

## BULLETIN

NO. 581

October 12, 1976

CONTROL OF AIRBORNE ASBESTOS CONCENTRATIONS  
IN THE WORKPLACE — INDUSTRIAL TYPE VACUUM CLEANERS

Over the past many months, without de-emphasis on problems in the factory area, those in favor of stringent regulations on the use of asbestos have targeted friction materials servicing—particularly brake lining service—as a potentially hazardous area. Technical papers in this area have not based observations on the OSHA standard's 8 hour time weighted average for fibers greater than 5 microns in length. Most papers have emphasized peak concentrations (as blowing brake lining dust from a used brake awaiting reline) and the fibers shorter than 5 microns in length.

Based on discussions at the Asbestos Information Association meeting in September, efficient vacuum cleaning systems should be of help not only in the factory but in the brake service area. I have, therefore, enclosed sales literature from two manufacturers, along with the NIOSH (National Institute of Occupational Safety and Health) recommended procedures for asbestos brake and clutch servicing. Before distributing this information, I reviewed this data with Mr. I. H. Weaver, acting Chairman of our Asbestos Study Committee, to be sure this information was worthwhile. He concurred that the following information was worthy of distribution to the membership:

1. NIOSH Recommended (Interim) Procedures for Asbestos Brake and Clutch Servicing
2. NILFISK literature
  - 2.1 NILFISK absolute filter
  - 2.2 NILFISK manometer
  - 2.3 Dust free disposal
3. TEMPO Brake and Clutch Service Vacuum

This literature is being enclosed (one copy to each member) with the mailing to:

END/erc

E. Z. Drislane  
Executive Director

cc-Active Members  
Regional Members (Active Dues Level)  
Asbestos Study Committee



RECOMMENDED (INTERIM) PROCEDURES FOR  
ASBESTOS BRAKE AND CLUTCH SERVICING

The National Institute for Occupational Safety and Health (NIOSH) has research underway concerning dust exposures during brake and clutch servicing. Due to preliminary data demonstrating significant asbestos exposures during presently used brake and clutch servicing techniques, NIOSH has reviewed alternate techniques whereby asbestos exposures are reduced. The following are interim procedures recommended by NIOSH to minimize dust exposures.

1. If possible, an area shall be designated for all brake and clutch repairs. Entrances into this area shall be posted with an asbestos exposure warning sign as follows:

Asbestos  
Dust Hazard  
Avoid Breathing Dust  
Wear Assigned Protective Equipment  
Do Not Remain in Area Unless Your Work Requires It  
Breathing Asbestos Dust May Cause Asbestosis and Cancer

2. During brake servicing, an air purifying respirator, either single use or with replaceable particulate filter(s), as approved by the Mining Enforcement and Safety Administration (formerly Bureau of Mines) or NIOSH, shall be worn during all procedures starting with the removal of the wheels and including reassembly. During manual clutch servicing, such a respirator shall be worn during removal and cleaning of the clutch, pressure plate and housing assembly and during installation of the new clutch assembly.
3. Dust shall first be cleaned from brake drums, brake backing plates, brake assemblies and clutch assemblies using an industrial type vacuum cleaner equipped with a high efficiency filter system (>99% efficiency for 0.3  $\mu$ m diameter aerosols). After vacuum cleaning, any remaining dust shall be removed using a rag soaked in water and wrung until nearly dry. Under no circumstances shall compressed air or dry brushing be used for cleaning.
4. During arcing and riveting operations, an approved respirator, as described in (2) above, shall be worn. Grinding (arcing) machines shall be provided with local exhaust ventilation such that worker exposures are maintained at least below the 1976 OSHA asbestos standard (29 CFR 1910.1001).<sup>\*</sup> At a minimum, the dust bag of the arcing machine shall be removed and replaced with the hose of the high efficiency industrial vacuum described in (3) above.

5. Industrial vacuum cleaner bags containing asbestos dust and cloths used for wiping brake and clutch assemblies shall be sealed in plastic bags and labeled with the following warning label printed in letters of sufficient size and contrast to be readily visible and legible;

Caution  
Contains Asbestos Fibers  
Avoid Breathing Dust  
Breathing Asbestos Dust May Cause Asbestosis and Cancer

All asbestos waste shall be disposed of in accordance with the OSHA asbestos regulation, 29 CFR 1910.1001(h). During removal of vacuum bags, an approved respirator, as described in (2) above, shall be worn.

6. All floor cleaning in areas where brakes and clutches are repaired shall be done with the high efficiency industrial vacuum cleaner as described in (3) above. Grinding (arcing) machines shall also be cleaned with such a vacuum cleaner and any remaining dust wiped with a damp cloth. An approved respirator, as described in (2) above, shall be used during this cleaning.
7. Although adherence to the above procedures should minimize any contamination of work clothing, it is required that the appropriate portions of the OSHA regulations on asbestos (29 CFR 1910.1001(d), (3 and 4)) concerning special clothing, change rooms, etc. be followed.

NOTE: Strict adherence to the above procedures should minimize exposures to mechanics during brake and clutch servicing. These are interim recommendations and are subject to revision pending results of ongoing NIOSH research.

- \* Section 1910.1001 of the Code of Federal Regulations was formerly Section 1910.93a. This change was noted in the Federal Register, May 23, 1975.

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