



Industrial Hygiene Technical Bulletin

No. 83-3

PLAINTIFF'S
EXHIBIT
AL-1193

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RE: ASBESTOS EXPOSURES

Due to the very serious nature of asbestos exposure hazards, a closer look was taken at our policies and procedures for controlling such exposures. Starting in 1978, Alcoa implemented an Asbestos Replacement Program with the objective of making our operations as free of asbestos-containing materials as possible. While the program has met with considerable success, there are still some applications where acceptable substitutes have not been found. Likewise, we currently have numerous applications where asbestos products were used in past construction and are still in place. This situation may pose a potential health hazard in the event that asbestos-containing materials become capable of fiber release (i.e. due to deterioration, water damage, etc.), or during renovation or demolition activities.

The purpose of this technical bulletin is to clarify Alcoa's policy and procedures for job tasks involving exposures to asbestos fibers. It applies to both renovation or demolition of asbestos-containing materials, as well as routine or repetitive job tasks involving asbestos exposures. Attached please find a one page flow chart entitled "Asbestos Exposure Procedures" which summarizes the requirements outlined in the following text based upon job activity and air monitoring data.

I. DEFINITIONS

- A. "Asbestos fiber" means a fibrous form of asbestos longer than 5 microns with a length-to-diameter ratio of at least 5 to 1, and with a maximum diameter of 3 microns.
- B. "Friable asbestos" means any material that contains more than 1% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- C. "Action Level" is defined as 0.1 fibers/cc (8 hour TWA). Medical surveillance, air monitoring and employee training requirements are triggered at the action level.
- D. "Alcoa Permissible Limit (APL)" is defined as 0.5 fibers/cc (8 hour TWA). Respiratory protection is required when exposures may exceed the APL. Likewise, a respiratory protection program (employee training, fit testing, medical approval, etc.) must be implemented.
- E. "Routine or Repetitive Job Tasks" means employees engaged in work activities involving exposures to asbestos fibers on an average frequency of an 8 hour shift per month or greater. (Examples include working with marinite headers, trough linings, thermocouple wire, brake lining, etc.).

ceive an annual medical examination. This periodic evaluation will include a questionnaire to elicit the symptomatology of respiratory disease, pulmonary function tests (FVC and FEV_{1.0}), and a chest roentgenogram. Employees should be notified of any abnormalities within 30 days of such a finding by the evaluating physician.

B. Employee Training

All employees exposed to asbestos concentrations above the action level shall receive annual training in the proper handling of asbestos. This program should include an explanation of the following:

- (1) The requirements outlined in this bulletin.
- (2) Hazardous properties of asbestos.
- (3) Work practices and engineering controls utilized to reduce exposures.
- (4) Safe work procedures for handling asbestos-containing materials.
- (5) The effectiveness of personal protective equipment.

Attendance at such training sessions should be documented and filed appropriately.

C. Air Monitoring

All tasks involving potential exposures to asbestos require baseline sampling. Routine air monitoring should be continued on a six month basis for routine or repetitive job tasks with asbestos concentrations at or above the action level. If exposure levels are found to be below the action level, air monitoring should be performed if process or product changes occur which might potentially increase the airborne fiber concentrations. If reliance on engineering controls is necessary to reduce exposures below the action level, annual monitoring should be performed to evaluate the effectiveness of the controls.

D. Respiratory Protection

Respirators are required of anyone performing a job task whose potential exposure to airborne asbestos fibers may exceed the APL. This would include all demolition/renovation activities, and may include routine or repetitive job tasks, depending upon industrial hygiene sampling data.

For exposures up to 10 fibers/cc, the following NIOSH approved respirators are acceptable for protection against asbestos fibers:

tos products have been found. Efforts to find replacements for the remaining applications will continue.

It is imperative that accurate records be kept to identify areas where asbestos-containing materials are being used, or have been used in past construction. To minimize potential health hazards associated with renovation or demolition of asbestos products, all maintenance projects should be reviewed for potential asbestos exposures prior to starting the job. If asbestos is suspected, the material should be treated as such unless laboratory analysis confirms otherwise. Samples of bulk material can be analyzed by Alcoa's Environmental Health Laboratory.

Asbestos materials in good condition which do not represent likely exposures should not be removed simply because they contain asbestos since doing so may present a greater hazard during the actual removal. However, a routine inspection program of the material should be implemented to insure that the situation does not change.

If you have any questions concerning the above, please do not hesitate to contact me.

JOAN E. SANDER

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ASBESTOS EXPOSURE PROCEDURES

JOB ACTIVITY

ROUTINE/REPETITIVE

RENOVATION/DEMOLITION

AIR MONITORING

$\chi < AL$

$AL \leq \chi < APL$

$\chi \geq APL$

RELY ON
ENGINEERING
CONTROLS?

YES

NO

• MONITOR ON ANNUAL BASIS

• EMPLOYEE TRAINING

• MEDICAL SURVEILLANCE

• ROUTINE MONITORING (6 Mo. BASIS)

• PROTECTIVE CLOTHING (AS NECESSARY)

• EPA NOTIFICATION PROCEDURES (CONTACT ENVTL. CONTROL ENGR.)

• MEDICAL SURVEILLANCE (AVG. FREQ. $\geq$ 8 HR. SHIFT/MO.)

PRODUCT OR
PROCESS
CHANGE

• EMPLOYEE TRAINING

• RESPIRATORY PROTECTION

• PROTECTIVE CLOTHING (AS NECESSARY)

• DISPOSAL REQUIREMENTS (CONTACT ENVTL. CONTROL ENGR.)

AL (ACTION LEVEL) = 0.1 FIBERS/CC TWA

APL (ALCOA PERMISSIBLE LIMIT) = 0.5 FIBERS/CC TWA