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AIA Health and Safety Publication
Recommended Control Procedure No.10 (RCP 10)

ASBESTOS-CONTAINING FRICTION MATERIALS
Application and Servicing



INTRODUCTION

The primary object of this Association is to encourage and facilitate the endeavours of its members to eliminate risks to health, occupational and environmental arising from the use of asbestos.

Many countries have official regulations and guidelines which producers, manufacturers and consumers are required to observe in order to prevent such risks occurring, and progressively the standards stipulated are being achieved. In the course of applying these requirements much practical experience has been acquired and the interchange of such knowledge and the maximising of control techniques is seen as the principal means by which our members can attain our prime objective.

There are still areas where official guidance has not been provided and others where the problems of applying statutory requirements are new and may appear formidable. The Asbestos International Association believes that it has an opportunity and a responsibility to provide what help it can to those concerned with this problem from the wide experience of its members and has decided therefore to produce a series of advisory publications for this purpose.

We wish to remind readers of two important points. First, in considering any recommendations in the AIA publications these should be related to the specific legal requirements in the country concerned. It is clearly not possible in such publications to relate the recommendations in every respect to the specific detailed regulations in each state. Nevertheless, the greater part of existing laws on the subject calls for similar forms of control and where no official regulation exists we advise that action should be based on the recommendation of the ILO meetings of experts on the safe use of asbestos, in December 1973 and October 1981. Secondly, the development of techniques of control is a continuous process, and we hope that the efforts we are undertaking will help to accelerate the process. Techniques which are recommended have reached their present stage as a result of interchange of ideas and practical experience between international experts in the asbestos industry, plant manufacturers, government agencies and many others. It will certainly be necessary regularly to up-date and amend these publications in the light of new ideas and criticisms. All such will be welcomed and will be given full consideration during revision stages.

Asbestos-containing Friction Materials – Application and Servicing

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ASBESTOS-CONTAINING FRICTION MATERIALS
Application and Servicing

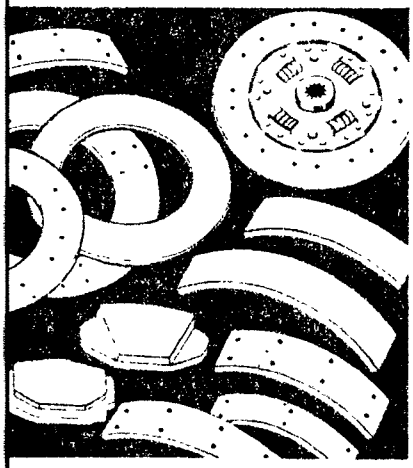
1. Application of these recommendations

These recommendations are intended for the guidance of those engaged in the assembly, application and servicing of friction materials containing asbestos fibre. For the manufacture of such materials, other procedures are applicable and controls recommended for manufacturers may be found to be relevant to application and servicing.

2. Products covered by these recommendations

These recommendations cover the handling, machining and servicing of asbestos-containing friction materials such as:

- Brake lining materials in rolls, strips or sheets
- Brake blocks
- Brake pads
- Brake linings
- Brake lining segments
- Disc brake pads
- Clutch facings
- Automotive transmission bands and band liners
- Industrial brake linings and clutch facings



3. Basic requirements for working with asbestos-containing friction material

3.1 Harmful effects on health from working with asbestos-containing friction materials can only result from the inhalation of asbestos respirable fine dust.

3.2 In friction materials the asbestos content is variable, generally from 30% to 60%. In all cases, the asbestos fibres are locked in the binder and the product does not release any free respirable fibres under normal handling conditions. The only occasions when such fibres can be released into the atmosphere in significant quantities occur when high-speed cutting, grinding or drilling are carried out *without* the provision of proper controls as described hereunder.

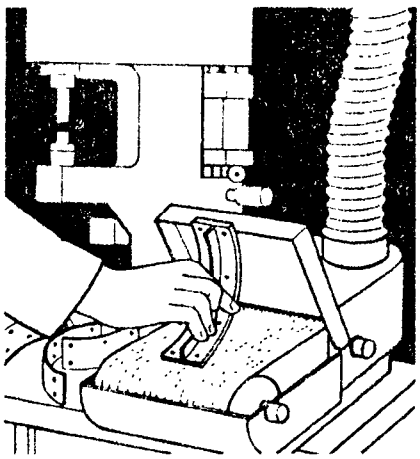
3.3 Only a very small percentage of asbestos fibre can be traced in the wear products of brake linings. Temperature, pressure and friction (during braking) operations convert the asbestos fibre into a non-crystalline amorphous material which represents no hazard. In case of doubt, concentrations of dust should be measured and analysed in order to ensure that they do not exceed the values prescribed by the Authorities.

4. Operations covered by the recommendations

Handling and machining of asbestos-containing friction material in the automotive and brake and clutch industry and in the maintenance and repair of brake and clutch assemblies, such as:

- grinding
- cutting
- drilling
- sawing
- fitting
- machining or finishing*
- cleaning

* Finishing is a process in which a fine grinding finish is applied.



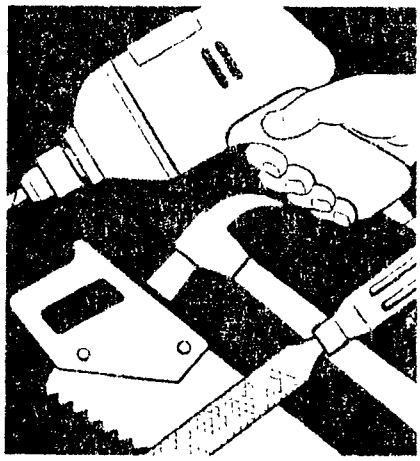
5. Recommended procedure for avoiding creation of dust in the use of asbestos-containing friction materials

5.1 Remember the three main rules for eliminating any risks:

First avoid creating dust and use hand tools or slow running tools which only produce coarse dust or chips (do not normally use tools which result in abrasion of material, thus generating inhalable dust).

Second when it is necessary to use abrasive or high-speed tools these should be fitted with dust extraction equipment suitable for use with asbestos.

Third use local vacuum cleaning equipment (approved for use with asbestos dust) to collect dust and chips, or sweep using dust suppressant.

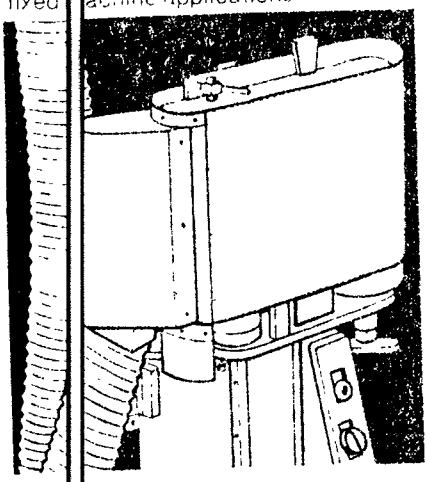


5.2 Handling, transporting, warehousing of new friction materials. Asbestos-containing friction materials supplied in boxed sets should be de-dusted by the manufacturer before packing, and therefore should not require special precautions in handling. When they are delivered in bulk quantities abrasion may result. Dust should be removed by vacuuming.

5.3 Work under factory or workshop conditions.

5.3.1 Approved dust extraction equipment should be fitted to every cutting, drilling or grinding machine to eliminate dust and loose swarf created by such operations. High velocity, low volume equipment should be used for portable tools, industrial vacuum

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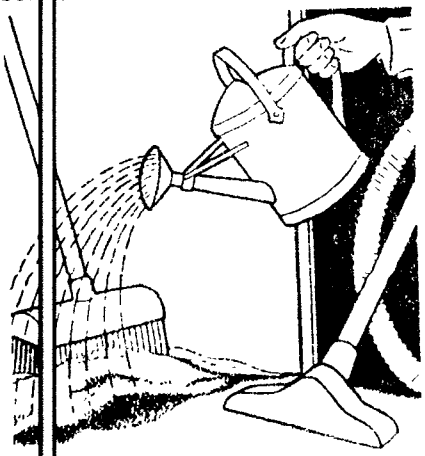


5.3.2 During application friction material
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assemblies with an industrial
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quipment is not available, dust
be removed with a damp cloth
use compressed air or dry
ng

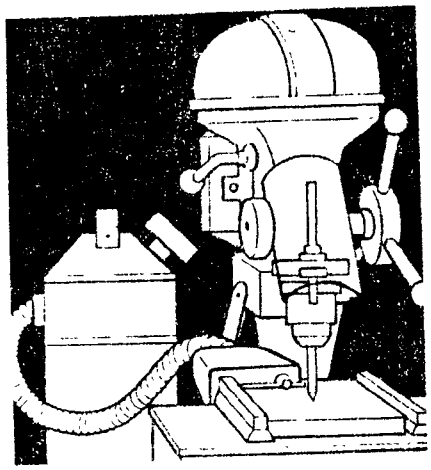
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5.3.
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Loose swarf and dust should be
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5.3.4 Working areas should be kept free from dust by means of a cleaning attachment available for use with the installed exhaust ventilating system, or by using portable industrial vacuum cleaning machines suitable for use with asbestos materials. If these are not available, floors should be thoroughly wetted and/or spread with damp sawdust before sweeping.

5.3.5 There will be some operations such as the maintenance of dust filters, etc., where it is necessary for personnel to be provided with appropriate individual protective equipment.



5.3.6 Suitable equipment.

dust extraction

vacuum cleaning

specialised turning equipment

personal protective equipment

Full details of suppliers of suitable equipment which has been tested for use with products together with advice on the design and specification of such equipment may be obtained from AIA or from the Association's members. They will be pleased to supply names and addresses of national suppliers of such equipment.

5.4 Do-it-yourself operations

Simple replacement of brake shoes or disc brakes is unlikely to be a source of dust emission. The do-it-yourselfer is unlikely to have access to equipment as described in 5.3.2, but wear products can satisfactorily be removed from brake assemblies with a damp cloth. It is generally preferable, in the interests of road safety, for work on braking systems to be undertaken by properly qualified and equipped operators.



6. Waste Disposal

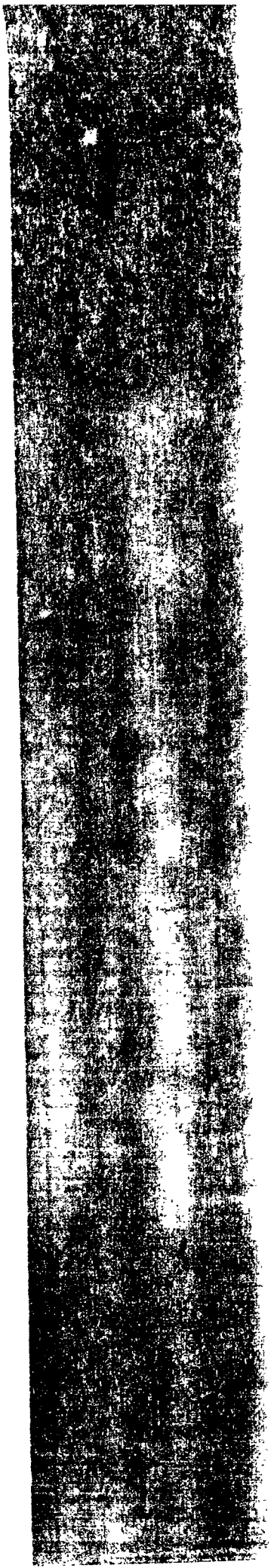
6.1 Loose swarf and dust collected from fabrication processes should be collected for disposal in a controlled manner and in accordance with regulations where these exist. Strong plastic bags are a suitable form of impermeable container (see RCP3).

6.2 Broken and worn linings will not normally produce harmful quantities of dust. However, to avoid unnecessary anxiety (and in some countries to comply with legal requirements), where such waste materials occur in quantity they should be collected and disposed of in a controlled manner, and in accordance with regulations where these exist (see RCP3).

7. General

Further information on any aspect of safe working with asbestos-containing friction material will gladly be supplied by the Asbestos International Association or by any of the Association members whose addresses are contained elsewhere in this publication.

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