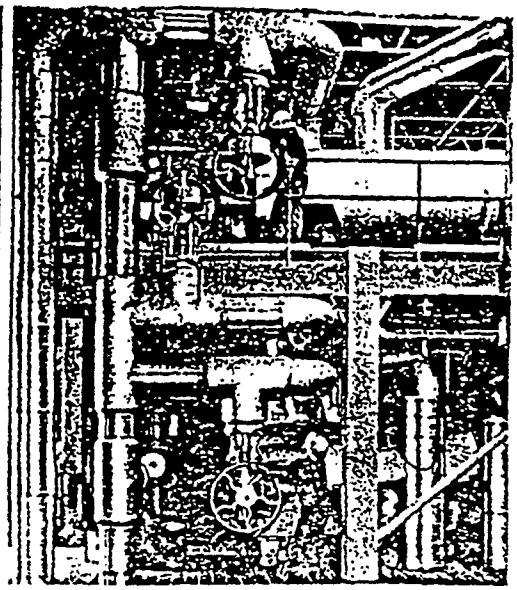


Block insulation, factory-scored to reduce dust production during cutting at site, gets trimmed in preparation for installation on tank head



Metal jackets replace older asbestos-containing finishes and jackets, reduce dust from subsurface

PLAINTIFF'S EXHIBIT

CAP-1582

Air, gas and liquid handling

Breathe easier with today's insulation

By Walter K Hesse, Johns-Manville Corp

Increasing concern is expressed in industry, labor, medical and government circles about the high rate of asbestos-related diseases—asbestosis, lung cancer and (rarely) mesothelioma—in buildings, industrial plants, ships. Workers who have been employed for over 20 years give special concern.

But situation is getting better. Consider first that the abnormally high death rate of recent years among older employees reflects exposure to asbestos dust accumulated over the past 40 years. This death rate should diminish because the amount of asbestos dust to which insulation workers are exposed has decreased considerably over the past two decades. The younger workers (fewer than 20 yrs on the job) have had significantly less exposure in comparable work periods.

In the 1930's, practically all insulations contained some asbestos fiber. Its content ranged from 10% for diatomaceous silica to 100% for "mine" cements. Latter, mixed with water, were used to point up joints in molded or formed block insulation and over fittings and block insulation. Today, one-coat hydraulic setting mineral fiber cement, with only 15% asbestos-fiber content, is common.

A popular high-temperature insulation had been 85% magnesia, with about 14% asbestos by weight. But a new product, calcium silicate, joined the high-temperature group in the early 1940s, eventually replacing 85% magnesia and diatomaceous silica for the 300-1200-F range. Calcium silicate contained only 11% asbestos fiber initially, and this later fell to 7.5%. The group of high-temperature insulations accounted for about 64% of the total U.S. volume.

So-called low-pressure insulations were used for temperatures between 50 and 250 F and contained about 75% asbestos by weight. These materials included air-cell sheets and pipe insulation consisting of alternating corrugated and plain asbestos paper bonded with sodium silicate, in addition to wool-felt sheets and pipe insulation consisting of rag and wool fiber paper, laminated and bonded.

Growth of the petroleum and chemical industries built up demand for low-temperature insulating materials such as foamed glass in the 1940s and 1950s. By the end of the 1940s, fiber-glass insulations accounted for nearly 25% of all insulation materials produced. Today, fiber-glass products hold a 50% share of the insulation market. Although asbestos fiber production increased over 400% from 1930 to 1965, the amount used in insulation materials decreased slightly during the same period. ●



Fiber-glass pipe insulation receives final touches on boiler-room piping and valve installation at state university plant

Solid vs sprayed-on

Current attacks on use of asbestos for various purposes because of its health effects should be understood as not directed primarily at pipe and equipment insulation. Efforts like those outlined in the article have made this end-use comparatively safe. Instead, spraying of asbestos fireproofing on the steelwork of new buildings has become a major target. Legislation to require substitutes for asbestos in this work is under study and, as in the case of New York City, has been proposed for safety of workers and passersby.