about one-quarter of one percent of all new passenger automobiles sold in this country annually. The fuel consumption of the group of passenger automobiles is slightly more than one-quarter of one percent of the consumption of the latter group.

If the Administrator determines, in rule, that the level of average fuel economy specified in the standard for an affected model year is higher than the maximum feasible average fuel economy achievable by a low volume manufacturer for its passenger automobiles to be manufactured in that model year, he may grant an exemption. Section 502(c) of the Act provides that, in making this determination, the Administrator shall consider:

- (1) Technological feasibility;
- (2) Economic practicability;
- (3) The effect of other Federal motor vehicle standards on fuel economy; and
- (4) The need of the Nation to conserve energy.

If the Administrator grants an exemption, he must also establish an alternative standard for the petitioner at the level of the petitioner's maximum feasible average fuel economy for its passenger automobiles to be manufactured in the affected model year. Instead of establishing a separate standard for the total passenger automobile production of each exempted manufacturer, the Administrator could either set a single standard or several class standards for the passenger automobiles of all exempted manufacturers.

SCHEDULE FOR THE SUBMISSION AND DISPOSITION OF PETITIONS

The proposed regulation provides that manufacturers desiring to petition for exemptions would be required, with certain exceptions, to submit their petitions to this agency not less than 24 months before the beginning of the affected model year. The exceptions relate to model years 1978 and 1979. In view of the relatively limited time remaining before those model years, petitions for model year 1978 would be required to be submitted not less than 3 months before that model year and petitions for model year 1979, not less than 12 months before that model year. Comments are requested on whether the agency should have discretion to accept late petitions and, if so, under what circumstances. No deadline would be established for the granting or denying of petitions. However, this agency anticipates that decisions on most petitions would be made not later than 18 months before the affected model year.

This proposed schedule reflects an interpretation of section 502(c) which

determine cost impact on consumers, businesses, markets and federal, state, and local government; effect on productivity of wage earners, businesses, or government; effect on competition, and effect on supplies of important products or services. In statement to transition team OSHA said actions have been taken to continue requirements of order by establishing agency procedures to make IIS an integral part of standards development without delaying rulemaking process. It is important to continue this sort of analysis whether the Executive Order expires or is extended, the statement noted. AFL-CIO has objected to IIS requirement in standard making procedure, ("N & N" Sept. 1976).

In addition to comment on inflationary impact statements, OSHA spoke to "slow rate" at which health standards have been issued commenting, "rulemaking procedures are necessarily lengthy in order to conform to the administrative procedures set forth in the Act and in order to develop an adequate record of rule-making on which to promulgate each standard." Paper said OSHA is actively seeking suggestions for new approaches which will more adequately address difficulties in setting new standards, especially where existing or new exposure limits are being evaluated. Problems involved in compliance with standards were also spoken to. If change in approach to standards - setting is to be made, it was advised, such "change should be made as soon as possible to avoid unwarranted investments and to forestall loss of agency creditability from both labor and industry over the slow rate of standards development and the unwieldy nature of the regulations." What changes in OSHA procedures and personnel may take place in new Administration remains to be seen.

N.J. Report Recommends Ban of Carcinogenic Chemicals -- New Jersey State Senate Committee report issued Dec. 30 recommends legislative ban of 16 specified carcinogenic chemicals in program to reduce state cancer incidence, highest in nation. Asbestos is included on list. This is first known instance that a state has been requested by legislative committee to ban rather than regulate suspected carcinogens. In asserting that healthy environment was more important than jobs, committee chairman, State Sen. John M. Skein, also said if it proved necessary to shut down industries by law to keep carcinogens out of air and water, it should be done. John Horn, Acting Commissioner of Labor and Industry for N.J., responded to report by saying outright ban on manufacture of carcinogens would have disastrous economic impact.

Asbestos and Talc -- Health Research Group (HRG), a public interest organization, charged in letters dated Dec. 13 to OSHA, NIOSH and Consumer Product Safety Commission that R. T. Vanderbilt Co. succeeded in persuading OSHA to change its definition of asbestos fibers so that it would not cover talc mined by

Vanderbilt in St. Lawrence County, N. H. According to HRG, this action was taken in Nov. 1974 over objections of NIOSH. OSHA's Field Memorandum #74-92 issued Nov. 21, 1974 prescribed, in regard to tremolite and talc, that only particle samples having a 5 or more to 1 length to width ratio would be considered asbestiform or fibrous. Tremolite is included with five other minerals (chrysotile, amosite, crocidolite, anthophyllite and actinolite) in OSHA definition of asbestos. Standard specifies that asbestos fiber is a particulate form of asbestos with a length-to-diameter ratio of at least 3 to 1. HRG contended that Assistant Secretary of Labor (OSHA) Morton Corn's predecessor, John Stender, allowed Vanderbilt to avoid having to comply with asbestos standard by certifying "without providing scientific evidence" that talc is free of asbestos, and urged OSHA to retract field memorandum and "investigate the personnel and procedures which allowed such an illegal series of events to occur and persist for so long."

In Dec. 16 news conference, Corn said results of National Bureau of Standards (NBS) study are awaited to settle dispute over whether Vanderbilt's talc is subject to OSHA's asbestos standard. NBS was requested in Nov. to analyze 80 different samples of talc from various locations "so that we can tell not just Vanderbilt but all the producers which (talc) are fibrous and which aren't," Corn said. Results of NBS study are due Mar. 1.

→ DOT Considering Transportation Controls for Asbestos-- Advance notice of proposed rulemaking in Federal Register, Vol. 41, Dec. 9, advises Department of Transportation (DOT) is considering whether new or additional transportation controls are necessary for certain materials whose potential release during or incident to transportation may result in an unreasonable risk to property, environment, or to human health and safety as has been determined through exposure in workplace or environmental accumulation. Transport of asbestos fiber is item under consideration by DOT. Comments may be submitted to Docket Section, Office of Hazardous Materials Operations, Department of Transportation, Washington, D. C. 20590 (five copies) by Mar. 14 to aid in assessment of need for developing and issuing a packaging standard for asbestos. Federal Register notice available on request.

Constitutionality of OSHA -- U.S. Supreme Court heard arguments on constitutionality of OSH Act enforcement procedures on Nov. 29. Court limited its review to issue whether OSHA enforcement procedures deny employer right to jury trial as guaranteed by Seventh Amendment in civil cases. McNeill Stokes, general counsel for American Subcontractors Association, argued Seventh Amendment guarantees right of jury trial whenever a proposed government penalty exceeds \$20. Solicitor General, Robert H. Bork, argued



CAREY CANADA INC.

C.P. P.O. Box 190
East Broughton Station, P.Q.
Canada G0M 1H0
Telephone (418) 426-3030
Cable Address: CARMINES
Telex: 05-633585 CAREYMIN EABR

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Dear Sir:

It has been and continues to be the policy of Carey Canada Inc. to encourage and promote the safe use of our asbestos fiber. We at Carey Canada Inc. are making every effort to eliminate asbestos-associated diseases among all persons who may be exposed to asbestos fiber including employees who are exposed on their jobs to airborne asbestos fiber. This is, we feel, an achievable goal. Carey Canada Inc. is fully prepared to do its part and your direct and continuing efforts are equally essential in order to accomplish this objective.

Epidemiological studies indicate that exposure to elevated concentrations of airborne asbestos fiber is associated with a significantly increased risk of developing asbestosis, cancer of the lung and mesothelioma (a fatal cancer of the chest or abdominal cavity). There also is some indication from unconfirmed studies that there might be a greater incidence of cancer of the digestive tract in persons exposed to excessive amounts of airborne asbestos. In addition, studies indicate that asbestos workers who smoke have a significantly increased chance of contracting lung cancer.

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Exhibit "F"

a J.M. Water company

Carey Canada Inc. has been examining means of improving the protection of its own employees and its customers' employees. Concerning the latter, we urge that those of your employees who are or may be exposed to asbestos dust and especially those employees who smoke, be warned that inhaled asbestos fibers may cause or contribute to asbestosis and possibly to certain types of cancer. To help inform your employees of the health risks, Carey Canada Inc. has placed an expanded label on its bags of asbestos. This label, which takes the existing Occupational Safety and Health Administration (OSHA) warning and adds some additional information, reads as follows:

CAUTION
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST MAY CAUSE SERIOUS
BODILY HARM, INCLUDING CANCER AND ASBESTOSIS.
IF DUST IS CREATED, PERSONS EXPOSED TO THIS
MATERIAL SHOULD USE ADEQUATE PROTECTIVE DEVICES.
SMOKING GREATLY INCREASES THE RISK OF SERIOUS BODILY HARM.

It is possible that there are employees who may be exposed to asbestos dust who will not see this label. Because of this problem we have prepared a booklet (a copy of which is attached) which outlines the potential health hazards associated with asbestos and the precautions which should be taken by your employees. We strongly urge you to review the material set forth in the booklet and to actively organize and support programs to train your employees in the proper handling and use of asbestos fiber. In our opinion, the attached booklet forms an integral part of such a training program. We suggest that you have the booklet distributed to your employees and use your best efforts to assure that the booklet is read and that its advice is followed. We are mailing, under separate cover, a number of copies of the booklet. There is no charge for these booklets and if additional copies are needed, please inform us.

To achieve the goal of eliminating asbestos-related disease, each workplace in which asbestos fiber is used should conform to the highest feasible level of industrial hygiene. It is important that proper personal protective devices be available and used when necessary. Also your compliance with applicable OSHA and other governmental requirements is a necessary step in the protection of your employees' health. We confidently expect that you will cause workplaces under your control to so comply.

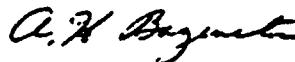
.../3

We feel that you should consider it your obligation to inform persons who purchase your asbestos products of the above dangers and proper handling instructions. Employees of your customers may be among those exposed to airborne asbestos fiber. We ask that you promote among your customers information programs to educate all concerned about the risks in working with asbestos products and the steps to be taken to protect each worker's health. Also, we will make copies of our booklet available to them upon request.

Further, we ask that you obtain and study a copy of the Occupational Safety and Health Act and OSHA regulations pertaining to asbestos in order to determine your obligations thereunder.

If Carey Canada Inc. can be of further assistance in these important matters, please let us know.

Sincerely yours,
CAREY CANADA INC.



A.H. Bagenstose
Vice-President - Marketing & Sales

AHB:tc

Encl.



CAREY CANADA INC.

C.P. P.O. Box 100
East Brighton Station, P. Q.
Canada G0N 1M0
Telephone (418) 426-3050
Cable Address: CARMINE3
Telex: 05-833585 CAREYMIN E4BR

February 28, 1983

Dear Sir/Madame,

It has been and continues to be the policy of Carey Canada Inc. to encourage and promote the safe use of our asbestos fiber. We at Carey Canada Inc. are making every effort to eliminate asbestos-associated diseases among all persons who may be exposed to asbestos fiber including employees who are exposed on their jobs to airborne asbestos fiber. This is, we feel, an achievable goal. Carey Canada Inc. is fully prepared to do its part and your direct and continuing efforts are equally essential in order to accomplish this objective.

Epidemiological studies indicate that exposure to elevated concentrations of airborne asbestos fiber is associated with a significant risk of developing asbestosis, cancer of the lung, or mesothelioma (a fatal cancer of the lining of the chest or abdominal cavity). Studies also indicate that asbestos workers who smoke have a significantly increased chance of contracting lung cancer.

Recent results of long term research into asbestos derived diseases indicate that asbestosis and lung cancer, in non-smokers, is dose related.

.../2

Carey Canada Inc. has been examining means of improving the protection of its own employees and its customers' employees. Concerning the latter, we urge that those of your employees who are or may be exposed to asbestos dust and especially those employees who smoke, be warned that inhaled asbestos fibers may cause or contribute to asbestosis and possibly to certain types of cancer. To help inform your employees of the health risks, Carey Canada Inc. has placed an expanded label on its bags of asbestos. This label, which takes the existing US Occupational Safety and Health Administration (OSHA) warning and adds some additional information, reads as follows:

CAUTION
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST MAY CAUSE SERIOUS
BODILY HARM, INCLUDING CANCER AND ASBESTOSIS.
IF DUST IS CREATED, PERSONS EXPOSED TO THIS
MATERIAL SHOULD USE ADEQUATE PROTECTIVE DEVICES.
SMOKING GREATLY INCREASES THE RISK OF SERIOUS BODILY HARM.

It is possible that there are employees who may be exposed to asbestos dust who will not see this label. Because of this problem we have prepared a booklet (a copy of which is attached) which outlines the potential health hazards associated with asbestos and the precautions which should be taken by your employees. We strongly urge you to review the material set forth in the booklet and to actively organize and support programs to train your employees in the proper handling and use of asbestos fiber. In our opinion, the attached booklet forms an integral part of such a training program. We suggest that you have the booklet distributed to your employees and use your best efforts to assure that the booklet is read and that its advice is followed. Please inform us how many copies you need.

To achieve the goal of eliminating asbestos-related disease, each workplace in which asbestos fiber is used should conform to the highest feasible level of industrial hygiene. It is important that proper personal protective devices be available and used when necessary. Also your compliance with applicable OSHA and other governmental requirements is a necessary step in the protection of your employees' health. We confidently expect that you will cause workplaces under your control to so comply.

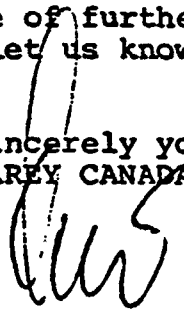
We feel that you should consider it your obligation to inform persons who purchase your asbestos products of the above dangers and proper handling instructions. Employees of your customers may be among those exposed to airborne asbestos fiber. We ask that you promote among your customers information programs to educate all concerned about the risks in working with asbestos products and the steps to be taken to protect each worker's health. Also, we will make copies of our booklet available to them upon request.

Further, for those of you in the USA, we ask you to study the Occupational Safety and Health Administration (OSHA) regulations pertaining to asbestos in order to determine your obligations thereunder. For your convenience a copy of the OSHA regulations is copied in the enclosed booklet (orange part).

In other countries, we recommend that you obtain and study a copy of the relevant industrial hygiene, or other, regulations pertaining to asbestos in order to determine your obligations thereunder.

If Carey Canada Inc. can be of further assistance in these important matters, please let us know.

Sincerely yours,
CAREY CANADA INC.


Peter Reiser
North American Sales Director

Encl.

PR:tc

**PROTECTING
THE
ASBESTOS WORKER**



PROTECTING THE ASBESTOS WORKER

You certainly are important to your family and loved ones, and you are important to your employer. It makes good sense for you to take every precaution to avoid possible hazards to your health.

If your work involves the use of asbestos-containing products, you should be aware of:

What the health hazards can be.

What you can do as an individual to protect your own health and that of your fellow employees.

ESTABLISHING SAFE DUST LEVELS

Exposure to airborne asbestos fiber can increase the risk of developing certain diseases over a period of years.

When asbestos is mined, milled or processed its minute dry fibers may become airborne like dust particles. Prolonged exposure to heavy concentrations of asbestos dust has been linked directly to an increased incidence of such diseases as pulmonary fibrosis (asbestosis), bronchogenic carcinoma (lung cancer) and mesothelioma. Also, there is some evidence of an increased incidence of cancer of the digestive tract in persons exposed to excessive amounts of airborne asbestos.

Reduction of airborne asbestos dust exposure is at present, the only known method of preventing disease among industry workers. Experience has shown that when dust levels are low, the risk to the worker and the incidence of asbestos-related disease is low.

PROTECTING THE WORKER

While there are many differences of opinion within the medical profession concerning the problem of asbestos and health, it is universally accepted that levels of airborne asbestos dust in the workplace must be kept to a minimum.

Industry has attacked the problem in a number of ways. Typical methods implemented to control dust levels include sophisticated dust collection systems (which combine high-power exhaust fans with duct networks and high efficiency filters); special methods of waste disposal; use of protective clothing and portable dust respirators; and innovative wetting and dampening methods which minimize dust generated during operations.

Basically, the requirements of an effective dust control program are twofold: (1) Design fabrication processes and production equipment so as to minimize dust generation as much as possible; and (2) Implement well organized programs of industrial maintenance (including hygiene surveys) to insure that safe levels are maintained.

It is obvious that good preventive maintenance must go hand in hand with effective dust control measures if these standards are to be achieved.

PLANT OR MINE WORKERS

Employees in asbestos mines, mills, or product manufacturing plants will be exposed to airborne asbestos fiber. However, when dust levels in mines, mills and factories are properly controlled, the asbestos content of the air will be within safe levels and will not be a hazard to workers.

FIELD OPERATIONS WORKERS

When properly used, most finished asbestos-containing products, will not produce dust levels high enough to be a hazard to workers. In more than 90% of the asbestos-containing products made in the United States, the asbestos fibers are «locked in» the product by means of cement, plastic or other binders. Except during sawing or certain other machining operations the fibers in these products are not released into the air. However, the tearout, removal or demolition of old asbestos-containing insulations can result in the release of asbestos fibers. Such operations must be carried out with approved methods of dust suppression and the use of personal protective devices.

SMOKING AND HEALTH

It has been firmly established that cigarette smoking greatly increases the risk of developing lung cancer in persons exposed to asbestos. If you are a cigarette smoker, it is strongly recommended that you stop smoking. If you are not a cigarette smoker don't start.

AFTER YOU LEAVE WORK

You also take precautions to prevent taking asbestos home on any work clothes or other materials in order to protect members of your family from possible exposure to asbestos dust.

To reduce the possibility of carrying asbestos fibers home on your person and clothing, use those facilities provided by your employer. Work clothing taken home for laundering should be carried in a closed bag or container and then washed separately from other family clothing.

Never take loose fiber home. Your family should not be needlessly exposed to asbestos dust through any carelessness on your part.

OSHA REGULATIONS

The Occupational Safety and Health Administration has established standards regulating asbestos dust exposures. These occupational standards deal with (1) permissible concentrations of asbestos fibers; (2) methods of compliance; (3) warning signs and labeling of potentially dangerous products; (4) monitoring of dust levels; (5) medical examinations for employees; and (6) recordkeeping by employers. These standards have one basic purpose -- to protect employees from exposure to potentially hazardous amounts of asbestos dust in their workplace.

The major obligations placed on employers, and industry in general, by these standards can be summed up as follows:

A. The employer shall maintain a healthy workplace, making sure that no employee is exposed to concentrations of airborne asbestos fiber in excess of established limits.

B. Where the exposure limits are exceeded, the employee shall be notified in writing of the situation by his employer and shall be informed of corrective measures being undertaken to reduce his exposure to a safe level.

C. Engineering controls and the implementation of safe work practices are the approved permanent methods of correction.

D. While corrective measures are being instituted, the employee shall be protected by other means, such as the wearing of an approved respirator provided by his employer, or by shift rotation.

E. The use of respirators or shift rotation to achieve control is not permitted except (1) during the time required to install engineering controls or implement safe work practices, or (2) in situations where such controls or practices are not technically feasible, or (3) in emergencies.

F. No employee shall be assigned to a task requiring the use of a respirator if his most recent yearly medical examination indicates that he would be unable to perform properly while wearing one, or if the wearing of a respirator would endanger the employee's health or safety, or that of another workman on the job.

G. Special protective clothing, when used, and separate clothes lockers shall be provided in certain situations.

H. The personal and environmental monitoring of the workplace shall be conducted by the employer, and the standards are being met, and the results of the monitoring.

I. Warning signs shall be posted in areas where dust levels are in excess of established limits.

containers shall be placed on any finished asbestos-containing material likely to release free asbestos fiber in excess of the standard during handling, application, or fabrication.

K. The employer shall provide yearly medical examinations for employees exposed to concentrations of asbestos dust. Pre-employment and termination medical exams are also required.

L. Upon request, an employee's medical records will be made available to his family physician.

Other requirements included in the standard require that: (1) where respirators are permitted, they must be selected from among the types approved by the U.S. Bureau of Mines or the National Institute for Occupational Safety and Health (NIOSH); (2) no asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos can be removed from shipping bags or their containers without being either wetted, enclosed or ventilated; (3) insofar as practicable, asbestos products and asbestos must be handled, stored, applied, removed, cut, scored, or otherwise worked upon in a wet state to reduce fiber emissions; (4) hand tools which may produce or release asbestos fibers in excess of the limits must be provided with local exhaust ventilation systems; (5) external work surfaces must be kept free of excessive accumulations of asbestos fiber; and (6) waste must be collected in sealed impermeable bags or containers.

FURTHER PRECAUTIONS

Industrial safety and health can never be the responsibility of only one person. Both you and your employer must work together to provide a safe and healthy environment.

For safety in specialized areas, detailed work practices must be instituted to insure compliance with government regulations. As an employee, it is your duty to follow these work practices at all times. Never take shortcuts that may endanger your health and that of others.

If you see a possible hazard that your employer may have overlooked, bring it to his attention.

If you can suggest more efficient and safer work practices, do so. If you are not sure how to handle a material or perform an operation without creating dust, talk with your supervisor first.

The asbestos industry is striving for better communication between all concerned parties—workers and their unions, government agencies, basic producers and end users. The ultimate goals are the reduction of dust to a minimum level, the protection of all workers from asbestos-related diseases, and the protection of the general public from levels of asbestos dust which may be potentially hazardous to health.

REMEMBER

- Asbestos fiber may be hazardous to your health, and prolonged exposure to it, may increase your risk of developing asbestosis, cancer of the lung or digestive tract, or mesothelioma.
- Every precaution should be taken by you and your employer to keep dust levels low and to avoid unnecessary exposure.
- The asbestos industry is working hard to control dust exposure and to alert every worker to proper safety precautions. Government and company regulations designed to protect you and other workers against exposure to asbestos dust should be strictly followed by everyone.
- The vast majority of the thousands of finished asbestos products are not hazardous when properly handled or used, nevertheless workers who are engaged in their manufacture, fabrication or installation should be aware of possible dangers. Don't be careless—urge your fellow workers not to be.
- Asbestos is used in some 3,000 products daily throughout the world...products that help prevent and control fire in our homes, schools, factories, offices, hospitals and theaters...products that help stop our cars and trucks...products that save fuel and energy in these important times of conservation. If we are to continue making these much-needed products, it is important that you and your employer cooperate in maintaining the highest standards of safety and health on the job.

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ASBESTOS FIBRE MANUAL

MANUEL DES FIBRES D'AMIANTE



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Exhibit "G"

The second edition of our Sales Manual for our distributor field personnel!

Between these covers we have collected general information, product data and other sales tools to help familiarize you more with asbestos . . . with Carey-Canadian Mines, Ltd.

From time to time, we will be adding and deleting to keep you current . . . the best informed sales representatives in our industry.

Put it to use . . . today. Knowledge leads to confidence. Being "comfortable" with a product leads to increased sales.

CREDITS & BIBLIOGRAPHY

We are grateful to Mr. M. S. Badollet for his kind permission to use tables and drawings from his book " 'Asbestos' A Remarkable Mineral Fiber" published in 1975.

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©Publisher: Carey-Canadian Mines Ltd., East Broughton, Quebec, 1977, Rev 1978.
A. H. Bagenstose, Vice-President, Marketing and Sales
Peter Reiser, Editor

HISTORY: (1)

The earliest references indicate that asbestos was used more than 2,000 years ago. Its rarity and cost allowed it to be used only by the aristocracy for fireproof cremation cloths and permanent wicks in temple lamps. The word Asbestos is derived from the Greek word for Unquenchable. The French word for asbestos, Amiante, and the Italian/Portuguese/Spanish word, Amianto, are derived from the Greek word, Amiantos, meaning Undefined or Unstained. Chrysotile is derived from the Greek word meaning Fine Hair of Gold.

In the thirteenth century the writings of Marco Polo report that asbestos tablecloths were used by the royal family in China. These tablecloths were "cleansed" by throwing them into a fire. In a letter written by Benjamin Franklin in 1725, he mentioned a purse "made of the stone asbestos, which only fire purifies."

The presence of asbestos in the Eastern Townships region of Quebec was noted by Sir William Logan in the Report of Progress of the Geological Survey of Canada for the period 1847-48. It was not until 1877, however, that the discovery of large deposits in Thetford and Coleraine townships provided a base for the development of the industry. Exploitation of these deposits began in 1878 when 50 tons of fibre were produced and shipped.

Since that date, Canadian production has increased yearly as more and more new uses for asbestos have been discovered. World production of Chrysotile asbestos fibre is 4.5 million tons of which almost 2 million tons is produced by Canada. Canada is the largest exporter of asbestos and ships to almost every country in the world.

WHAT IS ASBESTOS? (2)

Asbestos is the name applied to a family of naturally occurring fibrous minerals which vary widely in chemical composition, strength, flexibility, and general usefulness. The variety of major commercial interest is chrysotile of the Serpentine group. Other varieties are crocidolite (blue), amosite, anthophyllite, tremolite, and actinolite, all of which are part of the Amphibole (Hornblende) Group of asbestiform minerals. Amphibole fibres are more brittle and have harsher texture than chrysotile fibres, but they do have better resistance to acids.

Chrysotile asbestos, a hydrated silicate of magnesium, $3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$, [also expressed as $\text{Mg}_6 \text{Si}_4 \text{O}_{10} (\text{OH})_8$] is one of the most versatile minerals Mother Nature ever made for man. It occurs in fibrous serpentine, a greenish and somewhat translucent rock, in the form of fibrils, the smallest diameter fibre, organic or inorganic, ever known. Ultra basic rocks, deep in the earth's crust, were subjected to tremendous heat and pressure due to crustal shifting. High pressure steam, injected into the cracks and crevices, hydrated the fissure walls, converting these basic rocks to

serpentine and facilitating the deposition of chrysotile asbestos fibres. During epochs of time, these rocks were squeezed up into the basements of newly formed mountain chains and even the serpentine was converted into a fibrous mass of chrysotile. Erosion of these mountains exposed the asbestos deposits.

Mining, crushing, milling, dedusting and air classifying produces fibre grades of varying lengths. The fibres are soft and silky to the touch, yet very high in tensile strength and surface area; heat, weather, water and time resistant; highly compatible, yet inexpensive, as a reinforcing agent for more than 3,000 industrial uses.

In most cases open-pit mining is the preferred method and the southeastern portion of the Province of Quebec displays many such open pits in constant production of a wide range of chrysotile fibre. It is in this area of the Province of Quebec, Canada, near the town of East Broughton Station that CAREY-CANADIAN MINES, LTD. produces its well known grades of chrysotile asbestos fibre.

CLASSIFICATION OF ASBESTOS:

Asbestos is classified into two basic production types: Crude and Milled, and eight numbered general length groups (Group 1 being the longest).

Crude: Groups 1 and 2 are chunks of long fibre which have been separated from the ore or rock by hand (hand cobbled).

Milled: Groups 3, 4, 5, 6, 7 and 8 are obtained from the ore by a milling process. Milling consists of various methods of breaking up the ore or parent rock and extracting the fibre by means of screens and air separators.

Carey-Canadian Mines produces only milled chrysotile asbestos fibre, groups 4 to 8.

The grades produced by Carey-Canadian Mines are listed under QAMA (Quebec Asbestos Mining Association) Standard Grade Designations, also known as the "Canadian Chrysotile Asbestos Classification."

Asbestos fibre is sold by length classification as determined by the QAMA Guaranteed Minimum Shipping Test. The minimum test values are shown on the price list for each grade. See page 23 for a brief description of the test.

Within any one grade you may note several subdivisions of that grade. Grade 7M, for example, is subdivided into grades 7MS-1, 7M-3, 7M-5, and 7M-90 as shown on the price list and accompanying Typical Data Charts. Each of these subdivisions will meet the QAMA Standard for a Grade 7M asbestos fibre and will be sold at the price of a 7M, but will have different physical properties.

The reason for these differences in physical properties is the degree of opening. In its natural state asbestos occurs in bundles. Each bundle will contain several tens of thousands of individual fibres, which are so fine that they can only be seen through an electron microscope (0.015 - average 0.03 - 0.1 μm). In the milling operation the opening of the bundles is controlled to achieve various degrees of opening. Less fiberization means larger bundles, referred to as crudy fibre, whereas more fiberization produces more numerous, smaller bundles referred to as open or bulky fibre. Opening the fibre increases the surface area, affecting bulking properties, absorption, etc.

Asbestos is not manufactured from a basic raw material but is milled from the ore given us by nature. Specifications can only be controlled by stringent Quality Control at every stage of production and before shipment. Carey's quality control means a high degree of uniformity and reliability from shipment to shipment to the users.

Besides the Quebec Standard Test mentioned above, two other screen tests are used. The first is the Ro-Tap Test employing a number of dry screens, the second is the Bauer-McNett Test which is a wet screen method. The values given in the two screen tests not only show dramatically that a given grade of asbestos is composed of various lengths of fibre, but also that the fibre will show different screen results under dry and wet conditions. Please refer to page 23 for a brief description of the tests.

In the Product Application listing, you will note that the same grade is mentioned as being useful in more than one product and that the same type of product may utilize several different grades. This is due to the differences in finished product specifications, raw materials, formulae, mixing schedules and equipment.

When introducing a prospect to Carey-Canadian fibres, it is necessary to determine the end product for which the asbestos is required and, if a competitive asbestos is being used, the grade and sub-grade of that fibre being used. Reference to the Product Application listing will give one or more suggestions as to the proper grade. Actual selection of the particular sub-grade should be left to the customer as a result of his testing samples and selecting the most beneficial type for his particular product. As you familiarize yourself with the grades, sub-grades and data, you will frequently be able to suggest a CCM grade that will either improve the end product or provide a more economical alternative. If in doubt, please consult your Regional Sales Manager or the Head

Sales Office for expert advice on grades and applications. Make sure that the prospect has a copy of the Typical Test Data Sheet for his file so that Carey-Canadian Mines will be his first choice for his next asbestos application.

All CCM grades of asbestos fibre are noted for their lightness of color, freeness of grit, silky nature, uniformity and excellent quality control.

PRICES:

Prices are published by the Price List only and are FOB mine East Broughton, Quebec, in Canadian dollars per short ton of 2,000 lbs (907.2 kg) net. For U.S. customers (and any other customers who wish to pay in U.S. funds), conversion of Canadian to U.S. funds will be made at the prevailing exchange rate at the time of shipment.

FREIGHT:

NORTH AMERICAN SHIPMENT: Shipments are made on a freight collect basis. On shipments to the U.S.A., a surcharge must be collected in Canadian funds at the point of shipment to compensate Canadian carriers for the difference between U.S. and Canadian funds when the Canadian dollar is at a premium in relation to the U.S. dollar. Combined shipments of various grades are permissible. Freight charges for combined shipments are made at the rate prescribed for each class to make up the total shipment. On shipments consigned to points in the U.S.A., there is a Customs brokerage fee for preparation of Customs documents payable by the buyer and collected at destination.

Where an alternative method of shipment is possible CCM will suggest to the customer the method believed to be the most economical. It should be noted that rail freight rates vary to some extent with the total weight of the shipment. Starting at 40,000 lbs per carload and increasing by 20,000 lbs increments to 100,000 lbs, and in some cases to 120,000 lbs, there is a decreasing freight rate per hundred-weight. For example, a rail car shipment of 60,000 lbs will be charged a higher per hundred-weight rate than a 100,000 lbs shipment.

All truck shipments to the U.S.A. are charged at a minimum of 44,000 lbs. A container service is now available to destinations near South Atlantic, Gulf, and Pacific ports in the U.S.A. Details can be obtained from our Sales Administrator or the Traffic Manager in East Broughton.

Rail shipments to Mexico are prepaid and charged to Rio Grande crossings.

OVERSEAS SHIPMENTS

Shipments overseas are made either by containers or by break bulk depending upon the available service. Ports of loading are the St. Lawrence River ports or the Maritime ports of St. John and Halifax. Some Caribbean and Central America ports are serviced by a container service sailing out of Boston, Mass. and Port Elizabeth, N.J.

Information on all inland and ocean rates, surcharges and insurance rates is available from the Sales Department.

Inland freight charges to FAS loading port will be prepaid and charged at rates prevailing on the day of shipment.

PACKING

The standard size package is 100 lbs. (45.36 kg). Other bags are available usually at extra cost.

STANDARD SIZES AND TYPES OF BAGS BY TYPE OF BAGS:

Pressure Packed Paper (PPP) 100 lbs.	All grades except 7W and 7RF, 7TF Floats
Pressure Packed Woven Polyethylene (PPW) 100 lbs.	All grades except 7W and 7RF, 7TF Floats
Pressure Packed Polyethylene Film (PPF) 100 lbs.	All grades in group 7 except 7T-5, 7W and 7RF, 7TF Floats
Loose Filled Paper (LFP) 100 lbs.	All grades in Group 7 except 7RF-66
Semi-pressure Packed Paper (SPP80) and Semi-pressure Packed Woven Polyethylene (SPW80) 80 lbs.	7MS-1, 7RS-1, 7TS-1. Inquire if other grades available.
Loose Filled Paper (LFP50) 50 lbs.	7RF-66 standard. Other grades at upcharge.
BY GRADES:	
4K-1, 4K-5, 4T-1, 4T-5	PPP, PPW - 100 lbs.
5D-1, 5K-1, 5R-01, 5R-1, 5R-5, 6D-01, 6D-1	PPP, PPW - 100 lbs.
7D-1, 7D-3, Feltbestos, 7H	PPP, PPW, PPF, LFP - 100 lbs.
7M-3, 7M-5, Pavebestos, 7M-90, 7R-3, 7R-33, 7TS-3, 7TS-7	PPP, PPW, PPF, LFP - 100 lbs.
7T-5	PPP, PPW, LFP - 100 lbs.
7W	LFP - 100 lbs.
7MS-1, 7RS-1, 7TS-1	PPP, PPW, PPF, LFP - 100 lbs. SPP80, SPW80 - 80 lbs.
7RF-9, 7RF-10, 7TF-8, 7TF-12	LFP - 100 lbs
7RF-66	LFP50 - 50 lbs.

Carey-Canadian also has added unitizing. Shipments can be unitized by gluing, or by gluing and shrink-wrapping with a clear or black plastic shroud for easy mechanical unloading and handling.

STANDARD DEFINITIONS OF TERMS RELATING TO ASBESTOS (3)

asbestos fibre — acicular silicate mineral, with a structure based upon silicon-oxygen tetrahedra, that fits the definition of a fibre, and is composed of single crystals in predominantly parallel orientation. Common usage also designates a collectivity of asbestos fibres as asbestos fibre.

brittle — the tendency to break readily when flexed.

bundle — a heavy assemblage of asbestos fibres in close-packed parallel orientation, that may be partially crushed, and that has a transverse dimension exceeding 8 mm (0.3 in.).

chrysotile — metamorphosed asbestiform serpentine, corresponding to the formula $3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$ also expressed as $\text{Mg}_6 \text{Si}_4 \text{O}_{10} (\text{OH})_8$.

chrysotile asbestos — same as chrysotile.

crenulations — multiple kinks that can affect the fibre cohesion due to a locking effect. Fibre may be described as free from crenulations, or as slightly to highly crenulated.

cross-fibre — asbestos fibre that originates from veins or seams in which fibres are oriented predominantly at right angles to the plane of the vein or seam.

crude asbestos — hand cobbled (released from its ore by manual hammer impact) cross-vein asbestos in its natural or unfiberized form.

crudiness (kroodiness') — the degree to which an asbestos fibre approaches the crude state.

crudy (kroodi) — the quality of processed asbestos fibre with relatively low specific surface area and degree of fiberization, containing an appreciable portion of unfiberized agglomerates (derived from the term crude asbestos).

crudy bundle (kroodi) — a heavy assemblage of asbestos fibres in close-packed parallel orientation, that may be partially crushed, and that has a transverse dimension exceeding 8 mm (0.3 in.).

fibre — any material in a form such that it has a minimum length to average maximum transverse dimension of 10 to 1, a maximum cross sectional area of $5.06 \times 10^{-2} \text{ mm}^2$ ($7.85 \times 10^{-5} \text{ in.}^2$) [corresponds to a circular cross section of 0.254 mm (0.010 in.) in diameter] and a maximum transverse dimension of 0.254 mm (0.010 in.).

fibre adhesion — the resistance met when fibres are separated from the seam wall-(from the host rock). Fibres may be described as having from low to high adhesion.

fibre cohesion — the resistance met when fibres are separated from each other. Fibres may be described as having from low to high cohesion.

fibre spicules — rod-like pieces composed of asbestos fibres in close-packed parallel orientation, with undisturbed natural relative positions, of sufficient number to impart rigidity.

If dimensions exceed 10 mm (0.4 in.) in length and 1 mm (0.04 in.) in transverse dimension, the term pencil may be used.

fibril — a single crystal in the form of a fibre.

fines — the finest class of material produced by particle size classification of asbestos fibre by any accepted test method. Common usage in the asbestos industry has defined fines as that material which passes through the finest mesh used in CATM Method C-1.

floats — air-floated fibrous fraction recovered from the air filtration system of an asbestos mill.

fracture — a clearly defined break in the fibre in situ.

harsh — inherent property of a particular type of asbestos fibre implying a degree of stiffness or rigidity.

kinks — definite and well defined small changes in direction of the fibre in situ that could lead to points of weakness in the fibres when separated. Fibres may be described as kinked or straight.

loftiness — the measure of an asbestos fibre's loose specific volume. This is inversely related to the dry bulk density.

mass-fibre — asbestos fibres that are randomly oriented in the host rock.

milled asbestos — all grades of asbestos produced by the mechanical treatment of asbestos ore.

milling — a process by which asbestos ore is treated mechanically to produce grades of asbestos fibre with desired properties.

CATM = Chrysotile Asbestos Test Manual

nonfibrous spicules — acicular particles resembling assemblages of asbestos fibres composed of nonfibrous, or semifibrous minerals such as picrolite.

open — the quality of an asbestos fibre with relatively high specific surface area and degree of fiberization, free from an appreciable portion of unfiberized agglomerates.

pencil — rod-like assemblage of asbestos fibres in close-packed parallel orientation, of generally uniform diameter that can be fiberized readily. If dimensions are inferior to 10 mm (0.4 in.) in length and 1 mm (0.04 in.) in transverse dimension, the term fibre spicule may be used.

slip-fiber — asbestos fibre that originates from veins or seams in which fibres are oriented predominantly parallel to each other and to the plane of the vein or seam.

soft — inherent property of a particular type of asbestos fibre implying a high degree of flexibility and low fibre cohesion.

spelk — archaic term. See pencil

spicules — two types of agglomerates called spicules are found in milled asbestos:

- 1- Rod-like pieces of unopened asbestos.
- 2- Sharp pointed pieces of non-fibrous minerals such as picrolite.

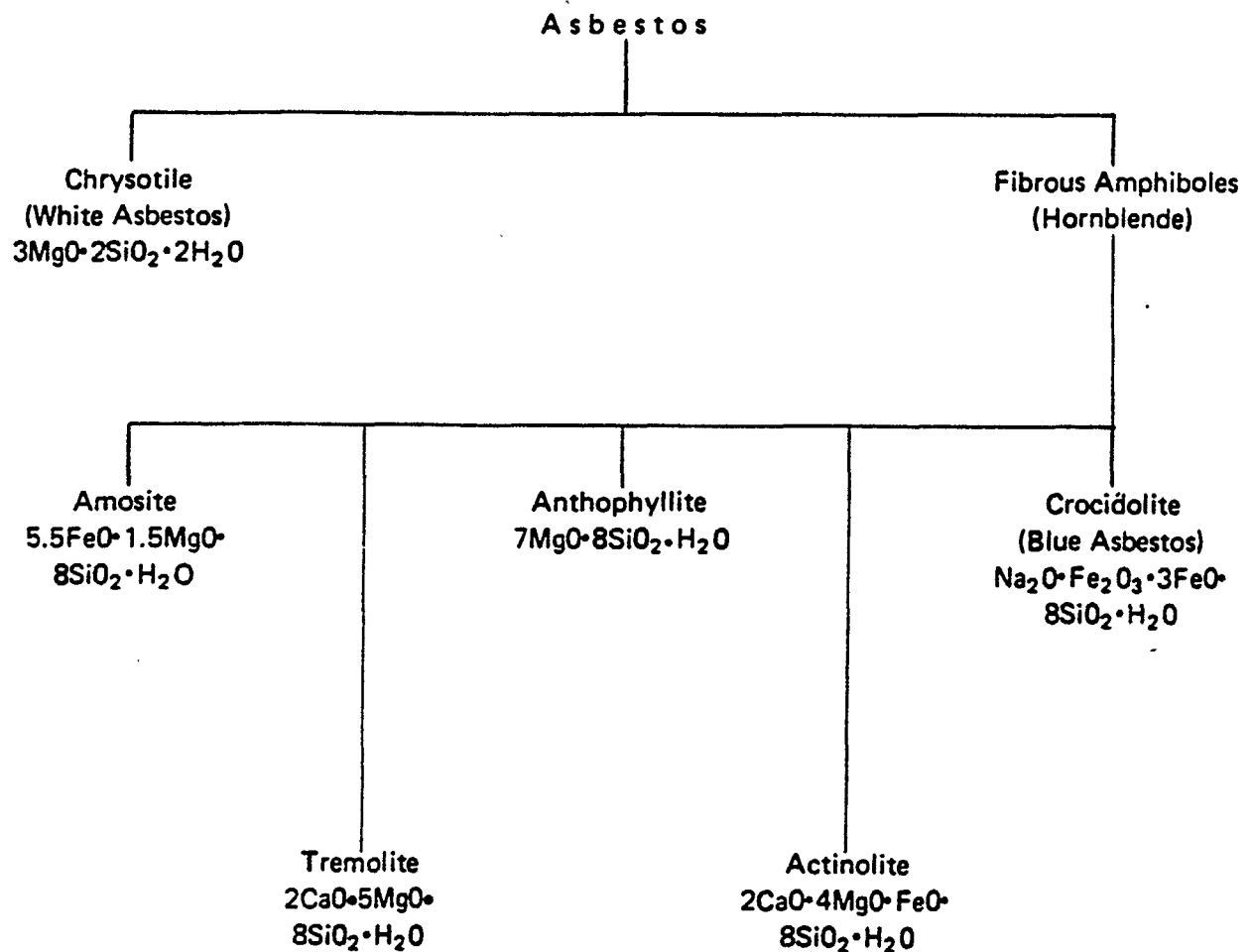
whisker — any material that fits the definition of fibre and is a single crystal.

Note 1 — Whisker is used incorrectly to designate a flocculus, or tuft, occurring as a long fibre contaminant among short asbestos fibres.

TABLE 1 — Relative dimensions of naturally occurring chrysotile asbestos agglomerates in increasing order of transverse dimension.

Order	Name	Approximate Transverse Dimension	
		min	max
1	Fibril	0.01 μm (0.4×10^{-6} in.)	0.1 μm (4×10^{-6} in.)
2	Fibre (single)	0.015 μm (0.6×10^{-6} in.)	0.1 μm (4×10^{-6} in.)
3	Fibre spicule	...	1 mm (0.04 in.)
4	Nonfibrous spicule	...	...
5	Pencil	1 mm (0.04 in.)	8 mm (0.3 in.)
6	Bundle	8 mm (0.3 in.)	...
6	Crudy bundle	8 mm (0.3 in.)	...

CLASSIFICATION OF
THE ASBESTOS MINERALS AND FORMULAE ((4))



TYPICAL CHEMICAL ANALYSIS OF
ASBESTOS PRODUCED BY CCM LTD (6)

SiO ₂	34.95%
MgO	42.30%
Al ₂ O ₃	0.03%
CaO	0.05%
CO ₂	0.97%
*FeO	0.51%
*Fe ₂ O ₃	4.50%
K ₂ O	0.02%
Ni	0.10%
CrO ₃	0.04%
Cu	2 ppm
MnO	10 ppm
S	10 ppm

H₂O 14.93%

Ignition Loss 14.42%

pH 9.6 to 9.9

Surface moisture up to 1.2%

*Special grades with lower Fe content are also available.

PROPERTIES OF CHRYSOTILE ASBESTOS (5)

Mineralogical Structure	In veins of Serpentine
Mineral Association	In altered peridotite adjacent to serpentine and limestone near contact with basic igneous rocks
Origin	Alteration and Metamorphism of basic igneous rocks rich in magnesium silicate
Veining	Cross and Slip fibres
Essential Composition	Hydrous silicate of magnesia
Theoretical Formula	$3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$ [$\text{Mg}_6 \text{Si}_4 \text{O}_{10} (\text{OH})_8$]
Crystal Structure	Fibrous and Asbestiform
Crystal System	Monoclinic (Pseudo-Orthorhombic)
Cleavage	010 Perfect
Lustre	Silky
Refractive Index	1.50 - 1.55
Length	Short to Long
Texture	Soft to Harsh, Also Silky
Solubility in 25% HCl; H_3PO_4 ; H_2SO_4 25% CH_3COOH 25% NaOH	Loss of weight up to abt. 56% up to abt. 24% up to abt. 1%

**COMPARISON OF
APPROXIMATE FIBRE DIAMETERS (5)**

TYPE OF FIBRE	IN μm	IN INCHES
Human Hair	40	15.8×10^{-4}
Ramie	25	9.85×10^{-4}
Wool	20-28	$8.0-11.0 \times 10^{-4}$
Cotton	10	4.0×10^{-4}
Rayon & Nylon	7.6	3.0×10^{-4}
Glass	6.6	2.6×10^{-4}
Rock Wool	7.2	$1.42-2.84 \times 10^{-4}$
Chrysotile	0.015-0.1	$0.006-.04 \times 10^{-4}$

**EFFECT OF TEMPERATURE
ON LOSS IN WEIGHT OF
CHRYSTILE FIBRE (5)**

Temperature		Loss in Weight 2 Hours
$^{\circ}\text{F}$	$^{\circ}\text{C}$	%
400	204	0.30
600	315	0.85
700	371	1.78
800	427	2.17
900	482	2.83
1,000	538	3.99
1,100	593	10.38
1,200	649	12.75
1,400	760	13.43
1,600	871	13.62
1,800	982	13.77

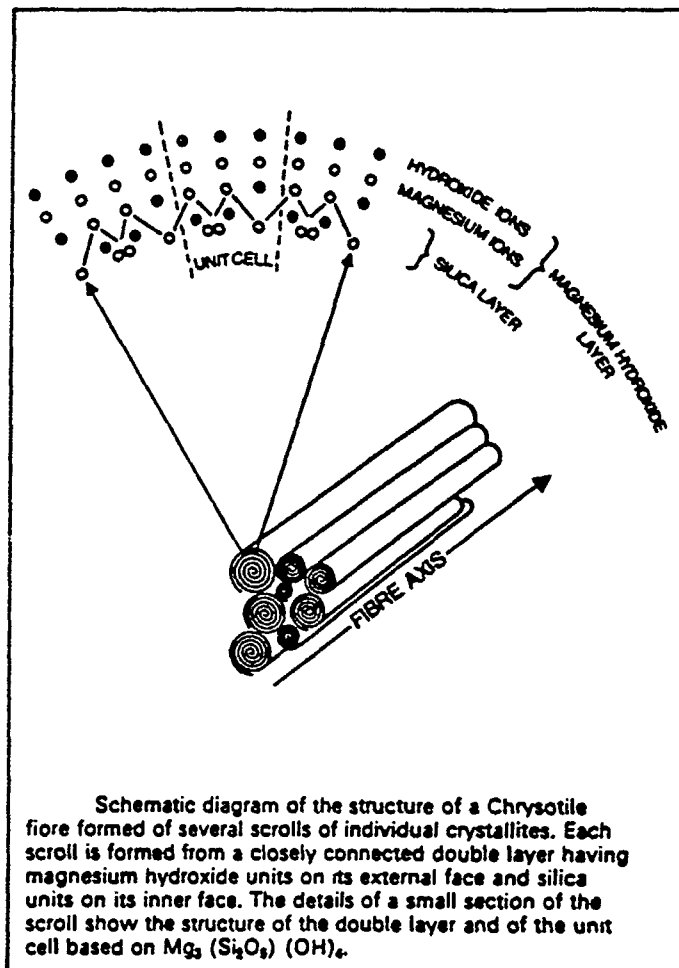
PHYSICAL AND OPTICAL PROPERTIES OF ASBESTOS FIBRES (5) (7)

PROPERTY	Chrysotile	Amosite	Anthophyllite	Crocidolite	Tremolite	Actinolite
Tensile Strength kp/cm ²	31,000	25,000	5,000	35,000	5,000	5,000
Young's Modulus kp/cm ²	1.65x10 ⁶	1.65x10 ⁶	----	1.9x10 ⁶	----	----
Flexibility	Good	Fair	Fair to brittle	Good	Fair to brittle	Fair
Specific Gravity	2.55	3.43	2.85-3.1	3.37	2.9-3.2	3.0-3.2
Hardness, Mohs	2.5-4.0	5.5-6.0	5.5-6.0	4	5.5	6
Specific Heat kJ/kg°C	1.114	0.879	0.808	0.842	0.888	0.909
Volume Resistivity megohm-cm	0.003-0.15	up to 500	2.5-7.5	0.2-0.5	----	----
Temp. at max ignition loss, °C	1,000	870-1,000	1,000	650	1,000	----
Filtration Properties	Slow	Fast	Medium	Fast	Medium	Medium
Electric Charge	Pos.	Neg.	Neg.	Neg.	Neg.	Neg.
Fusion point, °C	1,520	1,400	1,470	1,190	1,315	1,390
Spinnability	Very good	Fair	Poor	Good	Poor	Poor
Resistance to acids	Poor	Good	Very Good	Good	Good	Fair
Magnetite content %	0-5.2	0	0	3.0-5.9	0	----
Resistance to heat	Good Brittle at high temp	Good Brittle at high temp.	Very Good	Poor, fuses	Fair to Good	----
Ionizable salts, micro-mohs (Relative elec. conductance)	1.82	1.34	0.58	0.84	----	----

PHYSICAL AND OPTIONAL PROPERTIES OF ASBESTOS FIBRES (5)-(7) (cont.)

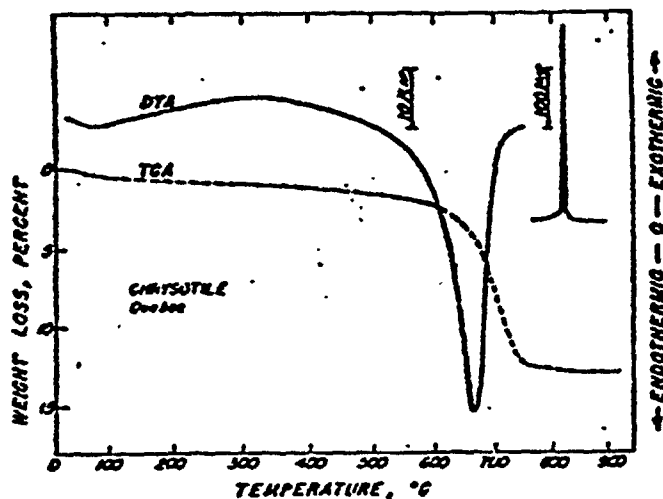
PROPERTY	Chrysotile	Amosite	Anthophyllite	Crocidolite	Tremolite	Actinolite
Refractive Index n_x	1.493- 1.553	1.657- 1.688	1.578- 1.652	1.685- 1.698	1.599- 1.628	1.600- 1.628
Refractive Index n_y	1.517- 1.557	1.675- 1.717	1.591- 1.676	1.689- 1.703	1.622- 1.655	1.625- 1.655
Pleochroism	Nil	Nil	Nil	Pale grey blue to dark blue	Moderate low second-order Length Slow	Moderate low second-order Length Slow
Birefringence	Moderate first-order	Strong second- order	Moderate low second- order	Weak (Masked)	Moderate low second-order	Moderate low second-order
Orientation	Length slow	Length slow	Length slow	Length fast	Length slow	Length slow
Extinction	Parallel	Parallel	Parallel	Parallel	Oblique (Max. 20°)	Parallel
Color	White to light green/ gray	Light gray, brown/gray or green	Silver gray to fawn	Lavender to blue	Gray/white to greenish, yellowish, bluish	Greenish

SCHEMATIC DIAGRAM OF CHRYSOTILE (7)



DTA & TGA (8)

Differential Thermal Analysis (DTA) and Thermal Gravimetric Analysis (TGA) have been used to study the thermal properties of chrysotile. The two principal reactions in the DTA of chrysotile are large endotherm between 600° and 720°C due to dehydroxylation and an exotherm with a peak at about 810°C ascribed to the formation of olivine or forsterite. The large weight loss from 600° to 750°C in the TGA corresponds with the dehydroxylation endotherm noted in the DTA. The loss of weight ranges from 12.7 to 13.1 % in various chrysotile samples from Quebec.

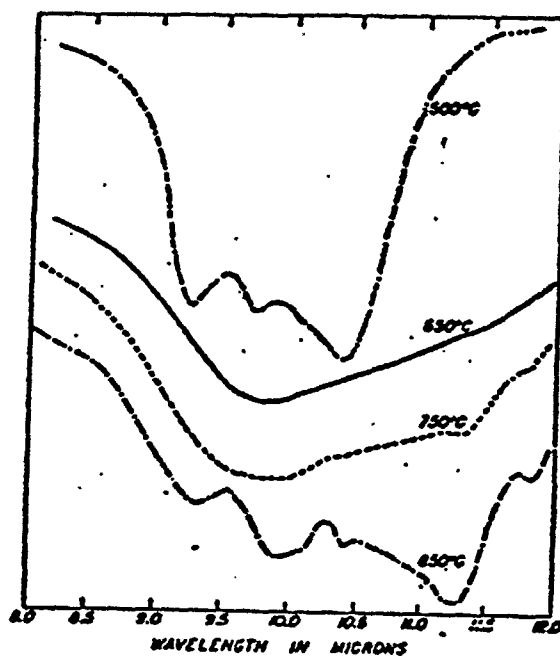


Typical thermal analyses of chrysotile. Both DTA and TGA run at a heating rate of 10°C/min.

THERMAL PROPERTIES OF CHRYSOTILE (8)

Chrysotile samples run in an X-ray furnace indicate that it undergoes only minor changes below 500°C. The dehydroxylation as the temperature is raised above 500°C renders the sample amorphous to X-ray diffraction. Above 700°C, the formation of forsterite is noted. At approximately 810°C there is a rapid conversion to forsterite, which causes the exotherm noted in DTA.

Infrared absorption spectra (IR) of chrysotile heated to 500°, 650°, 750°, and 850°C show the following. The sample heated to 500°C gave an IR spectrum essentially the same as unheated chrysotile. As the temperature was raised to 650°C, the pattern was similar to that of amorphous silica; at 750°C, additional absorptions were detected indicating the formation of forsterite. At 850°C, the IR is similar to that of a mixture of forsterite and enstatite.



Infrared absorption spectra of chrysotile held at various temperatures for 60 minutes.

SUMMARY DESCRIPTION OF TESTS (3)

- CATM B-1 QUEBEC STANDARD TEST — Apparatus and procedure for dry classification by length distribution into commercial grades. Size of sample 16 oz. (453.6g). Comparative and reproducible results expressed in ounces (28.35g) ± 0.1 oz.
- CATM B-2 RO-TAP SCREEN ANALYSIS — Apparatus and procedure for dry screen analysis, by length of fibre, of grades other than Groups 1, 2 and 3. Results are expressed in % retained on indicated screens. Comparative and reproducible results are obtainable on asbestos fibres when:
- Standard Tyler sieves or their equivalents are used, and when the weight of the sample, screening time and Ro-Tap adjustments are standardized and strictly observed.
- CATM C-1 BAUER McNETT WET CLASSIFICATION — Apparatus and procedure for wet screen analysis by fibre length distribution and fines content of milled asbestos fibre. Results are expressed in % retained on indicated sieves.
- CATM AIR PERMEABILITY — The measurement of the relative degree of openness or degree of fiberization of milled asbestos fibre by an air permeability method.
- D-2 By the Dyckerhoff method — expressed in seconds of time.
- D-3 By the Rapid Surface Area method — expressed in dm^2/g .
- CATM D-1 WET VOLUME — Designed to appraise all grades of asbestos fibre in terms of its buoyancy in water. Standardized: Weight of sample, settling time, and graduates. Results are expressed in ml.
- CATM D-6 LOOSE DENSITY — Apparatus and procedure for determining the loose density of milled asbestos fibre in Groups 5, 6, 7, 8 and 9, expressed in lbs/cu. ft. (To obtain g/dm^3 multiply lbs/cu.ft. by 16; to obtain $\text{cm}^3/100\text{g}$ divide 6250 by lbs/cu.ft.)
- CATM D-7 FREENESS — A method of determining the rate at which an asbestos-water slurry may be de-watered under standard conditions. Results are reported in seconds of time.

CATM = Chrysotile Asbestos Test Manual

CATM E-1 CRUDY CONTENT — Apparatus and procedure for measuring by water elutriation a residue of material that indicates the crudiness or grit content, or both, in milled fibre. Results are expressed in %.

CATM E-2 GRIT AND SPICULES — Apparatus and procedure for measuring by water elutriation a residue of material that indicates grit and spicule content in milled fibre. Results are expressed in %. The limitation of this test is for QS grades 7H and below.

A close examination of retained "grit" samples shows that there are almost no rock particles in CCM asbestos fibre grades but mostly spicules of unopened or partially opened fibres. These quantities are traditionally reported as "grit."

CATM G-1 COLOR — Photovolt photoelectric reflection meter which determines the color and difference in color and shade of asbestos fibre in comparison with a standard color plaque in the 60% reflectance range.

CCM III-2 KEROSENE ABSORPTION — Amount of kerosene retained by a standard sample under standardized conditions. A 10g sample of fibre is mixed with 100 cm³ of kerosene — the mixture is transferred into a funnel of screen cloth. The amount of kerosene retained by the 10g sample after 10 minutes of drainage is reported in cm³ as Kerosene Absorption.

CCM III-3 WATER ABSORPTION — Amount of water retained by a standard sample under standardized conditions. A 20g sample of fibre is mixed with 100 cm³ of tap water — the mixture is transferred into a funnel of screen cloth. The amount of water retained by the 20g sample after 20 minutes is reported in cm³ as Water Absorption.

The accompanying charts are NOT SPECIFICATIONS. They are Typical Analyses designed only for quick reference to show variation of grades and sub-grades as an aid in the selection of a grade to be evaluated for a specific use. Individual test results were averaged over a period of several years and are reported as TYPICAL DATA.

The minimum QUEBEC STANDARD TEST is not shown in the Typical Data Charts. Consult the Price List.

Test	Unit	C.C.I. Grades				
		4K-1	4K-5	4T-1	4T-5	4T-SP
CATM B-2						
Ro-Tap	%					
50g - 10 min - 2.4mm						
+ 3 mesh		17.0	15.0	9.0	10.0	1.5
+ 4 mesh		17.0	12.0	15.0	12.0	7.5
+ 6 mesh		21.0	19.0	21.0	18.0	17.0
+ 10 mesh		25.0	28.0	30.0	30.0	32.0
+ 20 mesh		13.0	18.0	15.0	20.0	25.0
+ 35 mesh		4.0	5.0	5.0	6.0	11.0
- 35 mesh		3.0	3.0	5.0	4.0	6.0
CATM C-1						
Bauer-McNett	%					
10g - 20 min						
+ 4 mesh		29.0	24.0	23.0	30.0	20.0
+ 14 mesh		18.0	22.0	18.0	22.0	23.0
+ 35 mesh		11.0	9.0	13.0	9.0	14.0
+ 200 mesh		12.0	8.0	14.0	9.0	12.0
- 200 mesh		30.0	27.0	32.0	30.0	31.0
CATM D-1						
Wet Volume	ml					
30g - 2000cc - 2hr		900.0	850.0	850.0	750.0	675.0
CATM D-3						
Rapid Surface Area	dm ² /g	85.0	70.0	80.0	70.0	70.0
CATM D-7						
Freeness	sec.	260.0	200.0	300.0	240.0	260.0
CATM E-1						
Crudy Content	Grit %	0.2	0.8	0.9	1.5	1.0
	Crude %	9.8	29.2	9.1	26.5	27.0
CATM G-1						
Color	Amber	71.0	71.0	71.0	71.0	72.0
	Blue	70.0	70.0	70.0	70.0	71.0
	Green	71.5	71.5	71.5	71.5	73.5

Test	Unit	C.C.I. Grades					
		5D-01	5D-1	5D-5	5R-01	5R-1	5R-5
CATM B-2							
Ro-Tap	%						
50g - 10 min - 2.4mm							
+ 4 mesh		8.2	4.0	10.0	4.5	2.0	3.0
+ 6 mesh		14.4	13.5	12.0	10.5	7.0	13.0
+ 10 mesh		41.4	40.0	37.0	40.0	43.0	40.0
+ 20 mesh		24.2	24.5	25.5	29.0	27.0	26.0
+ 35 mesh		7.0	11.0	10.0	9.5	13.0	12.0
+ 65 mesh		1.6	3.0	3.0	3.0	4.0	3.0
- 65 mesh		3.2	4.0	2.5	3.5	4.0	3.0
CATM C-1							
Bauer-McNett	%						
10g - 20 min							
+ 4 mesh		7.1	12.5	20.0	3.5	8.0	12.5
+ 14 mesh		10.9	21.0	23.0	9.0	19.5	22.5
+ 35 mesh		18.2	20.5	14.0	15.0	22.5	21.0
+ 200 mesh		22.5	16.0	12.0	26.0	15.0	14.0
- 200 mesh		41.3	30.0	31.0	46.5	35.0	30.0
CATM D-1							
Wet Volume	ml						
30g - 2000cc - 2hr		1380.0	760.0	675.0	1250.0	725.0	710.0
CATM D-3							
Rapid Surface Area	dm ² /g	110.0	85.0	70.0	110.0	80.0	70.0
CATM D-7							
Freeness	.sec.	560.0	300.0	260.0	550.0	300.0	260.0
CATM E-1							
Crudy Content	Grit %	T	1.0	1.0	T	1.0	1.0
	Crude %	1.0	15.0	27.0	1.0	12.0	21.0
CATM G-1							
Color	Amber	73.5	71.5	72.0	72.5	72.5	71.5
	Blue	72.5	70.5	71.0	71.5	71.5	70.5
	Green	74.0	72.0	73.5	73.0	73.0	72.0

Test	Unit	C.C.I. Grades				
		6D-01	6D-1	7D-1	7D-3	Feltbestos
CATM B-2						
Ro-Tap	%					
100g - 10 min - 2.4mm						
+ 6 mesh		1.0	T	1.0	T	1.0
+ 10 mesh		26.0	25.0	28.0	18.5	27.0
+ 14 mesh		26.0	23.5	23.0	20.5	22.0
+ 20 mesh		23.0	18.5	21.0	19.0	21.0
+ 35 mesh		16.0	19.0	17.0	22.0	21.0
+ 65 mesh		3.5	8.0	4.0	10.0	3.5
- 65 mesh		4.5	6.0	6.0	10.0	4.5
CATM C-1						
Bauer-McNett	%					
10g - 20 min						
+ 4 mesh		1.5	5.0	1.0	4.0	0.5
+ 14 mesh		4.0	9.0	2.5	7.0	1.5
+ 35 mesh		15.5	25.0	9.0	17.0	5.0
+ 200 mesh		30.0	27.0	31.0	31.0	26.0
- 200 mesh		49.0	34.0	56.5	41.0	67.0
CATM D-1						
Wet Volume	ml					
30g - 2000cc - 2hr		1300.0	650.0	---	---	---
20g - 2000cc - 4hr		---	---	550.0	370.0	750.0
CATM D-3						
Rapid Surface Area	dm ² /g	100.0	80.0	100.0	75.0	105.0
CATM D-7						
Freeness	sec.	550.0	350.0	400.0	600.0	400.0
CATM E-1						
Crudy Content	Grit %	0.2	3.0	0.7	2.5	0.0
	Crude %	0.3	9.0	0.8	5.5	T
CATM G-1						
Color	Amber	72.0	71.0	70.0	71.5	69.5
	Blue	71.0	70.0	69.0	70.5	68.5
	Green	72.5	71.5	70.5	72.0	70.0

Test	Unit	C.C.I. Grades					
		7F-5	7FS-1	7H-5	7HS-1	7K-5	7KS-1
CATM B-2							
Ro-Tap	%						*
100mg - 30 min - 2.4mm							
+ 6 mesh		0.0	0.0	0.0	0.0	0.0	0.0
+ 14 mesh		10.8	4.0	12.0	10.8	2.5	1.5
+ 20 mesh		17.0	21.3	18.0	22.7	11.0	10.9
+ 28 mesh		19.5	34.0	20.0	27.1	23.0	28.0
+ 35 mesh		13.7	19.2	15.0	19.5	22.0	27.0
+ 65 mesh		15.0	10.5	14.0	10.5	16.0	18.6
- 65 mesh		24.0	11.0	21.0	9.4	25.5	14.0
CATM C-1							
Bauer-McNett	%						
20g - 20 min							
+ 14 mesh		7.5	0.7	3.5	0.7	2.5	0.6
+ 35 mesh		19.1	5.0	12.0	3.0	8.0	2.7
+ 100 mesh		19.6	16.4	17.0	13.5	21.0	9.9
+ 200 mesh		12.9	11.2	12.0	11.4	15.0	8.5
- 200 mesh		40.9	66.7	55.5	71.4	53.5	78.3
CATM D-1							
Wet Volume	ml	350.0	800.0	350.0	730.0	340.0	650.0
20g - 2000cc - 4hr							
CATM D-3							
Rapid Surface Area	dm ² /g	80.0	200.0*	* Prior to bagging		80.0	200.0*
CATM D-6							
Loose Density	lb./ft. ³ g/dm ³	13.0 208.0	8.0 128.0	13.0 208.0	13.0 208.0	14.0 224.0	* 200.0
CATM G-1							
Color	Amber Blue Green	68.0 67.0 68.5	71.5 70.0 72.0	68.0 67.0 68.5	68.5 68.0 69.0	68.0 76.0 68.5	69.5 69.0 70.0
CCI II-3.2							
Grit	%	6.3	0.1	3.0	T	2.0	0.1
CCI III-2							
Kerosene Absorption	ml 10g	36.0	69.0	35.0	60.0	38.0	54.0
CCI III-3							
Water Absorption	ml 20g	71.0	93.0	75.0	90.0	70.0	90.0

Test	Unit	C.C.I. Grades					
		7M-5	7M-90	7MS-1	7MS-66	7R-3	7RS-1
CATM B-2							
Ro-Tap	%						
100g - 30 min - 0.094"							
+ 6 mesh		0.0	0.0	0.0	0.0	0.0	0.0
+ 14 mesh		3.0	2.5	5.0	5.0	1.0	2.0
+ 20 mesh		13.0	8.0	18.0	21.0	7.0	15.0
+ 28 mesh		21.0	13.0	24.0	35.0	17.0	25.0
+ 35 mesh		20.0	13.0	27.0	20.0	22.0	24.0
+ 65 mesh		17.5	18.5	18.0	9.0	23.0	22.0
- 65 mesh		25.5	45.0	13.0	10.0	30.0	12.0
CATM C-1							
Bauer-McNett	%						
20g - 20 min							
+ 14 mesh		2.5	6.0	0.8	1.0	1.0	0.5
+ 35 mesh		7.5	12.0	3.0	4.0	7.0	2.0
+ 100 mesh		17.0	19.0	12.0	13.5	16.0	12.0
+ 200 mesh		12.0	15.0	12.0	12.5	16.0	12.0
- 200 mesh		61.0	48.0	72.2	69.0	60.0	73.5
CATM D-1							
Wet Volume	ml	340.0	220.0	520.0	1000.0	280.0	500.0
20g - 2000cc - 4hr							
CATM D-3							
Rapid Surface Area	dm ² /g	95.0	52.0	200.0*	235.0*	85.0	195.0*
* Prior to bagging							
CATM D-6							
Loose Density	lb./ft. ³ g/dm ³	14.5 232.0	18.5 296.0	14.0 224.0	8.6 137.6	18.0 288.0	14.5 232.0
CATM G-1							
Color	Amber Blue Green	67.5 66.5 68.0	66.0 65.0 66.5	68.5 67.5 69.0	71.0 70.0 71.5	67.5 66.5 68.0	71.0 70.5 71.5
CCI II-3.2							
Grit	%	1.6	12.0	T	T	1.0	T
CCI III-2							
Kerosene Absorption	ml 10g	40.0	30.0	55.0	75.0	35.0	50.0
CCI III-3							
Water Absorption	ml 20g	70.0	55.0	85.0	95.0	70.0	85.0

Test	Unit	C.C.I. Grades				
		7T-5	7TS-3	7TS-7	7TS-1	7W
CATM B-2						
Ro-Tap	%					
100g - 30 min - 0.094"						
+ 6 mesh		0.0	0.0	0.0	0.0	0.0
+ 14 mesh		0.1	0.3	0.2	3.0	T
+ 20 mesh		0.9	5.0	4.0	15.0	0.2
+ 28 mesh		5.0	16.0	15.0	23.0	2.0
+ 35 mesh		18.5	24.0	22.0	24.0	9.0
+ 65 mesh		26.5	23.0	24.0	20.0	29.0
- 65 mesh		49.0	31.7	34.8	15.0	59.8
CATM C-1						
Bauer-McNett	%					
20g - 20 min						
+ 14 mesh		1.0	1.0	1.0	0.1	5.5
+ 35 mesh		1.5	4.0	3.5	1.5	6.0
+ 100 mesh		13.5	16.0	15.5	8.0	20.0
+ 100 mesh		18.0	15.0	15.0	10.0	17.5
- 100 mesh		66.0	64.0	65.0	80.4	51.0
CATM D-1						
Wet Volume	ml	200.0	275.0	260.0	450.0	150.0
20g - 2000cc - 4hr						
CATM D-3						
Rapid Surface Area	dm ² /g	*		* Prior to bagging		*
		55.0	80.0	80.0	190.0*	65.0
CATM D-6						
Loose Density	lb./ft. ³ g/dm ³	*				
		18.0	17.0	17.0	13.0	22.0
		288.0	272.0	272.0	208.0	352.0
CATM G-1						
Color	Amber	65.0	67.0	66.5	68.0	64.5
	Blue	64.0	66.5	65.5	67.0	63.5
	Green	65.5	67.5	67.0	68.5	65.0
CCI II-3.2						
Grit	%	2.0	1.0	1.5	T	17.0
CCI III-2						
Kerosene Absorption	ml 10g	33.0	35.0	35.0	45.0	25.0
CCI III-3						
Water Absorption	ml 20g	57.0	70.0	70.0	84.0	45.0

Test	Unit	C.C.I. Grades				
		7RF-9	7RF-10	7RF-66	7TF-8	7TF-12
CATM B-2						
Ro-Tap	%	#	#	#	#	#
100g - 30 min - 0.094"						
+ 6 mesh		0.0	0.0	0.0	0.0	0.0
+ 14 mesh		T	0.2	T	0.0	0.0
+ 20 mesh		0.2	0.5	0.4	T	T
+ 28 mesh		1.5	4.0	11.0	0.2	0.3
+ 35 mesh		4.0	16.0	38.0	2.0	1.3
+ 65 mesh		60.0	58.0	42.0	32.0	24.0
- 65 mesh		34.3	21.3	8.6	65.8	74.4
CATM C-1						
Bauer-McNett	%					
20g - 20 min						
+ 80 mesh		0.5	0.5	1.0	1.0	1.0
+ 325 mesh		12.5	12.0	12.5	26.0	34.0
- 325 mesh		87.0	87.5	86.5	73.0	65.0
CATM D-1						
Wet Volume	ml	205.0	300.0	550.0	125.0	115.0
20g - 2000cc - 4hr						
CATM D-3						
		#	#	#	#	#
Rapid Surface Area	dm ² /g	160.0	180.0	230.0	90.0	65.0
CATM D-6						
		#	#	#	#	#
Loose Density	lb./ft. ³	15.0	11.5	8.5	17.5	19.0
	g/dm ³	240.0	184.0	136.0	280.0	204.0
CATM G-1						
Color	Amber	65.5	66.5	67.0	65.0	64.0
	Blue	64.5	65.5	66.0	64.0	63.0
	Green	66.0	67.0	67.5	65.5	64.5
CCI II-3.2						
Grit	%	T	T	T	T	0.05
CCI III-2						
Kerosene Absorption	ml	38.0	48.0	50.0	30.0	25.0
10g						
CCI III-3						
Water Absorption	ml	70.0	80.0	92.0	53.0	45.0
20g						

CATM tested by Chrisotile Asbestos Test Manual methods
 CCI Carey test procedure
 T Trace

All samples from pressure packed bags unless loose filled
 bags are indicated -mm

PRODUCT APPLICATION BY GRADES

Fibre Grade by Length	Characteristics by degree of opening	Uses
4K-1	Medium	Acetylene cylinders, calcium silicate insulation, chlorine cells, filters, friction materials, textiles, compressed asbestos sheet packing, asbestos paper, asbestos millboard, asbestos cement products
4T-1	Medium	Same as above plus refractory hot tops, acoustical and fire-proofing insulation
5D-1	Medium	Asbestos millboard, asbestos papers, acoustical and fire-proofing insulations, compressed asbestos sheet packing, asbestos cement products
5K-1	Medium	Asbestos cement products, asbestos millboard, asbestos papers, friction materials, compressed asbestos sheet packing
5R-01	Open	Acoustical and fireproofing insulation, refractory hot tops
5R-1	Medium	Asbestos cement products, asbestos millboard, asbestos paper, sheet packing, hot tops, friction materials, cold molded plastics and phenolic molding compounds, pulp cement boards, acoustical and fireproofing insulation
5R-5	Crudy	Asbestos cement products, friction materials, sheet packing

PRODUCT APPLICATION BY GRADES

Fibre Grade by Length	Characteristics by degree of opening	Uses
6D-01	Open	Asbestos felt, caulking and sealing compounds, phenolic molding compounds, asphalt cutback compounds, paper, extruded asbestos cement
6D-1	Medium	Asbestos millboard, asbestos paper, asbestos cement products, acoustical and fireproofing insulations, calcium silicate insulation, friction materials, cold molded plastics and phenolic molding compounds, pulp cement boards
7D-1	High Bulk	Asphalt compounds, latex paper & felts, caulking and sealing compounds
7D-3	Medium Bulk	Asbestos millboard, asbestos papers, caulking and sealing compounds, phenolic molding compounds, friction materials, cold molded plastics, calcium silicate insulation, pulp cement boards, refractory hot tops
Feltbestos	High Bulk	Latex paper & felts
7H	Medium Bulk	Friction Materials
7MS-1	High Bulk	Extruded asbestos cement products, latex paper & felts, emulsified asphalt paving, asphalt compounds, caulking & sealing compounds, friction materials, gun plastic portland cement, mastics, textured paints, phenolic molding compounds

PRODUCT APPLICATION BY GRADES

Fibre Grade by Length	Characteristics by degree of opening	Uses
7M-3	Medium High Bulk	Latex paper & felts, caulking & sealing compounds, acoustical & fireproofing insulations, friction materials
7M-5	Medium Bulk	Asbestos millboard, asbestos paper, friction materials, cold molded plastic, extruded asbestos cement products
7M-90	Low Bulk	Insulation, refractory cements, refractory hot tops
Pavebestos	Medium Bulk	Hot mix asphalt paving
7RS-1	High Bulk	Adhesives, latex paper, asphalt compounds, caulking & sealing compounds, latex paper & felts, emulsified asphalt paving, mastics, textured paints, airless spray coatings
7R-3	Medium Bulk	Adhesives, caulking & sealing compounds, floor tile, latex papers & felts, welding rods, extruded asbestos-cement products, millboard, latex paper
7R-33	Medium Bulk	Caulking & sealing compounds
7TS-1	High Bulk	Asphalt compounds, caulking & sealing compounds, adhesives, mastics, textured paints, refractory hot tops
7TS-3	Medium Bulk	Floor tile, latex paper & felts
7TS-7	Medium Bulk	Floor tile, latex paper & felts

PRODUCT APPLICATION BY GRADES

Fibre Grade by Length	Characteristics by degree of opening	Uses
7T-5	Medium Bulk	Caulking & sealing compounds, floor tile, phenolic molding compounds
7W	Crudy	Roofing shingles, Class A
7RF-66	High Bulk	Drywall joint cement, textured paints, asphalt compounds, mastics, adhesives, airless spray coatings
7RF-10	Medium Bulk	Asphalt compounds, drywall joint cement, textured paint, mastics
7RF-9	Medium Bulk	Adhesives, asphalt compounds, caulking & sealing compounds, drywall joint cement, phenolic molding compounds, textured paint, mastics, airless spray coatings, ceramic tile cements
7TF-8	Low Bulk	Caulking & sealing compounds, drywall joint cement, phenolic molding compounds, textured paints, asphalt compounds, ceramic tile cement, mastics, airless spray coatings
7TF-12	Very Low Bulk	Drywall joint cements, phenolic molding compounds, textured paints

It is difficult to say that Carey-Canadian has an exact equivalent to a competitive product, or that a competitor's product will match exactly with our asbestos grades. However, there are similarities close enough whereby the user with appropriate adjustment in his formula may arrive at the desired results when comparing asbestos within the same fibre length and degree of surface area.

PRODUCT USEAGE (1)

ACETYLENE CYLINDERS — Cylinders must be filled with porous castable mineral filler which is reinforced with long fibre asbestos.

ADHESIVES — In adhesives of all sorts, asbestos provides the usually expected improvements such as increased bridging effect, greater strength, increased heat resistance, and improved spreadability. In solvent type adhesives asbestos also provides solvent hold-out to reduce skinning and spot drying.

ASBESTOS CEMENT — Building material and piping products made from asbestos and cement are the biggest consumers of asbestos on a world wide basis.

ASPHALT — This represents one of the larger groups of materials using asbestos fibre.

In asphalt's of all types the general benefits of asbestos are increased resistance to high temperature flow, increased resistance to cracking at low temperatures, reduced low temperature brittleness, increased tensile strength, increased fire resistance, and overall viscosity control. High fire resistant asphalt roofing shingles contain large amounts of asbestos fibres which in the U.S. will allow a class A fire resistant rating.

Asphalt coating materials contain various amounts of asbestos to strengthen them and to provide desired viscosity ranging from thin brush or spray applied paints to heavy bodied trowelable roofing cements.

Automotive undercoatings and frame paints are common items containing asbestos. Asphalt road paving materials represent the largest virtually untapped market for asbestos that exists. Data from laboratory trials as well as test installations show that a small addition of asbestos will give longer life to bituminous concrete roads. Critical service conditions at several airports and bridges have been met by asphalt-asbestos mixtures. Paving joint fillers are also improved by asbestos addition. Water based emulsions of asphalt-asbestos mixes are used on walk-ways, driveways, and tennis courts.

CAULKING & SEALING COMPOUNDS — Asbestos finds wide scale use in the manufacture of caulks and sealants used in commercial and residential construction as well as in the manufacture of automobiles, trucks, motor homes, mobile homes, etc. Asbestos not only gives reinforcement but it also allows the materials to be produced in the form of rope.

CEMENTS — Asbestos is an important reinforcing filler and water retention aid for gypsum wallboard joint cement compounds and ceramic tile cements. Also asbestos provides a smooth, buttery consistency which allows for easy application.

DRILLING MUD — The same water holding characteristics that make asbestos useful in concrete work make it an important ingredient in drilling muds. The soft, silky nature of Carey-Canadian fibres, along with their water holding capacity make them a good choice for supplying lubricity and flushing action in drilling operations of many types.

FRICTION MATERIALS — High heat resistance and coefficient of friction make asbestos an ideal, low cost material for use in friction materials.

GUNNITE AND PUMPABLE STUCCO — Materials of these types should have a water retention property so that the pressures used to move the mix over some distance will not cause a separation of water and make for a dry mix. Asbestos performs this function as well as increasing lubricity so that the mix may be pumped over a greater distance with less resistance. Furthermore, asbestos helps to retain water in the applied materials to promote a good cure of the cement along with improving the flexural strength by reinforcement.

MILLBOARD — Asbestos combined with small amounts of portland cement forms Millboard, the familiar white fireproof materials used in electrical appliances and equipment, ironing boards, safes, etc.

PAINTS — Not only do a wide variety of paints already contain asbestos, but there are a great many other paints that will benefit from such an addition. Presently, asbestos is most frequently used in block filler and textured paints. In both types, the bridging characteristics of asbestos are of primary importance.

Block fillers are used to give a smooth appearance to such rough building materials as concrete and cinder blocks. Textured paints are used for the same purpose as well as for ceilings to give a more interesting surface. While not a true thixotrope, in most cases asbestos offers a wide potential range of viscosity modification and is fully compatible with both water and hydrocarbon based paints.

In addition to viscosity control, asbestos adds greatly to the dry film strength and total solids content at a very low cost. The resistance of asbestos to ultra-violet light and ozone eliminates common problems found with many other paint additives. Unlike chemical thickeners that gel water or solvent, with no real contribution to the dry film solids content, all of the asbestos added becomes an integral part of the dried film.

PAPER & FELT — Asbestos papers and felts are used for roofing, pipeline wrapping, vinyl flooring and gaskets.

PROTECTIVE COATINGS — Virtually all types of protective coatings benefit by the addition of asbestos fibres in the same manner as paints.

PLASTER — Asbestos used in plaster increases the crack resistance of finished wall and acts as a water retention agent.

PLASTICS — Asbestos is commonly used in plastics, i.e., polyester, PVC, and phenolics. It contributes to increased tensile and impact strength, reduced coefficient of thermal expansion, and increased temperature resistance.

REFRACTORY CEMENTS — Refractory cements generally cure to become brittle materials unless strengthened by the addition of asbestos fibres. Asbestos further aids in water retention and trowelability. It is the only economical fibre that can withstand the temperatures encountered.

SHEET PACKING — Asbestos rubber sheet packing is an old established market around the world for asbestos fibre.

VINYL RESILIENT FLOORINGS — Vinyl sheet flooring with asbestos paper backing is one of the newest and most important markets for asbestos shorts. The other important market for asbestos shorts is the long time established vinyl and asphalt tile flooring.

**PRODUCTS UTILIZING ASBESTOS
AND
RECOMMENDED CAREY-CANADIAN GRADES**

Important Products Containing Asbestos	Recommended Carey-Canadian Grades
Acetylene Cylinders	4K-1, 4T-1
Adhesives	7RS-1, 7R-3, 7TS-1, 7RF-9, 7RF-66
Asbestos-Cement Products	4K-1, 4T-1, 5D-1, 5K-1, 5R-1, 5R-5, 6D-1
Extruded	6D-01, 7MS-1, 7M-5, 7R-3
Asbestos Millboard	4K-1, 4T-1, 5D-1, 5K-1, 5R-1, 6D-1, 7D-3, 7M-5, 7R-3
Asbestos Papers & Felts (starch bonded)	4K-1, 4T-1, 5D-1, 5K-1, 5R-1, 6D-1, 7D-3, 7M-5
Asbestos Papers & Felts (latex bonded)	6D-01, 7D-1, Festbestos, 7MS-1, 7M-3, 7RS-1, 7TS-3, 7TS-7
Asphalt Compounds	6D-01, 7D-1, 7MS-1, 7RS-1, 7TS-1, 7RF-9, 7RF-10, 7RF-66, 7TF-8
Airless Spray	7RS-1, 7RF-9, 7RF-66, 7TF-8
Asphalt Paving	
Hot Mix Finish Coarse & Overlay	Pavebestos
Emulsified Paving	7MS-1, 7RS-1
Caulking & Sealing Compounds	6D-01, 7D-1, 7D-3, 7MS-1, 7M-3, 7RS-1, 7R-3, 7R-33, 7TS-1, 7T-5, 7RF-9, 7TF-8
Cements	
Dry Wall Joint	7RF-9, 7RF-66, 7RF-10, 7TF-8, 7TF-12
Gun Plastic Portland	7MS-1
Insulating Finishing	7M-90
Ceramic Tile	7RF-9, 7TF-8

Important Products Containing Asbestos	Recommended Carey-Canadian Grades
Chlorine Cells	4K-1, 4T-1
Filters	4K-1, 4T-1
Floor Tiles (vinyl, asphalt, rubber)	7R-3, 7TS-3, 7TS-7, 7T-5
Friction Materials	4K-1, 4T-1, 5K-1, 5R-1, 5R-5, 7D-1, 7H, 7D-3, 7M-5
Insulation	
Calcium Silicates, Pipe Covering, Blocks & Boards	4K-1, 4T-1, 6D-1, 7D-3
Acoustical & Fireproofing	4T-1, 5D-1, 5R-1, 5R-01, 6D-1, 7M-3
Mastics	7MS-1, 7RS-1, 7TS-1, 7RF-9, 7RF-10, 7RF-66, 7TF-8
Paints, Textured & Block Filler	7MS-1, 7RS-1, 7TS-1, 7RF-9, 7RF-10, 7RF-66, 7TF-8, 7TF-12
Plastics	
Cold Molded	5R-1, 6D-1, 7D-3, 7M-5, 7T-5
Phenolic Compounds	5R-1, 6D-1, 7D-3, 7MS-1, 7T-5, 7RF-9, 7TF-8, 7TF-12
Pulp Cement Boards	5R-1, 6D-1, 7D-3
Sheet Packing	4K-1, 4T-1, 5D-1, 5K-1, 5R-1, 5R-5, 6D-1, 7D-3
Refractory Hot Tops	4T-1, 5R-1, 5R-01, 7D-3, 7M-90, 7TS-1
Roofing Shingles, Class A	7W
Textiles	4K-1, 4T-1

CAUTION

WHEN HANDLING ASBESTOS FIBRES AVOID
CREATING DUST - BREATHING ASBESTOS DUST
MAY CAUSE SERIOUS BODILY HARM

DOES ASBESTOS FIBRE PRESENT AN OCCUPATIONAL HEALTH HAZARD?

Yes, exposure to asbestos dust over a period of several years increases the risk of developing certain diseases. However, the risk becomes apparent according to the level of exposure. The experts are not all in agreement on the level of the threshold limit. Several studies accept and recommend timeweighted average of 5 fibres per cubic centimetre, while others prefer 2 fibres per cm^3 . The report of the Study committee on health in the asbestos industry recommends a maximum ceiling of 5 fibres per cm^3 .

Among the diseases related to asbestos fibre, there is first of all asbestosis which damages the lungs and affects breathing. This disease appears in those who have been exposed to abnormal concentrations of asbestos dust for several years.

In addition, those who have contracted asbestosis are more exposed to the risks of lung cancer. This risk of lung cancer is greatly increased by the use of tobacco.

Added to this is a very rare form of cancer called mesothelioma. Out of 314 cases found in Canada from 1960 to 1974, only 9 were associated with asbestos mines in Quebec. This cancer appears on the pleural lining (pleura) or on the intestinal lining (peritoneum). Mesothelioma is particularly associated with crocidolite asbestos, which is not found in Quebec, and can occur at lower levels of exposure.

Studies carried out on workers in the asbestos industry in England and Canada have shown that there was no excess mortality among groups subjected to light or moderate exposure to asbestos fibre. McGill University has studied the health of several thousand former and present workers in chrysotile asbestos mines in Quebec. The various studies, published in the Archives of Environmental Health, show a higher mortality rate solely among those workers who, during their period of employment, 30 or 40 years ago, were exposed to the strongest concentrations of chrysotile asbestos dust.

TO WHAT EXTENT IS CHRYSOTILE ASBESTOS AN OCCUPATIONAL HEALTH PROBLEM?

-- It is quite evident that those cases which still appear at present, because of the long period of latency encountered in diseases related to asbestos, are attributable to inhalation of asbestos dust in abnormal quantity at a time when medical and technological knowledge did not permit evaluation of the danger nor the cleansing of the ambient atmosphere which are possible today. However, with the growth of medical knowledge, mainly in the last 15 years, and the improvement of methods of control in the same period, the incidence of diseases related to asbestos will diminish to the point that they will no longer be a problem.

IS ASBESTOS A MAJOR AIR POLLUTANT?

No. The measurement of asbestos fibre in the urban environment is extremely difficult because the amounts are so minute, especially in relation to the considerable amounts of other more quantifiable pollutants.

Conducted by an asbestos research group at New York's Mount Sinai Hospital, dust counts in New York City and other urban areas of the U.S. show that asbestos levels in the community air are many times lower than levels considered to be safe for workers who actually handle asbestos.

In England, the Asbestosis Research Council found that the concentrations measured in urban areas have been at least a 1,000 times less than the level which would be acceptable under the British Asbestos Regulations for a worker in an asbestos factory throughout his working lifetime.

In mining areas, asbestos producers have installed filters on dryer stacks and are experimenting on tailings disposal to eliminate dust emissions.

Small amounts of asbestos fibre from natural sources, such as weathering of surface outcrops, have existed in the atmosphere for perhaps millions of years. Humans thus probably evolved into their present form in an atmosphere containing some asbestos.

DO BRAKE LININGS EMIT ASBESTOS INTO THE AIR?

Hardly any – a study by the U.S. Public Health Service shows that only a tiny fraction of the asbestos in brake linings is released to the air in its original form when brakes are applied. The action of heat converts the rest into forsterite, a non-fibrous, inert and harmless material.

Experiments carried out by various Government and industrial laboratories throughout the world have shown that the free asbestos fibre in the small amount of dust liberated from brake linings rarely exceeds one per cent of the total products of wear. Possible danger from brake linings exists only for the garage mechanic who cleans or repairs brakes. This work can be done without danger by following the preventive methods indicated.

DOES ASBESTOS PRESENT A RISK TO THE GENERAL PUBLIC?

In October 1972, the International Agency for Research on Cancer held an International Conference in Lyon, France, with 137 participants from 20 countries to review all the evidence relating asbestos with cancers. At the end of the conference an Advisory Committee consisting of more than thirty of the world's leading medical and other scientific experts on this subject, was appointed to prepare a report to the Agency's Director. The general review was prepared in the form of answers to a number of important general questions.

Is there evidence of a risk of lung fibrosis...an increased risk of lung carcinoma...and mesothelial cancer from low levels of exposure to asbestos such as have been encountered by the general population in urban areas?

"There is at present no evidence of lung damage by asbestos to the general public. The amount of asbestos in the lungs of members of the general public is very small, compared to those occupationally exposed"... "The evidence of an exposure response relationship based in part on past dust measurements and in part on the type of job within the industry suggests that an excess lung carcinoma risk is not detectable when the occupational exposure has been low. These low occupational exposures have almost certainly been much greater than that to the public from general air pollution"... "There is evidence of no excess risk of mesotheliomas from asbestos air pollution which has existed in the neighbourhood of chrysolite and amosite mines"

....

Furthermore "evidence as there is does not indicate any risk of an increased risk of cancer resulting from asbestos fibres present in water, beverages, food or in the fluids used for the administration of drugs".

COULD THE USE OF ASBESTOS PRODUCTS BY THE GENERAL PUBLIC CAUSE DISEASE?

No. In many asbestos products the fibre is "locked-in" by another material. In asbestos-cement sheet, for example, it is "locked-in" by cement; in brake and clutch linings by a fully baked resin; in gaskets by rubber or synthetic rubber. Other asbestos materials like asbestos cloths can be given treatment to reduce dust emission. So many modern asbestos products are not by their nature dusty to handle. There is no evidence, scientific or otherwise, that anyone in the general public has contracted any disease as a direct result of using asbestos products in their homes or from exposure to the very small amounts of asbestos released into the atmosphere through the application, use, wearing or weathering of finished asbestos products.

ONCE ASBESTOS ENTERS THE LUNG, DOES ALL OF IT REMAIN THERE FOREVER?

No. Most of the asbestos fibres which are inhaled are trapped in the nose or upper airways and are eliminated by the normal clearing mechanisms. Only a small percentage of respirable fibres will enter the lung and even then most of these will be dealt with by the clearing mechanisms and slowly eliminated. If excessive concentrations of asbestos fibre have been inhaled the small proportion which the lungs cannot clear may ultimately cause damage many years later.

CAN CHRYSOTILE ASBESTOS BE SAFELY USED IN THE WORKPLACE?

Yes - chrysotile asbestos fibre and asbestos products can be handled and used on the job with perfect safety so long as certain basic precautions are followed. These include the careful handling of containers to prevent spillage, the use of dust control exhaust equipments where dust is unavoidably created, the wearing of protective respirator equipment where necessary, as well as good housekeeping with regard to dust clean-up and disposal procedures.

WHAT ABOUT SUBSTITUTES FOR ASBESTOS?

Because of the unique combination of characteristics which asbestos has to offer no one substitute can replace it. However, the asbestos industry itself has led the way in seeking and developing new and alternative materials for those applications where safe working with asbes-

tos is difficult. Where asbestos products are manufactured and used safely there is no need for substitutes. It must also be remembered that from the health standpoint more is known about the potential hazards of asbestos and the proper means for controlling them than is the case with materials that might be used to replace it. So it is often unwise to substitute materials whose health effects are unknown for asbestos, which in many essential uses is the best material.

WHAT IS INDUSTRY DOING ABOUT THE PROBLEM?

A lot – the Canadian asbestos-mining industry sponsored in the 1930s some of the first studies of asbestos-related disease ever undertaken in North America. These studies provided information that became the basis for environmental control programs in the industry which have been refined and expanded over the years. Millions of dollars have been devoted to sophisticated equipment and techniques aimed at preventing asbestos dust from being inhaled by workers in the mining and milling of chrysotile asbestos and in the manufacture of asbestos-containing products.

Through the Institute of Occupational and Environmental Health in Montreal, the Industrial Hygiene Foundation in Pittsburgh and in various hospitals and universities around the world, the industry has sponsored and continues to support major epidemiological and other research projects designed to identify and eliminate asbestos-related health risks not only for Canada's chrysotile asbestos production workers but also for worldwide fabricators and applicators of finished asbestos-containing products.

WHAT DOES ALL THIS ADD UP TO?

Recent public discussion of the health implications of exposure to asbestos dust has led to the unwarranted and erroneous assumption that data on health risks associated with heavy long-term on-the-job exposure in the past are applicable to the general public and to many jobs in industry where asbestos products can be handled with complete safety.

The known medical facts, supported by studies of groups of exposed workers over 40 years, are that:

1. Asbestos-related health risks are basically confined to the work environment. The risks are well known and are controlled by Government regulations.
2. Asbestos-related diseases develop, generally, only after the inhalation of abnormal quantities of airborne asbestos dust.
3. Concentrations of this order have not been found in the general urban atmosphere, and the general public are not at risk on this account.

© THE QUEBEC ASBESTOS MINING ASSOCIATION
QUEBEC, QUEBEC, CANADA

TO: J. P. Bolduc G. Vaillancourt
P. A. Cyr M. Roy
FROM: C. R. Therrien M. Sevigny
M. Prus

DATE: August 22, 1972

CC: File

SUBJECT: O.S.H.A. - Q.A.M.A. LABEL

It is very important that each bag of fibre exported to the U.S. bears one or the other of the following labels.

O.S.H.A.

CAUTION

CONTAINS ASBESTOS FIBRES
AVOID CREATING DUST
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM.

Q.A.M.A.

CAUTION

THIS BAG CONTAINS CHRYSOTILE ASBESTOS
FIBRE. PERSONS EXPOSED TO THIS MATERIAL
SHOULD USE ADEQUATE PROTECTIVE DEVICES
BECAUSE IT HAS BEEN ALLEGED THAT
INHALATION OF THIS MATERIAL OVER LONG
PERIODS MAY BE HARMFUL.

This notice also has to appear on every bag of "FIREBAR" even if this product is not composed of pure asbestos.

As soon as our present inventory of bags will be used, every new order will have to bear O.S.H.A.'s label. For the moment Q.A.M.A.'s label is still acceptable.

This notice applies also to all exports to Europe and elsewhere throughout the world.

ANY MISTAKE ON OUR PART MAY CAUSE US SERIOUS PROBLEMS.

Translated from French to English by John Sztuke, typed by Betty Lessard on July 29th, 1977.

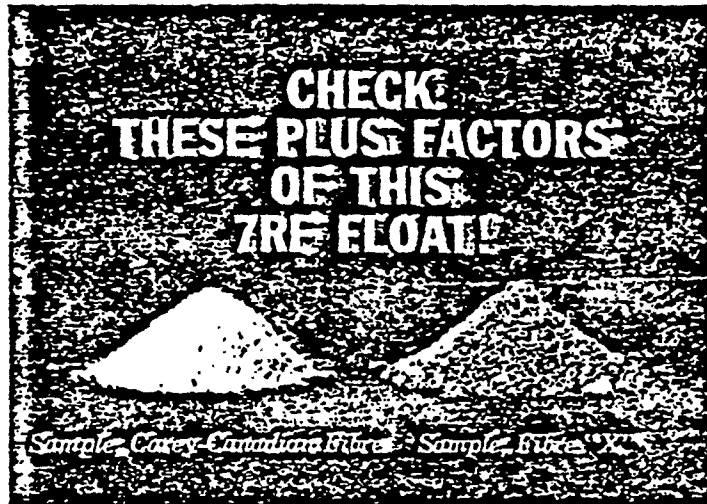
John Sztuke
JOHN SZTUKÉ

29/VIII/77
DATE

Betty Lessard
BETTY LESSARD

29/VIII/77
DATE

Exhibit "H"



1. Unusual whiteness
2. Low iron content
3. Low grit content
4. Uniform fibre length

Carey-Canadian's NEW 7RF-7, now available in commercial quantities has proved to be of extreme interest to resin compounders, joint cement manufacturers and others seeking an air chamber asbestos float with the above properties.

Samples and complete information on 7RF-7 floats may be obtained by writing any address below or by contacting your Carey-Canadian Sales Engineer.

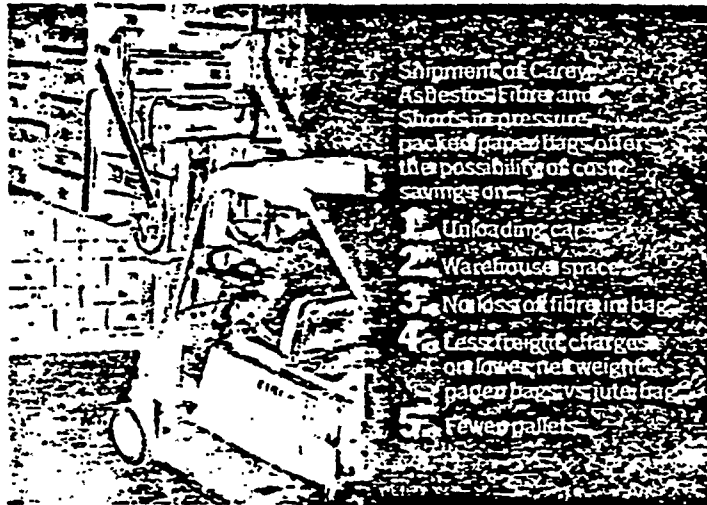
Carey® ASBESTOS FIBRE
 Carey-Canadian Mines, Ltd., East Broughton Stn., P.Q.
 The Philip Carey Co., Ltd., Ville St. Laurent, Montreal 9, P.Q.
 The Philip Carey Company • Lockland, Cincinnati 15, Ohio

This Advertisement appears in: ASBESTOS, January, 1959.

CA-1508

Exhibit "I"

You can cut fibre handling costs!



Shipment of Carey

Asbestos Fibre and

Shocks in pressure

packed paper bags offer

the possibility of cost

savings on:

1. Unloading cars

2. Warehouse space

3. No loss of fibre in bags

4. Less freight charges

on lower net weights

paper bags vs. jute bag

5. Fewer pallets

Additional cost savings may also be accomplished by shipment of pressure-packed paper bags unitized-loaded on an expendable paperboard pallet. Carey-Canadian unitizes a 3500 lb. load on an expendable paperboard pallet permitting easy removal by fork lift truck from the freight car. 87% of the car can be unloaded in this manner, thereby saving many man hours.

Ask your Carey-Canadian Fibre Sales Engineer or write any of the addresses below for complete details:



ASBESTOS FIBRE

Carey-Canadian Mines, Ltd., East Broughton Sta. P.Q.

The Philip Carey Co., Ltd., Ville St. Laurent, Montreal 2, P.Q.

The Philip Carey Company, Lockland, Cincinnati 13, Ohio

This Advertisement appeared in:
ASBESTOS, February, March, April and May, 1959.

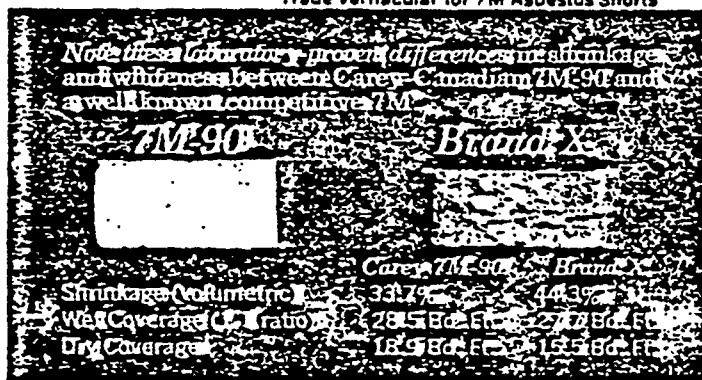
CA-1528

\$ CONTRACTORS

save money on "BlueMud"!*

New Carey-Canadian 7M-90 has the following advantages • Trowels easier—reduces labor costs • Whiter finish • 15% less shrinkage • 10% more dry coverage • Hard, non-dusting surface • Competitively priced to save you money.

*Trade vernacular for 7M Asbestos Shorts



Information and samples may be obtained from your Carey Asbestos Fibre Sales Engineer or by contacting Carey-Canadian Mines, Ltd., P. O. *Carey* Box 95, Lockland, Cincinnati 15, Ohio, or Carey-Canadian Mines, Ltd., East Broughton Station, P.Q., Canada.

CA-1684

This Advertisement appears in: ASBESTOS, March, 1960.



1. UNUSUAL WHITENESS
2. LOW IRON CONTENT
3. GRIT-FREE
4. UNIFORM FIBRE LENGTH
5. HIGH FIBRE VALUE
(90% on 100 mesh)

Carey-Canadian's 7RF-9, available in commercial quantities, has proved to be of extreme interest to resin compounders, joint cement manufacturers and others seeking an asbestos float with the above properties.

Samples and complete information on Carey-Canadian 7RF-9 floats may be obtained from the warehouse locations listed below or by writing to Carey-Canadian Mines, Ltd., P.O. Box 15095, Lockland, Cincinnati, Ohio 45215, or The Philip Carey Company, Ltd., Ville St. Laurent, Montreal 9, P. Q., Canada.

Carey[®]

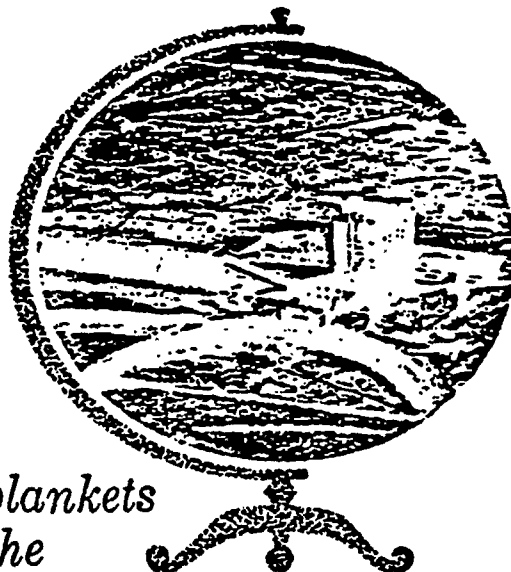
Warehouse stock located at:

Baltimore, Md.
Brooklyn, N.Y.
Brooklyn, N.Y.
Buffalo, N.Y.
Chicago, Ill.
Cleveland, Ohio
Dallas, Texas
Davenport, Iowa
Des Moines, Iowa
Detroit, Mich.
Garwood, N.J.
Houston, Texas
Indianapolis, Ind.
Kansas City, Mo.
Knoxville, Tenn.
Little Rock, Ark.
Los Angeles, Calif.
Memphis, Tenn.
Milwaukee, Wisc.
Minneapolis, Minn.
New Orleans, La.
Oklahoma City, Okla.
Philadelphia, Pa.
Pittsburgh, Pa.
St. Louis, Mo.
San Francisco, Calif.
Seattle, Wash.
Trenton, N.J.
Winchester, Mass.

A. B. Kohl Sales Company
Empire Ace Insulation Mfg. Company
Smith Chemical & Color Company
Commercial Chemicals, Inc.
Chicago Firebrick Company
Donald McKay Smith, Inc.
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
A. E. Fleming Company
Asbestos Corporation of America
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
A. G. Heins Company
Thompson-Hayward Chemical Company
E. S. Browning Company
Thompson-Hayward Chemical Company
Sprinkmann & Sons
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
Thompson-Hayward Chemical Company
George A. Rowley & Company, Inc.
McCann-Shields Paint Company
Thompson-Hayward Chemical Company
E. S. Browning Company
Durkin Chemicals, Inc.
H. M. Royal, Inc.
W. D. Eggleston Company, Inc.

CA-2316

This Advertisement will appear in: ASBESTOS, March, 1965 through February, 1966.



*blankets
the
earth*... ASBESTOS FROM CAREY-CANADIAN

Carey-Canadian Mines, Ltd., one of the world's largest producers of asbestos fibre, can serve your needs around the world. Overseas sales agents are listed below. Additional information may be obtained by writing to Carey-Canadian Mines, Ltd., P. O. Box 15095, Lockland, Cincinnati, Ohio 45215.

Globe, N.S.W., Australia
Wien, Austria
Taipei, Taiwan, China
Copenhagen, Denmark
London, England
Helsinki, Finland
Paris, France
Duisburg, Germany
Ludwig, Germany
Calcutta, India
Tel-Aviv, Israel
Tokyo, Japan
Seoul, Korea
Haarlem, Netherlands
Auckland, C.I., New Zealand
Durban, South Africa
Buenos Aires, Argentina, S.A.
San Paulo, Brazil, S.A.
Barranquilla, Colombia, S.A.

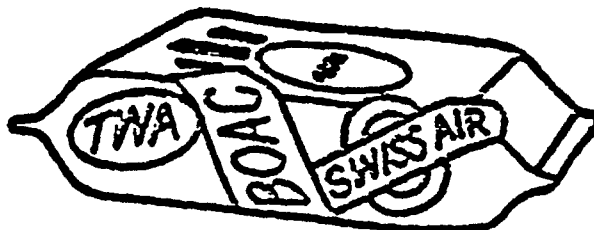
Chemical Materials, Ltd.
Robert Weiss
Zhang Tai Mercantile Company
Andreas Jansen A/S
Central Asbestos Company, Ltd.
Oy Ma
Compagnie Commerciale de Minerais Et Matieres Premieres
Deutsche Asbest-Gesellschaft G.M.B.H.
Potsdam Erzeugnisse
Export Agency Service Private, Ltd.
K. J. Dierckx
T. Katschke & Company, Ltd.
Hill-Hung Trading Co.
Chemische Productiehandel J. J. Van De Vrande
Hall, Cropper & Company, Ltd.
John Smith Pty. Limited
Wm L. Smith, S.A.
Isabirato
General Sales Corp. Ltda.

Carey.

CA-2371

This Advertisement will appear in: ASBESTOS, August, 1965.

The Worldly Asbestos



Carey-Canadian Mines, Ltd., one of the world's largest producers of asbestos fibre, can serve your needs around the world. Overseas sales agents are listed below. Additional information may be obtained by writing to

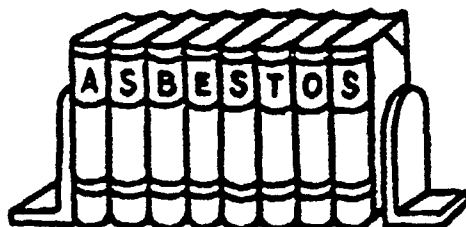
Dept. ASB1073, Carey-Canadian Mines, Ltd.
3460 Cumberland Parkway, N.W.
Atlanta, Georgia 30339

CAREY.

Mt Waverly, Victoria, Australia	K. V. Robinson & Ass Pty., Ltd
Wien, Austria	Robert Weisz
Copenhagen, Denmark	Andreas Jernow A/S
London, England	Central Asbestos Company, Ltd.
Helsinki, Finland	Oy Max Aus
Paris, France	G. Devineau, S.A.
Duisburg, Germany	Deutsche Asbest-Gesellschaft G.m.b.H.
Lubeck, Germany	Posselt Erzkontar
Athens, Greece	A. D. Patschopoulos & Company
Calcutta, India	Expert Agency Service Private, Ltd.
Tel-Aviv, Israel	K. J. Deutsch
Torino, Italy	Franco Roi
Tokyo, Japan	T. Kakiuchi & Company, Ltd
Seoul, Korea	Bryony Corporation
Mexico City, Mexico	Productos Quimicos Mardupol, S.A.
Haarlem, Netherlands	Chemische Productienhandel J.J. Van De Vrande
Auckland, C.I., New Zealand	Neil, Cropper & Company, Ltd.
Ponce, Puerto Rico	Pono Rico Iron Works
Buenos Aires, Argentina, S.A.	Will L. Smith, S.A.
Sao Paulo, Brazil, S.A.	ICI-Intercambia Commercial Internacional Ltda.
Barranquilla, Colombia, S.A.	General Sales Corp. Ltda.
Lima, Peru, S.A.	Ralph W. Gubertez
Valencia, Spain	Guzman, S. A.
Stockholm, Sweden	N. AS Nicola Johansson
Caracas, Venezuela	Ing. N. Sekler Y Asociados S. R. L.

ASBESTOS - October 1973

The Complete Asbestos



You'll find everything you want in the wide range of Carey-Canadian asbestos fibre grades . . . unusual whiteness, low iron content, uniform fibre length, high fibre value, good lubricity and a complete absence of troublesome grit. You'll also find them readily available in warehouses in key areas across the country.

For samples and data contact the warehouse nearest you or write
Dept. ASB1173, Carey-Canadian Mines, Ltd.
3460 Cumberland Parkway, N.W.
Atlanta, Georgia 30339

CAREY.

Warehouse stocks at:

Atlanta, Thompson-Hayward Chem. Co.	Memphis, Thompson-Hayward Chem. Co.
Baltimore, A. B. Kohl Sales Co.	Minneapolis, Thompson-Hayward Chem. Co.
Birmingham, Thompson-Hayward Chem. Co.	Mobile, Thompson-Hayward Chem. Co.
Brooklyn, Smith Chem. & Color Co.	Montgomery, Ala.,
Buffalo, Commercial Chemicals, Inc.	Thompson-Hayward Chem. Co.
Chicago, Chicago Firebrick Co.	Nashville, Thompson-Hayward Chem. Co.
Cleveland, Donald McKay Smith, Inc.	New Orleans,
Dallas, Thompson-Hayward Chem. Co.	Thompson-Hayward Chem. Co.
Davenport, Iowa,	Oklahoma City,
Thompson-Hayward Chem. Co.	Thompson-Hayward Chem. Co.
Denver, Plateau Supply Co.	Omaha, Thompson-Hayward Chem. Co.
Des Moines, Thompson-Hayward Chem. Co.	Philadelphia, George A. Rowley & Co., Inc.
Detroit, A. E. Fleming Co.	Pittsburgh, McCann-Sheeks Paint Co.
Hallandale, Fla.,	Portland, Durkin Chemicals, Inc.
Thompson-Hayward Chem. Co.	Seattle, Durkin Chemicals, Inc.
Houston, Thompson-Hayward Chem. Co.	Shreveport, Thompson-Hayward Chem. Co.
Huntsville, Ala.,	St. Louis, Thompson-Hayward Chem. Co.
Thompson-Hayward Chem. Co.	San Francisco, E. S. Browning Co.
Indianapolis, Thompson-Hayward Chem. Co.	Tampa, Thompson-Hayward Chem. Co.
Kansas City, Mo.,	Trenton, N. J., H. M. Royal, Inc.
Thompson-Hayward Chem. Co.	Tulsa, Thompson-Hayward Chem. Co.
Little Rock, Thompson-Hayward Chem. Co.	Wichita, Thompson-Hayward Chem. Co.
Los Angeles, E. S. Browning Co.	Winchester, Mass., W. D. Egleston Co., Inc.

ASBESTOS - November 1973

Carey Floats!

The 7RF-9: A grit free, unusually white float with a



high value fibre of uniform length and low iron content. It's one of many cards up our sleeve to solve a manufacturer's asbestos problems. So why float alone when you are selecting asbestos?

Let us Carey your load. We're 99 1/100% pure.

CAREY MEANS BUSINESS AND BUSINESS MEANS YOU

a Jim Walter company

CAREY.

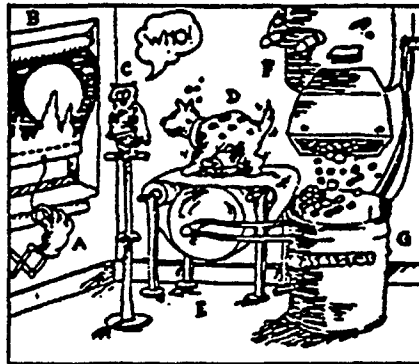
Carey-Canadian Mines, Ltd. 3450 Cumberland Parkway, N.W.
Atlanta, Georgia 30339 USA Phone (404) 432 0131
Cables CAREY • Telex WUD 54-9505 CAREYMINES ATL

UNITED STATES • ATLANTA, Thompson-Hayward Chem. Co. • BALTIMORE, A. B. Kohl Sales Co. • BIRMINGHAM, Thompson-Hayward Chem. Co. • BOSTON, Wm. D. Eggleston Co., Inc. • BROOKLYN, Empire Ace Insulation Mfg. Corp. • BUFFALO, Commercial Chemicals Inc. • CHICAGO, Chicago Fire Brick Co. • CLEVELAND, Donald McKay Smith, Inc. • DALLAS, Thompson-Hayward Chem. Co. • DENVER, Plateau Supply Co. • DETROIT, A. E. Fleming Co. • HOUSTON, Thompson-Hayward Chem. Co. • INDIANAPOLIS, Thompson-Hayward Chem. Co. • KANSAS CITY, Thompson-Hayward Chem. Co. • LITTLE ROCK, Thompson-Hayward Chem. Co. • LOS ANGELES, John K. Bice Co. • MEMPHIS, Thompson-Hayward Chem. Co. • MIAMI, Thompson-Hayward Chem. Co. • MINNEAPOLIS, Thompson-Hayward Chem. Co. • NASHVILLE, Thompson-Hayward Chem. Co. • NEW ORLEANS, Thompson-Hayward Chem. Co. • NEW YORK, Smith Chemical & Color Co., Inc. • NEWARK, Asbestos Corp. of America • OKLAHOMA CITY, Thompson-Hayward Chem. Co. • PHILADELPHIA, George A. Rowley & Co., Inc. • PITTSBURGH, McCann-Shields Paint Co. • PORTLAND, Durkin Chemicals Inc. • SAN FRANCISCO, Carmona Chemical Co. • SEATTLE, Durkin Chemicals Inc. • ST. LOUIS, Thompson-Hayward Chem. Co. • TAMPA, Thompson-Hayward Chem. Co. • TRENTON, H. M. Royal, Inc. • TULSA, Thompson-Hayward Chem. Co. • CANADA • HAMILTON, Canada Colors & Chemicals, Ltd. • MONTREAL, Canada Colors & Chemicals, Ltd. • TORONTO, Canada Colors & Chemicals, Ltd. • VANCOUVER, Canada Colors & Chemicals, Ltd.

ASBESTOS - July 1974

Tired of do-it-yourself asbestos kits?

Asbestos samples can't talk and catalogs won't



listen. When you need help, wouldn't you rather talk to a person? That's what Carey-Canadian is all about. The next time you're developing a new product or

reordering to match specifications, why not send us a stamped, self-addressed envelope and we'll send you a Carey-Canadian man.

CAREY MEANS BUSINESS AND BUSINESS MEANS YOU

CAREY.

a Jim Walter company

Carey-Canadian Mines Ltd. 3480 Cumberland Parkway, N.W.
Atlanta, Georgia 30339, USA Phone: (404) 432-0131
Cables: CAREY • Telex: WUD 54-8505 CAREYMINES ATL

UNITED STATES • ATLANTA, Thompson-Hayward Chem. Co. • BALTIMORE, A. B. Kohl Sales Co. • BIRMINGHAM, Thompson-Hayward Chem. Co. • BOSTON, Wm. D. Egerton Co., Inc. • BROOKLYN, Empire Ace Insulation Mfg. Corp. • BUFFALO, Commercial Chemicals Inc. • CHICAGO, Chicago Fire Brick Co. • CLEVELAND, Donald McKay Smith, Inc. • DALLAS, Thompson-Hayward Chem. Co. • DENVER, Plateau Supply Co. • DETROIT, A. E. Fleming Co. • HOUSTON, Thompson-Hayward Chem. Co. • INDIANAPOLIS, Thompson-Hayward Chem. Co. • KANSAS CITY, Thompson-Hayward Chem. Co. • LITTLE ROCK, Thompson-Hayward Chem. Co. • LOS ANGELES, John K. Rice Co. • MEMPHIS, Thompson-Hayward Chem. Co. • MIAMI, Thompson-Hayward Chem. Co. • MINNEAPOLIS, Thompson-Hayward Chem. Co. • NASHVILLE, Thompson-Hayward Chem. Co. • NEW ORLEANS, Thompson-Hayward Chem. Co. • NEW YORK, Smith Chemical & Color Co., Inc. • NEWARK, Asbestos Corp. of America • OKLAHOMA CITY, Thompson-Hayward Chem. Co. • PHILADELPHIA, George A. Rowley & Co., Inc. • PITTSBURGH, McCann-Shields Paint Co. • PORTLAND, Durkin Chemicals Inc. • SAN FRANCISCO, Carmona Chemical Co. • SEATTLE, Durkin Chemicals Inc. • ST. LOUIS, Thompson-Hayward Chem. Co. • TAMPA, Thompson-Hayward Chem. Co. • TRENTON, H. M. Royal, Inc. • TULSA, Thompson-Hayward Chem. Co. • CANADA • HAMILTON, Canada Colors & Chemicals, Ltd. • MONTREAL, Canada Colors & Chemicals, Ltd. • TORONTO, Canada Colors & Chemicals, Ltd. • VANCOUVER, Canada Colors & Chemicals, Ltd.

ASBESTOS - August 1974

Excuse me for looking over your shoulder...

But is there a good asbestos man around?

Don't answer that, I'll answer it myself.

There's the Carey-Canadian man.

He'll help develop your new

asbestos product. He's

determined to sit through

with you to the end of a job

to see that you get the right

grade of asbestos for the job

that you need to do.

Just say the magic word

and get a Carey-Canadian

man of your very own.



CAREY MEANS BUSINESS
AND BUSINESS MEANS YOU.

CAREY.

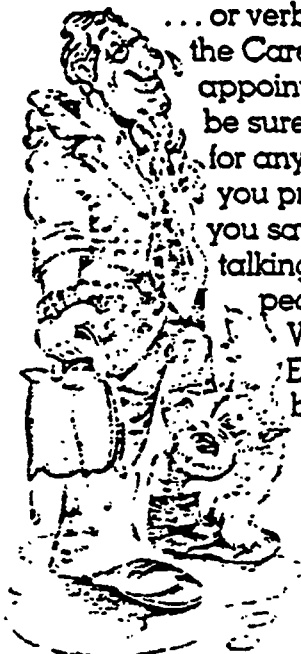
a Jim Walter company

Carey-Canadian Mines, Ltd.
3460 Cumberland Parkway, N.W.
Atlanta, Georgia 30339, USA Phone (404) 432-0131
Cables CAREY Telex WUD 54-9505 CAREYMINES ATL

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ASBESTOS - September 1974

Neither sleet, hail, snow, rain, dogs, hangovers...



... or verbose cab drivers can keep the Carey-Canadian man from his appointed rounds. He wants you to be sure you have the right asbestos for any job you do. When you do, you produce a better product and you save money. What we're really talking about is service. We send people. Carey-Canadian. Write us, or call today. Either way, wild horses won't be able to keep us away.

CAREY MEANS BUSINESS
AND BUSINESS MEANS YOU.

CAREY.
1967-78 1-800

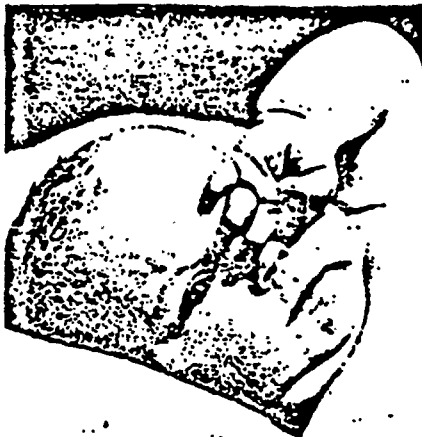
a Jim Walter company

Carey-Canadian Mines Ltd.
360 Cumberland Parkway, N.W.
Atlanta, Georgia 30339, USA
Phone (404) 432-0131 Cable CAREY
Telex WUD 54-9505 CAREYMINES ATL

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ASBESTOS - October 1974

Carey-Canadian has this young man's future in mine.



He may grow up to be a doctor.
Or he may work on a construction gang. Whatever he becomes, asbestos from Carey-Canadian will somehow touch his life.

You see, Carey-Canadian has been mining the rich fibrous Chrysotile Asbestos of Quebec since 1918. We mill and refine the ore into over 30 grades to be used in thousands of products, including paint, brake linings, acetylene cylinders and water pipes. The list is endless... and it seems that our reserves

are endless, too, with proven resources for at least 50 more years. Give your Carey-Canadian man a call today.

Carey-Canadian... one of the largest, most
trusted producers of Chrysotile Asbestos.

a Jim Walter company

CAREY.

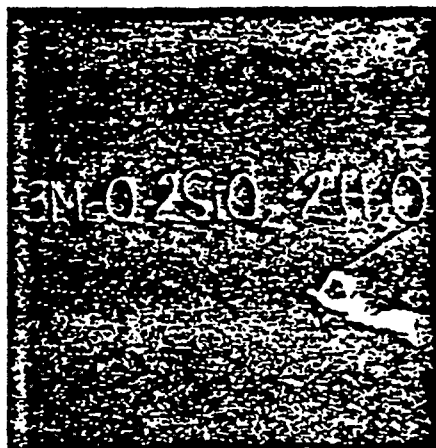
MADE IN CANADA

Carey-Canadian Mines, Ltd. • P.O. Box 190 • East Broughton Station, P.Q. • Canada G0M 1H0
Phone: (418) 426-3050 • Telex: 05-634 554 CAREYMIN EABR Cable: CARMINES EASTBROUGHTONPO

OVERSEAS • AUSTRALIA, Mt. Waverley, Melbourne: K. V. Robinson & Associates Pty. Ltd. • AUSTRIA, Wien: Robert Welsz • BELGIUM, Brussels: Keyser & Mackay • BRAZIL, Sao Paulo: ICI-Intercambio Comercial Internacional Ltda. • COLOMBIA, Barranquilla: General Sales Corporation • Bogota: Alfa Quimica • COSTA RICA, San Jose: General Agencies Co. • DENMARK, Copenhagen: Andreas Jensen A/S • DOMINICAN REPUBLIC, Santo Domingo: Muniz, Fernandez & Co. • EL SALVADOR, San Jose, C.R.: Alfa Quimica • FINLAND, Copenhagen: Andreas Jensen A/S • FRANCE, Paris: G. Devineau S.A. • GERMANY, Duisburg: Deutsche Asbest-Gesellschaft, GmbH. • Lübeck: Posselt Erzhantor GmbH. • GUATEMALA, San Jose, C.R.: Alfa Quimica • HONDURAS, San Pedro Sula: Abraham Sikany • HONG KONG, Kowloon: Keenan & Associates • INDIA, New Delhi: Toyo Menka Kaisha, Ltd. • IRAN, Teheran: Taghat Co. Ltd. • ISRAEL, Ramat-Gan: P.B.A. (Wiesner) Ltd. • ITALY, Torino: Franco Roi • JAPAN, Tokyo: T. Kikuchi & Co., Ltd. • MEXICO, Mexico City: Productos Quimicos Mardupol S.A. • NETHERLANDS, Haarlem: Chemische Productenhandel J. J. Van De Vrande • NEW ZEALAND, Mt. Waverley, Melbourne: K. V. Robinson & Associates Pty. Ltd. • NICARAGUA, San Jose, C.R.: Alfa Quimica • NORWAY, Copenhagen: Andreas Jensen A/S • PAKISTAN, Karachi: Toyomenka (Pakistan) Ltd. • PANAMA, San Jose, C.R.: Alfa Quimica • PHILIPPINES, Manila: Bizar: Keenan & Associates • SINGAPORE: Keenan & Associates • SPAIN, Valencia: Guzman S.A. • SWEDEN, Stockholm: Handelsaktiebolaget Nicolai Johansson • Copenhagen: Andreas Jensen A/S • SWITZERLAND, Zurich: Keyser & Mackay • TAIWAN, Taipei: Samson International Co. • THAILAND, Bangkok: Keenan & Associates • TURKEY, Istanbul: Chemag Ticaret—ithalat ve ihracat • UNITED KINGDOM, London: Central Asbestos Co. Ltd. • VENEZUELA, Caracas: Ing. H. Sekler, Oficina Technica s.r.l.

ASBESTOS - May 1977

Carey-Canadian is blessed with good mines.



At Carey-Canadian we hit the mother lode—several rich veins of fibrous Chrysotile Asbestos in Quebec that have served us well since 1918. They will continue to serve us for at least 50 years to come. Our outstanding quality.—uniformity, cleanliness and light color—is known throughout the world... but that's just the start of the Carey-Canadian quality story.

We start with the best raw material. Then we mill and refine and grade it with the finest equipment in the

business. Over 30 grades of asbestos are produced by Carey-Canadian to fill every need from fillers in plastics to filter media.

The Carey-Canadian sales force takes it from there to assure your getting the right grade at the right price...on time.

Carey-Canadian... one of the largest, most
trusted producers of Chrysotile Asbestos.

a Jim Walter company

CAREY.

since 1918

Carey-Canadian Mines, Ltd. • P.O. Box 190 • East Broughton Station, P.Q. • Canada G0M 1H0
Phone: (418) 426-3050 • Telex: 05-834 554 CAREYMIN EABR • Cable: CARMINES EASTBROUGHTONPO

OVERSEAS • ARGENTINA, Buenos Aires: Will L. Smith SACI • AUSTRALIA, Mt. Waverley, Melbourne: K. V. Robinson & Associates Pty. Ltd. • AUSTRIA, Wien: Robert Weiss • BELGIUM, Brussels: Keyser & Mackay • BRASIL, Sao Paulo: ICI-Intercambio Comercial Internacional Ltda. • COLOMBIA, Barranquilla: General Sales Corporation • Bogota: Alfa Quimica • COSTA RICA, San Jose: General Agencies Co. • DENMARK, Copenhagen: Andreas Jensen A/S • DOMINICAN REPUBLIC, Santo Domingo: Muniz, Fernandez & Co. • EL SALVADOR, San Jose, C.R.: Alfa Quimica • FINLAND, Copenhagen: Andreas Jensen A/S • FRANCE, Paris: E. Devineau S.A. • GERMANY, Duisburg: Deutsche Asbest-Gesellschaft, GmbH. • Lübeck: Pessah Erbkamter GmbH. • GUATEMALA, San Jose, C.R.: Alfa Quimica • HONDURAS, San Pedro Sula: Abraham Sikady • INDIA, New Delhi: Toyo Menka Kaisha, Ltd. • ISRAEL, Ramat-Gan: P.B.A. (Wiesner) Ltd. • ITALY, Torino: Franco Rei • JAPAN, Tokyo: T. Kakiuchi & Co., Ltd. • MEXICO, Mexico City: Productos Quimicos Marupei S.A. • NETHERLANDS, Haarlem: Chemische Productenhandel J. J. Van De Vrande • NEW ZEALAND, Mt. Waverley, Melbourne: K. V. Robinson & Associates Pty. Ltd. • NICARAGUA, San Jose, C.R.: Alfa Quimica • NORWAY, Copenhagen: Andreas Jensen A/S • PAKISTAN, Karachi: Toyonaka (Pakistan) Ltd. • PANAMA, San Jose, C.R.: Alfa Quimica • SINGAPORE: Keenan & Associates • SPAIN, Valencia: Guzman S.A. • SWEDEN, Copenhagen: Andreas Jensen A/S • SWITZERLAND, Zürich: Keyser & Mackay • TAIWAN, Taipei: Hudson Enterprises Ltd. • TURKEY, Istanbul: Chemag Ticaret — Ithalat ve ihracat • UNITED KINGDOM: London: Central Asbestos Co. Ltd. • VENEZUELA, Caracas: Ing. H. Sotier, Oficina Tecnica s.r.l.

ASBESTOS - September 1977

**"When it comes to
service, you gotta be
out of your mine."**



You can't sell asbestos to industry unless you get out and gain an understanding of the complexities of day to day business. That's what it takes, so that's what we do at Carey-Canadian.

You want the right grade at the right time, at the right price. That's why your Carey-Canadian man stands by you from the drawing board 'til the day your finished product rolls off the line. He will assure that you will get the proper grade of asbestos when you want it. And he will aid you with

production problems, scheduling and delivery. That's his job...to serve you any way he's needed.

**Carey-Canadian...one of the largest, most
trusted producers of Chrysotile Asbestos.**

a Jim Walter company

CAREY.

EST. 1908 U.S.A.

Carey-Canadian Mines, Ltd. • P.O. Box 190 • East Broughton Station, P.Q. • Canada G0N 1M0
Phone: (418) 426-3050 • Telex: 05-834 554 CAREYMIN EABR • Cable: CARMINES EASTBROUGHTONPQ

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ASBESTOS - March 1978

Carey-Canadian started to mine its own business in 1918.



Carey-Canadian started in the Asbestos Business back in 1918 when Philip Carey came to Quebec to mine Chrysotile Asbestos. Since then, we've become one of the largest, most trusted producers of quality asbestos.

Since 1918, we haven't lost sight of the three principles that Philip Carey set down so many years ago. He stressed economy in mining and milling, endless research to assure quality and uniformity and customer service...which brings us to you. We promise the right grade of asbestos for your

product, give good service and the maximum savings possible.

Give your Carey-Canadian man a call today. He'll stand by you from drawing board to delivery date. He has to. Tradition demands it.

Carey-Canadian... one of the largest, most
trusted producers of Chrysotile Asbestos.

a Jim Walter company



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ASBESTOS - May 1978

BODILY INJURY GENERAL LIABILITY CARRIERS FOR CAREY CANADA INC.
FOR ASBESTOS-RELATED PRODUCT LIABILITY CLAIMS

The primary insurers are:

<u>INSURER</u>	<u>TERM</u>
Aetna Casualty & Surety	11/15/76 - 10/1/77
CNA	1/1/71 - 11/15/76
Lumberman's Mutual	1/1/69 - 1/1/71
Employers of Wausau	1/1/68 - 1/1/69
General Accident	1/1/55 - 1/1/68

The excess insurers involved are:

<u>CARRIER</u>	<u>TERM</u>
Northbrook	7/16/76 - 10/1/81
North Star Reinsurance Co.	3/1/75 - 10/1/77
Home Insurance Co.	8/1/67 - 1/1/71, 3/1/75 - 10/1/79
First State Insurance	11/1/76 - 10/1/84
National Union	10/1/76 - 10/1/78, 10/1/79 - 10/1/84
American Reinsurance	8/1/67 - 1/1/71, 10/9/72 - 10/1/77
Stonewall Ins. Co.	3/1/75 - 11/1/76
American Home Insurance	3/1/75 - 10/1/76
American Motorist Insurance	4/18/72 - 7/16/76
Lloyd's of London	8/1/67 - 4/18/72, 10/1/78 - 10/1/84
CNA	1/1/55 - 1/1/71, 10/1/78 - 10/1/79
U.S. Fire	10/1/78 - 10/1/80
American Excess	10/1/78 - 10/1/83
California Union	10/1/79 - 10/1/80, 10/1/81 - 10/1/83
International	10/1/80 - 10/1/84
Employers of Wausau	10/1/80 - 10/1/84
Lexington	10/1/80 - 10/1/83
Continental	10/1/80 - 10/1/84
Transit	10/1/80 - 10/1/84
Midland	10/1/81 - 10/1/84
National Surety	10/1/81 - 10/1/84
Old Republic	10/1/81 - 10/1/82
Highland	10/1/81 - 10/1/84
Hudson	10/1/82 - 10/1/84
Integrity	10/1/82 - 10/1/84
Protective National	10/1/82 - 10/1/84
Federal	10/1/82 - 10/1/83
Granite State	10/1/82 - 10/1/84
Central National	10/1/82 - 10/1/84
Employers Mutual	10/1/82 - 10/1/84
Twin City	10/1/82 - 10/1/84
Gibraltar	10/1/82 - 10/1/84
AIU	10/1/82 - 10/1/84
INA	10/1/82 - 10/1/84
Hartford	10/1/82 - 10/1/84
Royal	10/1/83 - 10/1/84

Exhibit "J"

CAREY CANADA INC.
DEPOSITIONS - PRESENT AND FORMER EMPLOYEES

<u>NAME</u>	<u>TITLE</u>	<u>DATE</u>	<u>COURT NAME</u>	<u>CASE</u>	<u>DOCKET NO.</u>
A. H. Bagenstose	Retired, VP of Sales	9/16/79 5/20/80 *3/30- 31/81	USDC, Eastern Dist, PA USDC, No Dist, East Div, IL USDC, Eastern Dist, PA	Kohr 49 Insul Neal	79-3942 77-C-3822 78-4242
Jean-Paul Bolduc	V.P.	8/30/80 4/8/86	Circuit Ct, Barnwell Cnty, SC & Sup. Ct, King Cnty, WA USDC, E. Dist, N. Div, TN	Asb Litig Clowers McKinney	78-CP-06-105 80-2-11693-2 3-84-825
Michael Prus	Retired, President	8/21/87	Superior Ct, Middlesex Cnty, NJ	Downer	L-069517-87
Peter Reiser	Retired, V.P. of Sales	9/25/79 5/21/80 8/16/83 2/22/88	USDC, Eastern Dist, PA USDC, No Dist, East Div, IL Circuit Ct, Barnwell Cnty, SC & Sup. Ct, King Cnty, WA USDC, Dist of SC, Columbia Div.	Kohr 48 Insul Asb Litig Clowers Toole	79-3942 77-C-3822 78-CP-06-105 80-2-11693-2 8687
		8/16/83	Circuit Ct, Barnwell Cnty, SC & Sup. Ct, King Cnty, WA	Asb Litig Clowers	78-CP-06-105 80-2-11693-2

*Trial testimony

Exhibit "K"

C O R P O R A T E P O L I C Y B U L L E T I N

I. Policy

Records shall be retained only as long as they serve a necessary business purpose or are required by law.

(Because state retention statutes vary widely on tax, unemployment, and workmen's compensation records, each operating unit should check with the Tax Commissioner of the state(s) in which it does business for specific details.)

II. Purpose

To establish the procedure for retention and destruction of records.

III. Definitions

- A. Operating Unit -- The general headquarters of each company, division and/or subsidiary that constitutes Jim Walter Corporation.
- B. Record -- A document used to record, analyze or report the business transaction of the company.
- C. Storage -- Housing of records in other than active files.
- D. Years -- The period of time a record is to be retained for legal or corporate reasons. This period is in addition to the fiscal year in which the particular transaction, document or property expires or is completed, settled, cancelled, terminated, disposed of, refused, etc., as applicable.

IV. Procedure

- A. Current Transactions -- Records of transactions not closed will be retained for the prescribed period after close of transaction.
- B. Correspondence -- Correspondence will not be retained longer than necessary and in no case for more than two years unless it is part of a record to be retained for a longer period.
- C. Active Files -- Records scheduled for retention shall be transferred from active files into storage not later than seven (7) months following the end of the fiscal year in which the transaction is completed.

Exceptions to this rule may be made if a useful business purpose is regularly served by deferring transfer.



IV. Procedure (continued)

D. Storage Containers

1. Records being transferred to storage for a period of less than ten (10) years are to be contained in serially numbered cardboard transfer files, either letter or legal size as required.
2. Records being transferred to storage for a period of ten (10) years or more are to be contained in either serially numbered fireproof files or a vault.

E. Records Identification -- Each storage file is to be externally, prominently, and clearly identified with a permanent record of:

Name of department and location originating the file
File number
File contents
Period covered by contents
Scheduled destruction date or marked "Permanent" if so scheduled

Waterproof, fade resistant paint, fade resistant marker and stencils are to be used for identification purposes. Gummed labels or other adhesives are not acceptable due to their lack of performance.

F. Storage Facilities -- Each location shall designate a storage area for those records scheduled for retention. Storage space is to be protected against disturbance or intrusions by unauthorized persons and against fire, flood, heat, mildew, excessive dirt and other factors which cause undue deterioration.

G. Records Retention Storage Log -- Each location shall establish and permanently maintain a log for the purpose of identifying individual files as to:

Storage location (building & room)
Row or aisle number
File number
Type of file (letter or legal, cardboard or metal)
Title or brief description of contents
Scheduled destruction date
Actual destruction date

H. Unlisted Records -- Records not listed in Part V of this policy should be retained only as long as they regularly serve a necessary business purpose. If it seems appropriate to establish a retention schedule for an unlisted record, a decision should be requested by the department manager from the operating unit's chief financial officer.



IV. Procedure (continued)

I. Destruction

1. Each location is responsible for destruction of its own records.
2. Records are to be destroyed by incineration, shredding, or other positive means on expiration of the specified retention period, unless a written request has been received from the applicable department manager, approved by the operating units chief financial officer, specifying a longer retention.

V. Retention Schedules

A. Finance

	<u>Years</u>
1. Accounts Payable Invoices:	
a. Regular	3(A)
b. Capital Asset	3(AD)
2. Accounts Receivable Ledger Cards	3
3. Accounts Receivable - Bad Debts	7(A)
4. Audit Reports - External	P
5. Accounts Receivable Agings	3
6. Bank Account Reconciliations	3(A)
7. Bank Deposit Slips	3(A)
8. Capital Project Authorizations	3(AD)
9. Capital Asset Register	P
10. Cash Disbursements Journal	P
11. Cash Receipts Journal	P
12. Checks - Cancelled	3(A)
13. Credit Memos	7
14. Cost Records	7
15. Costs - Standard	7
16. Depreciation Records	P
17. Employee Earnings Record	7
18. Employee Travel Expense Records	3(A)
19. Employee Relocation Expense	3(A)
20. Financial Statements:	
a. Certified	P
b. Interim	3(A)
c. Year End	3(A)
d. Work Papers	3(A)
21. General Ledger	P
22. General Journal Entry	P
23. General Journal Entry Support Data	3(A)
24. Income Tax Returns	P
25. Income Tax Return Work Papers	3(A)
26. Inventory Summary & Work Papers:	
a. Interim	3(A)
b. Year End	7



V. Retention Schedules (continued)

A. Finance (continued)

	<u>Years</u>
27. Payroll:	
a. Journal	P
b. Register	P
c. Tax Returns	7
d. Bond Purchase Records	7
28. Petty Cash Vouchers	7
29. Notes Receivable	3(AS)
30. Royalty Reports	7
31. Sales:	
a. Contracts	7
b. Invoices	7
c. Journal	P
d. Order	7
e. Tax Exemption Certificates	P
f. Tax-Monthly Work Papers	7
g. Tax Return	7
32. Subsidiary Ledgers	P

B. Data Processing

1. Machine-sensible data media used for recording, consolidating, and summarizing accounting transactions and records that may become material in the administration of any Internal Revenue Law. 3(A)

Typical of such data media are:

Punched Cards (*)
Magnetic Tapes
Discs
Paper Tapes (*)

(*) An exception is provided which makes it unnecessary to retain punched cards or other media which are used merely as a means of input to the system and the information is duplicated on magnetic tapes, discs or other machine sensible records.

2. System flow charts and documentation P

C. Employee Relations

1. Recruiting & Selection

- a. Application for Employment:
 1. No interview 1 yr..
 2. If interviewed, including interviewer's comments 3 yrs.
 3. If hired 10 yrs (AT)



V. Retention Schedules (continued)

C. Employee Relations (continued)

	<u>Years</u>
b. EEOC Records and Reports	P
c. Advertisements for employment	2
d. Affirmative Action Plans/Programs	P
e. Turnover Reports	P
f. Veteran's Reemployment Data	P
2. <u>Labor Relations</u>	
a. Contract Negotiations	
After 10 years purge file and retain	
1. Minutes	P
2. Cost detail of final settlement	P
3. Letters outlining final settlement	P
4. Copies of company offers	P
5. Union's original demands	P
b. Union Agreements (signed documents)	P
c. Union Agreements (printed copies)	3(AT)
d. Grievance Records	P
e. N.L.R.B. Proceedings	P
f. Minutes of Labor/Management Meetings	P
3. <u>Personnel Records</u>	
a. Employee Records/Personnel Files	
1. Change in status notices	10 AT
2. Termination Notices	10 AT
3. Deduction Authorizations	10 AT
4. Contracts	10 AT
5. Time Cards	3 A
b. Garnishments	10 AT.
c. Patentright Protection Contracts	10 AT
4. <u>Employee Benefits</u>	
a. Accident Report, Injury Claims, Settlement	3 yrs.
b. Occupational Injury Frequency Data	P
c. Profit Sharing Plan Records	P



V. Retention Schedules (continued)

	<u>Years</u>
C. <u>Employee Relations (continued)</u>	
d. Retirement/Pension Plans --	P
e. O.S.H.A. Records and Reports	P
f. Employee Newsletters/Magazines	P
g. Employee Solicitations for Charitable Causes	
1. United Fund	2
h. Suggestion Systems	P
1. Suggestion System Records	10
i. Stock Purchase Plan	P
1. Stock Purchase Plan Records	10(AT)
j. Educational Assistance Plan	P
1. Educational Assistance Plan Records	3
k. Scholarship Program	P
5. <u>Compensation Administration</u>	
a. Salary Administration Records	P
1. Position Descriptions	
2. Policies & Procedures	
3. Salary Ranges	
b. Unclaimed Wages	7
c. Wage and Benefit Surveys	5
6. <u>Training & Development</u>	
a. Training and Development Programs	P
1. Training Program Records - Appraisals	3
7. <u>Miscellaneous</u>	
a. Organization Charts	3
b. Rules of Conduct - Safety Rules	P
c. Disciplinary Action Records	P
d. Wage, Equal Employment, Health & Safety Bulletins (Required to be posted by Government)	S



V. Retention Schedules (continued)

	<u>Years</u>
D. <u>Legal Records</u>	
1. Claims & Litigation Concerning Torts & Breach of Contract	P
2. Contracts, Bailments, Changes, Specifications, Procedures	P
3. General Agreements	20(AT)
4. Patent & Related Material	20
5. Trademarks & Copyrights	P
E. <u>Purchasing Records</u>	
1. Bids, Awards	3(AT)
2. Capital Equipment Purchase Orders	3(AD)
3. Contracts	3(AT)
4. Purchase Orders	3(AT)
5. Purchase Order Requisitions	3(AT)
6. Quotations	1
F. <u>Traffic Records</u>	
1. Aircraft Operating & Maintenance	P
2. Bills of Lading	2
3. Driver Reports	3
4. Export Records	3
5. Freight Claims	3(AS)
6. Freight Bills	3
7. Rates & Tariff	S
8. Receiving Documents	2-10
9. Routing	3
10. Shipping & Related Documents	2-10
11. Waybills	2
G. <u>Engineering/Manufacturing Records</u>	
1. Bills of Material	2
2. Drawings & Drafting Records	P
3. Product, Tooling, Design, Engineering Research Experiment & Specification Records	20
4. Stock Issuing Records	3
5. Tool Control	3
H. <u>Corporate Records</u>	
1. Annual Reports	P
2. Charter & By-Laws	P
3. Cancelled Stock Certificates	7
4. Contracts & Agreements	20(AT)
5. Daily Stock Transfer Sheets	P
6. Fidelity Bonds, Surety Bonds	3(AT)
7. Incorporation Records	P



V. Retention Schedules (continued)

Years

H. Corporate Records (continued)

8. Leases	7(AT)
9. Licenses	C
10. Minutes	P
11. Mortgages	7(AT)
12. Notes-cancelled	7(AS)
13. Option-After Expiration or Refusal to Exercise	1
14. Property Deeds	P
15. Real Estate Titles	P
16. Stock Ledgers	P
17. Stockholders Lists	7
18. Stockholder Proxies	3

I. Other Records

1. Directives from Officers
2. Forms Used, File Copy
3. Price Bulletins
4. Systems & Procedures Records
5. Warranties

(S)
P
34 IT
P
3(AT)

should change

Legend:

- A - After income tax returns for the year to which the papers relate have been examined.
- AD - After Disposal
- AS - After Settlement
- AT - After Termination
- C - While Current
- P - Permanent
- S - Until Superseded

CAREY - CANADA

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