

A. S. C.

October 24, 1974

Mr. E. M. Fenner, Director
Technical Relations
Environmental Affairs Dept.
Johns-Manville Corp.
P. O. Box 5108
Denver, Colo. 80217

Dear Ed:

Attached is copy of revised draft of the Asbestos Friction
Materials Work Practices and a marked up copy of the original
to indicate changes, all of which I consider minor.

Best regards,

I. H. Weaver
W

attach.

cc-Messrs. J. Marsh
E. Drislane ✓
C. Clarke

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(8)

FMSI 06725

Recommended Work Practices for Users and Fabricators of
Asbestos Friction Materials

This recommendation of "Work Practices" is prepared by the Standards and Technical Committee of the Asbestos Information Association/North America. The intent is to advise manufacturers and fabricators, who use asbestos friction materials, of Work Practices best suited to maintaining a working environment within the levels required by 1910.93a of the OSHA Standards (copy attached).

1. Asbestos Friction Material Products covered by this work practice recommendation:
 - 1.1 Clutch Facings
 - 1.2 Brake Lining Segments
 - 1.3 Brake Blocks
 - 1.4 Disc Brake Pads
 - 1.5 Brake Band Materials
 - 1.6 Automatic Transmission Discs
2. Operations to which the recommended work practices may apply:
 - 2.1 Clutch Assembly and Rebuilding Operations
 - 2.2 Brake Assembly and Relining Operations
 - 2.3 Automatic Transmission Assembly and Rebuilding Operations
3. Requirements of OSHA 1910.93a.
 - 3.1 The Asbestos Standard (1910.93a) applies to any manufacturing, fabrication or handling process or operations involving articles or materials composed wholly or in part of asbestos fibre.
 - 3.2 It is the employer's responsibility to maintain "Exposure to airborne concentration of asbestos fibres" at or below the levels described in 1910.93a. Exposure levels may be controlled by isolation, enclosure, exhaust ventilation and dust collection. Standard 1910.93a does not limit the means used to maintain compliance.
 - 3.3 Particular tools - All hand or power operated tools which may cause the release of asbestos fibre to become airborne at levels in excess of the standard shall be provided with exhaust ventilation.
 - 3.4 Wet Methods - When practicable asbestos products shall be processed wetted sufficiently to prevent emission of dust to the atmosphere. (Limited or not required where wetting would reduce end efficiency of the product.)
 - 3.5 Protective Equipment and Clothing - Whenever it is necessary for employees to perform their normal work in an environment where airborne concentration of asbestos fibre exceeds the allowable level of Standard 1910.93a, the employer must provide respiratory protection and clothing in compliance with the standard. The employer must also provide change rooms and separate lockers for work clothes and street clothes.
 - 3.6 Air Sampling and Monitoring - The employer is responsible as described in 1910.93a.

- 3.7 Storage and Handling - It is recommended that asbestos-containing products be stored in sealed containers. Handling of asbestos-containing products shall be done in a manner to minimize generation of airborne asbestos dust.
- 3.8 Caution Signs and Labels - The employer shall use caution signs and labels in accordance with provision of Standard 1910.93a.
4. Exhaust and Dust Collection Systems
 - 4.1 Wherever exhaust and dust collection systems are used to attain concentrations of airborne asbestos fibre below the levels allowed in Standard 1910.93a, the systems shall be inspected and cleaned at least weekly.
 - 4.2 Design, installation and maintenance of exhaust and dust collection systems shall be in accordance with American National Standard Fundamentals Governing Design and Operation of Local Exhaust Systems (ANSI Z9.2) or equivalent standard.
5. Housekeeping in Manufacturing and Fabrication Areas:
 - 5.1 All surfaces, machinery, equipment, etc. shall be kept free of accumulation of asbestos dust, preferably by vacuum cleaning or other method that will prevent asbestos dust or fibre from becoming airborne. Vacuum cleaners should be equipped with a disposable collection bag and a microfilter.
 - 5.2 Waste and scrap material, such as dust, chips, off-cuts, edge trimmings and broken pieces shall be placed in sealed containers in preparation for disposal.
 - 5.3 Containers used to store or dispose of asbestos-containing materials shall be labeled in a manner to comply with Standard 1910.93a.
6. Recommended Procedures for Manufacturing and Fabrication Operations Involving Asbestos Friction Materials:
 - 6.1 Wherever feasible, friction materials that are specially treated to reduce dust emission should be used.
 - 6.2 Materials should be removed from containers gently and handled with care to avoid unnecessary generation of airborne dust. Care should be taken not to disturb dust remaining in containers and packaging materials. Such dust should be removed by vacuum cleaning wherever feasible.
 - 6.3 Wherever feasible, materials should be obtained from the manufacturer cut, machined and/or drilled to suit final requirements to avoid necessity for additional fabrication operations.
 - 6.4 On large volume operations with fixed working points or machines, local exhaust systems should be installed in accordance with American National Standard ANSI Z9.2 or equivalent standard.
 - 6.5 When cutting, drilling, grinding or machining operations are of short duration, portable dust exhaust units may be suitable. Vacuum cleaning equipment, sometimes may be adapted for this purpose, provided the filter system is of adequate efficiency.

- 6.6 Where dust control by means of local exhaust is not feasible, flooding of the work and the tooling with water or other liquid may be effective in suppressing dust emission.
- 6.7 Fragments and dust should be removed regularly, preferably by vacuum methods, and must be disposed of in accordance with paragraphs 5.2 and 5.3.
- 6.8 If surface dust is present on materials, it may be necessary to remove it by wiping with a damp cloth or mop or by vacuum cleaning with a brush head. attachment prior to performing secondary operations such as riveting, bonding, branding, inspection, etc.
- 6.9 Where it is impractical to control airborne dust by means of an exhaust system or by wet processing, workers must be protected by approved respirators and protective clothing.

7. Personal Protection

- 7.1 Develop good personal hygiene practices. Washing thoroughly before eating will prevent ingestion of foreign matter. Food should not be stored or eaten in the work area.
- 7.2 It is well documented that smoking is injurious to your health. The ill effects of smoking may be accentuated for those working where airborne asbestos dust may be encountered. Smoking should be avoided!.
- 7.3 Use of approved respirators shall be mandatory when required by OSHA Standard 1910.93a. Protective clothing shall be provided and worn wherever employees are exposed to ceiling levels exceeding those prescribed in Standard 1910.93a. Employees must be given thorough instruction in proper use, care and maintenance of personal protection equipment.
- 7.4 No person shall be assigned to perform any work for which respiratory protective equipment is needed unless he has been medically examined and determined fit.
- 7.5 Care should be taken to minimize dust generation and transfer of dust to the person or his clothing. Clothing not worn during working hours must be stored away from contamination, and contaminated work clothing shall be specially handled to prevent exposure to asbestos dust, as prescribed in Standard 1910.93a.

~~NOT FOR CIRCULATION~~
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Recommended Work Practices for Users and Fabricators of
Asbestos Friction Materials

John

Introduction

This recommendation of "Work Practices" is prepared by the Standards and Technical Committee of the Asbestos Information Association/North America, ~~working with the Occupational Safety and Health Department, Office of Health Standards.~~ The intent is to advise manufacturers and fabricators, who use asbestos friction materials, in manners of Work Practice best suited to ~~the~~ maintaining ^a working environmental atmosphere within the levels required by 1910.93a of the OSHA Standards *(copy att'd attached).*

1. Asbestos Friction Material Products covered by this work practice recommendation:

- Brake Blocks* -
- 1.1 Clutch Facings
 - 1.2 Brake Lining Segments
 - 1.4 Disc Brake Pads
 - 1.5 Brake Band Materials
 - 1.6 Automatic Transmission Discs

2. Manufacturing Operations ^{To which} ~~wherein~~ the recommended work practices may apply:

- 2.1 Clutch Assembly and Rebuilding Operations
- 2.2 Brake Assembly and Relining Operations
- 2.3 Automatic Transmission Assembly and Rebuilding Operations
- 2.4 ~~Field Assembly of Industrial and/or Construction Equipment~~

3. Requirements of OSHA Standard 1910.93a

3.1 The Asbestos Standard (1910.93a) ^{OR OPERATION INVOLVING OR MATERIALS} applies to any manufacturing, fabrication or handling process ~~etc. wherein an article~~ ^{is} composed wholly or in part of asbestos fibre is concerned.

3.2 It is the employer's responsibility to maintain "Exposure to airborne concentration of asbestos fibres" at or below the levels described in 1910.93a. Exposure levels may be controlled by Isolation, enclosure, exhaust ventilation and dust collection. ~~The~~ Standard 1910.93a does not limit the means used to maintain compliance.

3.3 Particular tools - All hand or power operated tools which may cause the release of asbestos fibre to become airborne at levels in excess of the standard shall be provided with exhaust ventilation.

3.4 Wet Methods - ^{2.} When practicable asbestos friction material products shall be processed ^{of dust} wetted sufficiently to prevent emission to working atmosphere. (Limited or not required where wetting of the product would reduce end efficiency of ~~that~~ ^{the} product.)

3.5 Protective Equipment and Clothing - ^{WHENEVER} At such times that it is necessary for employees to perform their normal work in an environment wherein the airborne concentration of asbestos fibre exceeds the allowable level of Standard 1910.93a, the employer must provide

respiratory protection and clothing in compliance with the standard. The employer must also provide change rooms and separate lockers for work clothes and street clothes.

3.6 Air Sampling and Monitoring - The employer is responsible as described in 1910.93a.

3.7 Storage and Handling - It is recommended that asbestos-containing products be stored in sealed containers, ~~etc.~~ ^{HANDLING OF} During periods of time that it is necessary to handle asbestos-containing products, ~~the~~ ^{MINIMIZE GENERATION} handling shall be done in a manner to create the least amount of airborne asbestos dust.

in signs etc.
3.8 ~~Caution Signs and Labels~~ - The employer shall use caution signs and labels in accordance with provisions of Standard 1910.93a.

4. Exhaust and Dust Collection Systems.

WHEREVER
4.1 Wherein exhaust and dust collection systems are used to attain concentrations of airborne asbestos fibre below the levels allowed in standard 1910.93a, the systems ~~should~~ ^{SHALL} be inspected and cleaned weekly.

INSTALLATION AND MAINTENANCE ?
4.2 The design of exhaust and dust collection systems (~~installation and maintenance~~) shall be in accordance with American National Standard (~~ANSI Z 9.2~~) *Fundamentals Governing Design and Operation of Local Exhaust Systems* or equivalent standard.

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5. Housekeeping, in Manufacturing and Fabrication areas.

5.1 All surfaces, machinery, equipment etc. shall be kept free of ~~any~~ accumulation of asbestos dust, lint and waste, preferably by vacuum cleaning methods or other method that will prevent asbestos dust or fibre from becoming airborne. Vacuum cleaners should be equipped with a disposable collection bag and a microfilter.

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5.2 Waste and scrap material, such as dust, chips, off-cuts, edge trimmings and broken pieces shall be placed in ~~tightly~~ ² sealed containers in preparation for disposal.

5.3 Containers used to store or dispose of asbestos-containing materials shall be labeled in a manner to comply with Standard 1910.93a.

6. Procedure recommendations for manufacturing and fabrication operations involving asbestos friction materials.

FEASIBLE
6.1 Wherever possible, friction materials that are specially treated to reduce dust emission should be used.

6.2 Materials should be removed from containers gently and handled with care to avoid unnecessary generation of airborne dust. Care should be taken not to disturb dust remaining in containers and packaging materials. Such dust should be removed by vacuum cleaning wherever possible.

FEASIBLE

7.5 Care should be taken to minimize dust generation and transfer of dust to the person or his clothing. Clothing not worn during working hours must be stored away from contamination, and contaminated work clothing shall be specially handled to prevent exposure to asbestos dust.

^{FEASIBLE}
6.3 Whenever possible, materials should be obtained from the manufacturer cut, machined and/or drilled to suit final requirements to avoid necessity for additional fabrication operations.

6.4 On large volume operations with fixed working points or machines, local exhaust systems should be installed in accordance with American National Standard ANSI Z9.2 or equivalent.

6.5 When cutting, drilling, grinding or machining operations are of short duration, portable dust exhaust units may be suitable. Vacuum cleaning equipment sometimes may be adapted for this purpose, provided the filter system is of adequate efficiency.

6.6 Where dust control by means of local exhaust is not feasible, flooding of the work and the tooling with water or other liquid may be effective in suppressing dust emission.

^{FRAGMENTS}
6.7 Swarf and dust should be removed regularly, preferably by vacuum methods, and disposed of in accordance with paragraphs 5.2 and 5.3.

6.8 If surface dust is present on materials, it may be necessary to remove it by wiping with a damp cloth or mop or by vacuum cleaning with a brush head attachment prior to performing secondary operations such as riveting, bonding, branding, inspection, etc.

6.9 In ~~exceptional cases~~ where it is impracticable to control airborne dust by means of an exhaust system or by wet processing, workers must be protected by approved respirators and protective clothing.

7. Personal Protection.

7.1 Develop good personal hygiene practices. Washing thoroughly before eating will prevent ingestion of foreign matter. Food should not be stored or eaten in the work area.

7.2 It is well documented that smoking is injurious to your health. ~~When coupled with asbestos dust problems, the effects are accentuated.~~ Smoking should be avoided!

7.3 Use of approved respirators should be encouraged wherever measurable airborne asbestos dust concentrations exist, and use of such respirators shall be mandatory wherever airborne fibre limits ^{when req'd by} exceed those prescribed in Standard 1910.93a. Protective clothing shall be provided and worn wherever employees are exposed to ceiling levels exceeding those prescribed in Standard 1910.93a. Employees must be given thorough instruction in proper use, care and maintenance of personal protection equipment.

7.4 No person shall be assigned to perform any work for which respiratory protective equipment is needed unless he has been medically examined and determined fit.

*Will effect of
smoking may be
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be encountered.*

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