United States Testing Company, Inc.

Environmental Sciences Division

1415 PARK AVENUE • HOBOKEN, NEW JERSEY 07030 • 201-792-2400



REPORT OF TEST

SOUTHERN ASBESTOS COMPANY
P.O. BOX 10516
CHARLOTTE, NORTH CAROLINA 28237

April 14, 1977

TEST REPORT NO. 03238

SIGNED FOR THE COMPANY

BY

David L. Hansen

EST 1880

E. Rider/js

OUR LETTERS AND REPORTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED. AND THEY AND THE NAME OF THE UNITED STATES TESTING COMPANY INC OR ITS SEALS OR INSIGNIA, ARE NOT TO BE USED UNDER ANY CIRCUMSTANCES IN ADVERTISING TO THE GENERAL PUBLIC AND MAY NOT BE USED IN ANY OTHER MANNER WITHOUT OUR PRIOR WRITTEN APPROVAL. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS.

United States Testing Company, Inc.

Subject:

A dual phase project involving the sampling of asbestos fiber emitted from treated and untreated asbestos products conducted by United States Testing Company, Inc. on February 22nd, 23rd, 24th and March 22, 1977.

Project:

Phase I of the project involved the simulation of the working condition encountered during the lagging of a ship's compartment. The test was conducted in your air compressor room located at 1000 Seaboard Street, Charlotte, North Carolina. Three days were required to accomplish this phase of the project which had three separate steps. The first step, conducted on February 22, 1977, involved the application of the primary pipe insulation material consisting primarily of calcium silicate known as Thermo 12 manufactured by Johns Manville Corporation and Quick Set Cement manufactured by 48 Insulations Company.

The second step, conducted on February 23, 1977, involved the application of the secondary insulating material, a treated asbestos lagging material AG-110 RWL Underwriters Lagging Cloth containing water activated adhesive manufactured by Southern Asbestos Company. The secondary insulation was then allowed to dry for a period of about one week, at which time it was painted with IC-102 manufactured by Insul-Caustics.

The third and final step, conducted on March 22, 1977, involved the tear-down and removal of all of the aforementioned insulating materials one month later.

Phase II of the project involved the shaking of various treated and untreated asbestos products manufactured by Southern Asbestos Company in your vibration tester #70-03-004. This phase was completed in approximately one and one half days, February 23, and February 24, 1977.

Procedure:

Sampling and evaluation procedures were performed in accordance with NIOSH (National Institute for Occupational Safety and Health) requirements.

Asbestos fibers were collected on Millipore type AA (37mm dia., 0.8u pore) Cellulose-ester membrane filters pre-mounted in three stage plastic field cassettes, which were sealed with cellulose bands.

United States Testing Company, Inc.

Vacuum was provided by Bureau of Mines approved miniature battery-powered pumps previously calibrated to provide a flow rate of 2 liters per minute. The filter cassettes were connected to the vacuum source by Tygon tubing. Optimum sampling times were calculated as per NIOSH regulations.

During Phase I of the project, both area and personnel samples were collected. Area sampling involved setting-up samples in the work area; personnel sampling involved monitoring employees (at their breathing zone) actually performing the work. Personnel employed during the survey were Carl Smith and Jene Carter of the Porter Hayden Company of Charlotte, North Carolina.

Phase II of the project involved sampling within the enclosed area of Southern Asbestos' vibration tester #70-03-004. The filter cassette was placed inside the tester and was connected to a pump which was outside the tester via Tygon tubing. The tester was vacuumed out after each successive run to insure representative samples.

Results:

Phase I - Simulated Lagging of Ship's Compartment

Sample Identification	Concentration of Asbestos in Fiber/cc
Step 1 - Primary Insulation Installation*	
#1 Area sample collected 2/22/77 located on top of concrete support in center of the room. Total volume of sample 189 liters.	Primarily particulate material with some fibers present which was mostly fiberglas with a few asbestos fibers.
#2 Area sample collected 2/22/77 located on top of concrete support. Total volume 110 liters.	
#3 Area sample collected 2/22/77 located on top of concrete support. Total volume 210 liters.	

*Note:

These samples could not be counted as per NIOSH requirements due to unusually heavy loading of non-asbestos material.

United States Testing Company, Inc.

Results: (Continued)

Phase I - Simulated Lagging of Ship's Compartment

Sample Identification	Concentration of Asbestos in Fiber/cc
Step 2 - Secondary Insulation Installation	
#1 Personnel sample collected 2/23/77 Employee - Carl Smith - Total volume 366 liters	0.09
#2 Personnel sample collected 2/23/77 Employee - Jene Carter - Total volume 364 liters	0.06
#3 Area sample collected 2/23/77 collected on concrete support - Total volume 362 liters	0.04
#4 Personnel sample collected 2/23/77 Employee - Carl Smith - Total volume 180 liters	0.17
#5 Personnel sample collected 2/23/77 Employee - Jene Carter - Total volume 180 liters	0.21
#6 Area sample collected 2/23/77 collected on concrete support Total volume 180 liters	0.10
Step 3 - Tear-Down and Removal	
#1 Personnel sample collected 3/22/77 Employee - Jene Carter - Total volume 60 liters	0.13
#2 Area sample collected 3/22/77 collected on concrete support Total volume - 60 liters	0.15
#3 Personnel sample collected 3/22/77 Employee - Jene Carter - Total volume 120 liters	0.24
#4 Area sample collected 3/22/77 collected on concrete support Total volume 116 liters	0.09

United States Testing Company, Inc.

Results: (Continued)

Phase I - Simulated Lagging of Ship's Compartment

Sample Identification	Concentration of Asbestos in Fiber/cc
Step 3 - Tear-Down and Removal	
#5 Personnel sample collected 3/22/77 Employee - Jene Carter - Total volume 110 liters	0.26
#6 Area sample collected 3/22/77 collected on concrete support Total volume 88 liters	0.14

Phase II - Vibration Tester

Sample Identification	Concentration of Asbestos in Fiber/cc
#1 8225 with CLEANGARD® collected 2/23/77 - Total volume 200 liters	0.01
#2 8225 Commercial Grade with WELDGARD® - collected 2/23/77 Total volume 200 liters	0.02
#3 8225 Commercial Grade - No Treatment collected 2/24/77 Total volume 200 liters	0.05
#4 AG110 Underwriters Grade Rewettable Lagging collected 2/24/77 - Total volume 200 liters	0.02
#5 AG110 Underwriters Grade (Cloth) No Treatment collected 2/24/77 Total volume 200 liters	0.01
#6 160 Commercial Grade Tape, 2" CLEANGARD® collected 2/24/77 Total volume 200 liters	0.01
#7 160 Commercial Grade Tape, 2" No Treatment collected 2/24/77 Total volume 200 liters	0.01

DATE RECEIVED
APR 22 1977
CHARLOTTE WORKS LIBR

Conclusion:

Since the current TLV (Threshold Limit Value) for asbestos fibers is 2 fibers per cubic centimeter greater than 5 micrometers in length, all the concentrations determined are well within OSHA requirements.