IS 11769-2 (2005): Guidelines for safe use of products containing asbestos, Part 2: Friction materials [CED 53: Cement Matrix Products]

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भाग 2 घर्षण सामग्री

(पहला पुनरीक्षण)

Indian Standard

GUIDELINES FOR SAFE USE OF PRODUCTS CONTAINING ASBESTOS

PART 2 FRICTION MATERIALS

(First Revision)

ICS 13.100

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

December 2005

Price Group 2

FOREWORD

This Indian Standard (Part 2) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cement Matrix Products Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1986 considering that exposure to asbestos dust can have harmful effects on the health of workers and therefore, to lay down the guidelines on how the risk of exposure to asbestos dust emission can be prevented, controlled or minimized. This standard, lays down the guidelines for safe use of products containing asbestos, has three parts. This standard lays down the guidelines for safe use of friction materials containing asbestos. Guidelines for safe use of asbestos cement products and non-cement asbestos products other than friction materials are covered in Parts 1 and 3 of this standard, respectively. This standard lays down guidelines regarding safe use and servicing of different friction products containing asbestos, improving conditions in workplaces, preventive measures, cleaning, packaging, transport and disposal of asbestos waste, precautionary warnings, etc. This revision has elaborated the products covered under friction materials and the various dust generating operations. The other parts in this series are:

Part 1 : Asbestos cement products

Part 3 : Non-cement asbestos products other than friction materials

In the formulation of this standard, due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country. This has been met by deriving assistance from 'ILO Codes of practice: Safety in the use of asbestos', 1984 published by International Labour Office, Geneva and Schedule XIV on 'Handling and processing of asbestos', framed under Section 87 of *Factories Act.*

Indian Standard

GUIDELINES FOR SAFE USE OF PRODUCTS CONTAINING ASBESTOS

PART 2 FRICTION MATERIALS

(First Revision)

1 SCOPE

1.1 This standard (Part 2) lays down the guidelines for safe use of friction material containing asbestos.

1.2 These guidelines are applicable to asbestos containing friction material (mould and woven) (*see* Fig. 1), such as:

a) Brake lining materials in roll, strip or sheet form;
b) Brake blocks;
c) Brake liners;
d) Brake lining segments;
e) Disc brake pads;
f) Clutch facings;
g) Automotive transmission discs and band liners; and
h) Industrial brake linings and clutch facings, etc.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 OBJECT

The object of this standard is to recommend and guide those engaged in the assembly, application and servicing of friction materials containing asbestos fibre. This shall be adopted to ensure that friction materials containing asbestos are used safely and without harmful emission of asbestos dust.

4 BASIC REQUIREMENTS FOR WORKING WITH ASBESTOS CONTAINING FRICTION MATERIAL

4.1 Friction materials shall, as far as practicable, be supplied already cut, machined or drilled to requirements.

4.2 Hand tools or low-speed tools producing coarse dust or chips should be used rather than high-speed machines or those which cut by abrading the material.

4.3 Fixed working points or machines having potential to generate airborne asbestos dust shall have an appropriate and effective dust extraction system installed, with sufficient velocity so as to maintain the fibre limits within the stipulated threshold levels.

5 USE OF FRICTION MATERIAL

5.1 These recommendations shall cover all dust generating operations, such as:

a) Grinding,
b) Cutting,
c) Drilling,
d) Sawing,
e) Fitting,
f) Machining,
g) Finishing, and
h) Cleaning or any other dust generating operations.

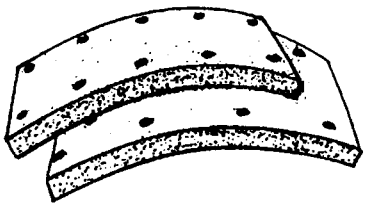
5.2 Vacuum cleaning equipment shall be used to collect dust and chips.

5.3 Whenever hand tools and low speed tools are used, use of water drip is recommended. When dust extraction unit is provided, use of water drip is not required.

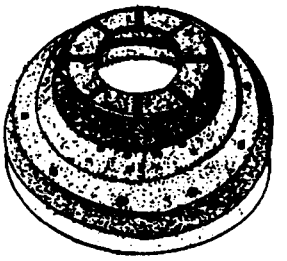
5.4 Appropriate dust extraction equipment shall be fitted to every cutting, drilling or grinding machine to eliminate dust. High velocity, low volume equipment shall be used for portable tools.

5.5 When linings, blocks and clutch facings are riveted by using machine, dust extraction equipment shall be provided (*see* Fig. 2).

5.6 All exhaust ventilation equipment shall be inspected and tested everyday for its effectiveness. Record of every such inspection shall be maintained and retained.

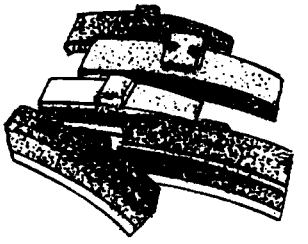


BRAKE LININGS



CLUTCH FACINGS

DISCPADS



BRAKE BLOCK

FIG. 1 ASBESTOS CONTAINING FRICTION PRODUCTS

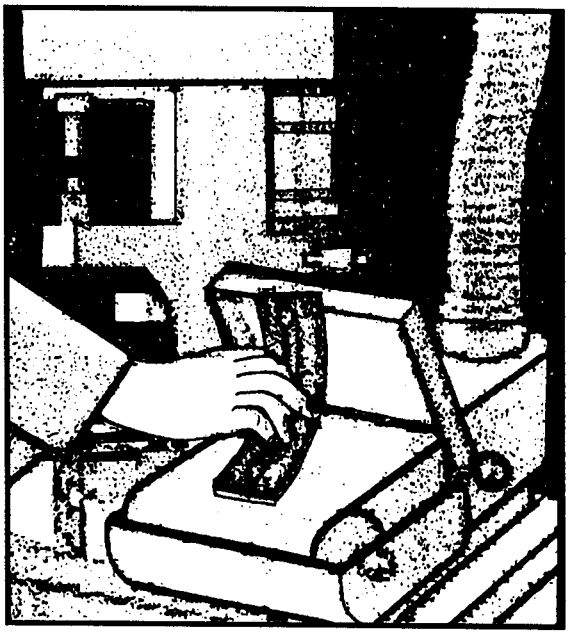


FIG. 2 DUST EXTRACTION UNIT

6 SERVICING OF BRAKES AND CLUTCHES IN WORKSHOPS AND GARAGES

6.1 When removing worn friction material, the accumulated dust shall be removed by a vacuum cleaner drum or by spraying with sufficient quantity of water. When vacuum cleaner is used it shall be fitted with a high efficiency filter.

6.2 When such of the above facilities are not available, dust shall be removed with a damp cloth.

6.3 Compressed air or dry brushing shall not be used to remove accumulated dust.

6.4 Loose swarf and dust shall be removed from the workplace by vacuum cleaning. Where this is not possible the material shall be thoroughly wetted before removal.

6.5 Working areas shall be free from dust and shall be thoroughly wetted before sweeping.

6.6 At all times friction materials shall be supplied to meet the specific requirements without any extra finishing operations. If any finishing operations are required, this shall be carried out only with hand tools. Power saws or abrasive disc shall not be used unless exhaust ventilation equipment is attached to them in operation.

6.7 Where products require machining operation this shall be performed under exhaust ventilation.

6.8 Before applying adhesive to bond segments to brake shoes, surface dust shall be cleaned by damp cloth.

7 WASTE DISPOSAL

7.1 Waste material shall not be allowed to accumulate on the floor. All working areas shall be kept clean by regular use of vacuum cleaner.

7.2 Where vacuum cleaning is not practicable, the waste material shall be thoroughly wetted before removal. Cleaning shall be done in accordance with the provisions laid down in IS 11767.

7.3 Loose swarf and dust collected from fabrication processes shall be collected for disposal in a controlled manner. Strong plastic bags are suitable form of impermeable container.

7.4 Broken and worn linings may not normally produce harmful quantities of dust. However, to avoid unnecessary anxiety, where such materials occur in quantity, these shall be collected and disposed in controlled manner. Disposal of waste shall be in accordance with provisions laid down in IS 11768.

8 WARNING

Packages of friction material containing asbestos shall bear a pictorial warning sign and precautionary notice as given in IS 12081 (Part 2) to caution the users that these products contain asbestos fibres and improper use of these materials may result in generation of asbestos dust, inhalation of which may cause serious damage to health.

9 MATERIAL DATA SHEET

Asbestos containing friction materials are required to be accompanied by material safety data sheet containing the following information:

a) Product designation,
b) Name and address of manufacturer of the product,
c) Health hazards that might arise due to its constituents including asbestos,
d) Precautionary information regarding handling of the product, and
e) Procedure for cleaning and safe disposal of waste.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*	*IS No.*	*Title*
IS 11767 : 1986	Recommendations for cleaning of premises and plants using asbestos fibres	IS 12081 (Part 2) : 1987	Recommendations for pictorial warning signs and precautionary notices for asbestos and products containing asbestos: Part 2 Asbestos and its products
IS 11768 : 1986	Recommendations for disposal of asbestos waste material		

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. CED 53 (7198).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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