

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 12078 (1987): Recommendations for personal protection of workers engaged in handling asbestos [CED 53: Cement Matrix Products]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



Indian Standard

RECOMMENDATIONS FOR
PERSONAL PROTECTION OF WORKERS
ENGAGED IN HANDLING ASBESTOS

UDC 677.511 : 628.511 : 658.382.1/-3

© Copyright 1987

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

Indian Standard

RECOMMENDATIONS FOR PERSONAL PROTECTION OF WORKERS ENGAGED IN HANDLING ASBESTOS

Cement and Concrete Sectional Committee, BDC 2

Chairman

DR H. C. VISVESVARAYA

Representing

National Council for Cement and Building Materials,
New Delhi

Members

ADDITIONAL DIRECTOR STANDARDS (B & S)	Research, Designs & Standards Organization (Ministry of Railways), Lucknow
DEPUTY DIRECTOR STANDARDS (B & S) (<i>Alternate</i>)	
SHRI K. P. BANERJEE	Larsen and Toubro Limited, Bombay
SHRI HARISH N. MALANI (<i>Alternate</i>)	
SHRI S. K. BANERJEE	National Test House, Calcutta
CHIEF ENGINEER (BD)	Bhakra Beas Management Board, Nangal Township
SHRI J. C. BASUR (<i>Alternate</i>)	
CHIEF ENGINEER (DESIGNS)	Central Public Works Department, New Delhi
EXECUTIVE ENGINEER (D)-III (<i>Alternate</i>)	
CHIEF ENGINEER (RESEARCH)- cum-DIRECTOR	Irrigation and Power Research Institute, Amritsar
RESEARCH OFFICER (CONCRETE TECHNOLOGY) (<i>Alternate</i>)	
DIRECTOR	A. P. Engineering Research Laboratories, Hyderabad
JOINT DIRECTOR (<i>Alternate</i>)	
DIRECTOR	Central Soil and Materials Research Station, New Delhi
CHIEF RESEARCH OFFICER (<i>Alternate</i>)	
DIRECTOR (CMDD-I)	Central Water Commission, New Delhi
DEPUTY DIRECTOR (CMDD-I) (<i>Alternate</i>)	
SHRI V. K. GHANEKAR	Structural Engineering Research Centre (CSIR), Roorkee
SHRI S. GOPINATH	The India Cements Ltd, Madras
SHRI T. TAMILAKERAN (<i>Alternate</i>)	

(Continued on page 2)

© Copyright 1987

BUREAU OF INDIAN STANDARDS

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
SHRI A. K. GUPTA	Hyderabad Industries Limited, Hyderabad
SHRI P. J. JAGUS	Associated Cement Companies Ltd, Bombay
DR A. K. CHATTERJEE (<i>Alternate</i>)	
SHRI N. G. JOSHI	Indian Hume Pipes Co Ltd, Bombay
SHRI R. L. KAPOOR	Ministry of Transport (Department of Surface Transport) (Roads Wing)
SHRI R. K. SAXENA (<i>Alternate</i>)	
SHRI S. K. LAHA	The Institution of Engineers (India), Calcutta
SHRI B. T. UNWALLA (<i>Alternate</i>)	
DR A. K. MULLICK	National Council for Cement and Building Materials, New Delhi
SHRI S. N. PAL	M. N. Dastur and Co Pvt Ltd, Calcutta
SHRI BIMAL DASGUPTA (<i>Alternate</i>)	
SHRI H. S. PASRICHA	Hindustan Prefab Ltd, New Delhi
SHRI Y. R. PHULL	Indian Roads Congress, New Delhi; and Central Road Research Institute (CSIR), New Delhi
SHRI M. R. CHATTERJEE (<i>Alternate</i>)	Central Road Research Institute (CSIR), New Delhi
DR MOHAN RAI	Central Building Research Institute (CSIR), Roorkee
DR S. S. REHSI (<i>Alternate</i>)	
DR M. RAMAIAH	Structural Engineering Research Centre (CSIR), Madras
DR A. G. MADHAVA RAO (<i>Alternate</i>)	
SHRI A. V. RAMANA	Dalmia Cement (Bharat) Ltd, New Delhi
DR K. C. NARANG (<i>Alternate</i>)	
SHRI G. RAMDAS	Directorate General of Supplies and Disposals, New Delhi
DR A. V. R. RAO	National Buildings Organization, New Delhi
SHRI J. SEN GUPTA (<i>Alternate</i>)	
SHRI T. N. SUBBA RAO	Gammon India Ltd, Bombay
SHRI S. A. REDDI (<i>Alternate</i>)	
SHRI A. U. RIJHSINGHANI	Cement Corporation of India, New Delhi
SHRI C. S. SHARMA (<i>Alternate</i>)	
SHRI H. S. SATYANARAYANA	Engineer-in-Chief's Branch, Army Headquarters, New Delhi
SHRI V. R. KOTNIS (<i>Alternate</i>)	
SECRETARY	Central Board of Irrigation and Power, New Delhi
SHRI K. R. SAXENA (<i>Alternate</i>)	
SHRI R. K. SINHA	Development Commissioner for Cement Industry (Ministry of Industry), New Delhi
SHRI S. S. MIGLANI (<i>Alternate</i>)	
SUPERINTENDING ENGINEER (DESIGNS)	Public Works Department, Government of Tamil Nadu, Madras
EXECUTIVE ENGINEER (SMR DIVISION) (<i>Alternate</i>)	
SHRI L. SWAROOP	Orissa Cement Ltd, New Delhi
SHRI H. BHATTACHARYA (<i>Alternate</i>)	
SHRI S. K. GUHA THAKURTA	Gannon Dunkerley & Co Ltd, Bombay
SHRI S. P. SANKARNARAYANAN (<i>Alternate</i>)	
SHRI G. RAMAN, Director (Civ Engg)	Director General, BIS (<i>Ex-officio Member</i>)

Secretary

SHRI N. C. BANDYOPADHYAY
Deputy Director (Civ Engg), BIS

(Continued on page 11)

Indian Standard

RECOMMENDATIONS FOR PERSONAL PROTECTION OF WORKERS ENGAGED IN HANDLING ASBESTOS

0. FOREWORD

0.1 This Indian Standard was adopted by the Bureau of Indian Standards on 3 August 1987, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 In recent years, there has been a growing awareness that exposure to asbestos dust can have harmful effects on the health of workers. In order to give guidance on how the risk of exposure to asbestos dust can be prevented, controlled or minimized, it was felt necessary to lay down some standards regarding safe use of different products containing asbestos, improving conditions in workplaces, preventive measures, protection and supervision of the health of workers, packaging and transport of asbestos, disposal of asbestos, etc. This standard lays down the recommendations for personal protection and hygiene of workers engaged in handling asbestos in asbestos mines and factories manufacturing products containing asbestos. The concentration of airborne asbestos dust in work environment shall be determined in accordance with the method given in IS : 11450-1986*.

0.3 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 the International Labour Office, Geneva and Schedule XIV on 'Handling and Processing of Asbestos', framed under Section 87 of *Factories Act*.

0.4 This standard is one of a series of Indian Standards on safety in handling and use of asbestos. Other standards in the series already formulated and under preparation are as follows:

IS : 11450-1986 Method for determination of airborne asbestos fibre concentration in work environment by light microscopy (membrane filter method)

*Method for determination of airborne asbestos fibre concentration in work environment by light microscopy (membrane filter method).

- IS : 11451-1986 Recommendations for safety and health requirements relating to occupational exposure to asbestos
- IS : 11767-1986 Recommendations for cleaning of premises and plants using asbestos fibres
- IS : 11768-1986 Recommendations for disposal of asbestos waste material
- IS : 11769 (Part 1)-1987 Guidelines for safe use of products containing asbestos: Part 1 Asbestos cement products
- IS : 11769 (Part 2)-1986 Guidelines for safe use of products containing asbestos: Part 2 Friction materials
- IS : 11769 (Part 3)-1986 Guidelines for safe use of products containing asbestos: Part 3 Non-cement asbestos products other than friction materials
- IS : 11770 (Part 1)-1987 Recommendations for control of emission of asbestos dust in premises manufacturing products containing asbestos: Part 1 Asbestos cement products
- IS : 11770 (Part 2)-1986 Recommendations for control of emission of asbestos dust in premises manufacturing products containing asbestos: Part 2 Friction materials
- IS : 11770 (Part 3)-1987 Recommendations for control of emission of asbestos dust in premises manufacturing products containing asbestos: Part 3 Non-cement asbestos products other than friction materials
- IS : 12079-1987 Recommendations for packaging, transport and storage of asbestos
- IS : 12080-1987 Recommendations for local exhaust ventilation systems in premises manufacturing products containing asbestos
- IS : 12081 (Part 1)-1987 Recommendations for pictorial warning signs and precautionary notices for asbestos and products containing asbestos: Part 1 Workplaces
- 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 : 12082 (Part 1)-1987 Recommendations for control of asbestos emission: Part 1 Mining of asbestos ore
- IS : 12082 (Part 2) Recommendations for control of asbestos emission: Part 2 Milling of asbestos (*under preparation*)
- Method for determination of asbestos concentration in water (*under preparation*)

1. SCOPE

1.1 This standard lays down the recommendations for personal protection of workers engaged in handling asbestos in asbestos mines and factories manufacturing products containing asbestos.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 11451-1986*, IS : 8347-1977† and the following definition shall apply.

2.1.1 Respiratory Protective Equipment — Equipment which removes airborne contaminants from the supply of breathing air reaching the wearer or equipment which provides a source of uncontaminated air or oxygen to the wearer. It includes both respirators and breathing apparatus.

3. GENERAL

3.1 In addition to the recommendations laid down in this standard, it is absolutely essential for the mines and factories handling asbestos to adopt suitable measures to control and minimize the occupational exposure to airborne asbestos dust. The mines and factories shall, therefore, equip and maintain buildings, installations, machines and workplaces, and organize work in such a way that contamination of working environment is minimized and that the exposure of workers to airborne asbestos dust is limited as far as is reasonably practicable, and is at least within the permissible exposure limit. For safety and health requirements of the workers, the recommendations given in IS : 11451-1986* shall be followed. Personal protection to be used and adopted by the workers shall be regarded only as a temporary or emergency measure and not as an alternative to technical control specified in Indian Standards listed in 0.4.

4. PERSONAL PROTECTION

4.1 Personal protection of workers comprises of the followings:

- a) Use of respiratory protective equipment,
- b) Use of protective clothing, and
- c) Use of proper hygienic facilities.

5. RESPIRATORY PROTECTIVE EQUIPMENT

5.1 Approved respiratory protective equipment shall be provided for and worn by any person who is exposed or liable to be exposed to airborne asbestos dust concentration in excess of the permissible exposure limit.

*Recommendations for safety and health requirements relating to occupational exposure to asbestos.

†Glossary of terms relating to respiratory protective devices.

All respiratory protective equipment shall be subject to approval by the appropriate authority.

5.2 Selection

5.2.1 Selection of respiratory protective equipment shall be made according to IS : 9623-1980*. Only those types of respiratory protective equipment, which have been tested and approved by the appropriate authority, shall be worn. It shall also be suitable for the particular work activity and wearable for the entire period of use.

5.2.2 The type of respiratory protective equipment to be used shall depend on the maximum concentration of airborne asbestos dust likely to be encountered during the work. Unless otherwise specified by the appropriate authority, for classifying the range of concentrations and the use of the type of respiratory protective equipment, the recommendations given in Appendix A shall be followed.

5.2.3 The following points shall also be taken care of while selecting the respiratory protective equipment:

- a) Facial shape,
- b) Facial hair, and
- c) Comfort.

5.2.4 While selecting a respiratory protective equipment, it shall be ensured that spares are readily obtainable. Ease of maintenance and adequate range of sizes in the model selected are also important factors.

5.2.5 Filter-type respirators shall conform to IS : 9473-1980† and breathing apparatus shall conform to IS : 10245 (Parts 1 to 4)-1982‡.

5.3 Cleaning and Maintenance — Cleaning and maintenance of respiratory protective equipment shall, in general, be done according to IS : 9623-1980*. However, special care, as detailed in **5.3.1** to **5.3.8** shall be taken.

5.3.1 Respiratory protective equipment shall be issued for the exclusive use of the workers to whom they are supplied. Respiratory protective equipment shall be regularly cleaned and serviced by properly trained operators before re-issue and suitable record shall be maintained.

*Recommendations for the selection, use and maintenance of respiratory protective devices.

†Specification for filter-type particulate matter respirators.

‡Specification for breathing apparatus:

- Part 1 Closed-circuit breathing apparatus (compressed oxygen cylinder),
- Part 2 Open-circuit breathing apparatus,
- Part 3 Fresh air hose and compressed air line breathing apparatus, and
- Part 4 Escape breathing apparatus (short duration self-contained type).

5.3.2 Accumulated asbestos dust on the outside of the equipment shall be removed by suitable vacuum cleaning so that asbestos dust is not liberated to the air.

5.3.3 Respiratory protective equipment shall be issued from and returned to a central point. After thorough cleaning, checks shall be made on the condition of the face piece, head straps, inlet and exhaust valves. For positive pressure respirators fitted with battery driven air supplies, the battery shall be recharged as necessary. Manufacturer's guidance shall be followed at all times.

5.3.4 A suitable container, such as metal box or plastic bag shall be provided for the storage of individual respiratory protective equipment, when not in use.

5.3.5 Respiratory protective equipment shall be disinfected, washed and cleaned weekly or more often when the equipment is in regular use. Prefilters on filtered air respirators shall be changed and filters shall be checked on each occasion.

5.3.6 A record shall be kept for each respirator or breathing apparatus showing the worker to whom it is issued and the dates on which it is cleaned and serviced.

5.3.7 A record of training and instruction in the use of respiratory protective equipment shall be made for each worker concerned.

5.3.8 Where respiratory protective equipment is used, this fact shall be recorded on the monitoring records of dust exposure for the particular job.

5.4 Use

5.4.1 Use of respiratory protective equipment shall, in general, be made according to IS : 9623-1980*.

5.4.2 The part of respiratory protective equipment incorporating the facepiece shall be a personal issue. Before it is passed to anyone else, it shall be thoroughly cleaned and disinfected.

5.4.3 All workers required to use respiratory protective equipment shall be instructed in its use. Instruction shall be given on the following points:

- a) The reason for the use of the equipment, and the importance of using it conscientiously;
- b) The circumstances in which it shall be used and how these circumstances are to be recognized;

*Recommendations for the selection, use and maintenance of respiratory protective devices.

- c) The manner in which the equipment operates;
- d) The correct method of use and of checking the fit;
- e) The method of checking for correct operation; and
- f) The need for regular servicing.

5.5 Storage — Cleaned respiratory protective equipment shall be stored in accordance with IS : 9623-1980* taking care to avoid contamination.

5.6 Establishment of a Respirator Programme — The employee shall establish a respirator programme and maintain a historic file in this connection.

6. PROTECTIVE CLOTHING

6.1 Where personal clothing may become contaminated with asbestos dust, the employer shall provide appropriate work clothing.

6.2 Where airborne asbestos dust concentration necessitate the use of respiratory protective equipment, special protective clothing shall also be provided and worn.

6.3 Such special protective clothing shall cover completely all works clothing so that no asbestos dust is retained when the protective clothing is removed. Suitable head covering shall also be provided.

6.4 When re-usable protective or works clothing is provided, separate lockers shall be provided so that contaminated clothing can be stored separately from personal clothing.

6.5 Vacuum cleaners for preliminary de-dusting of protective or works clothing shall be provided at the entrance to the locker room, in which such clothing is removed and stored.

6.6 Respiratory protective equipment shall be removed only after de-dusting of protective clothing.

6.7 Regular cleaning and inspection of the contaminated locker room shall be undertaken to ensure that no accumulation of asbestos dust occurs.

6.8 Clean spare clothing of appropriate size shall be available when circumstances demand.

6.9 Protective clothing shall be worn only in the asbestos working area and the contaminated side of the wash/changing room.

*Recommendations for the selection, use and maintenance of respiratory protective devices.

6.10 Cleaning and Laundering — Cleaning and laundering of protective clothing shall be done as detailed in 6.10.1 to 6.10.2.4.

6.10.1 It shall be cleaned by vacuum-cleaning equipment, whenever the wearer leaves the asbestos working area.

6.10.2 It shall be laundered as frequently as is necessary to ensure its cleanliness and efficiency.

6.10.2.1 Clothing shall be laundered done under controlled conditions to prevent the emission of airborne asbestos during handling, transport and laundering.

6.10.2.2 Where contaminated clothing is sent for laundering outside the factory, it shall be packed in dust-proof containers, such as plastic bags, and such containers shall be secured at the neck. Such containers shall be conspicuously marked 'asbestos contaminated clothing' in capital letters.

6.10.2.3 When a contract laundry is employed, care shall be taken that the contractor fully understands the precautions necessary for handling asbestos contaminated clothing and is equipped to deal with such clothing.

6.10.2.4 Laundering of protective clothing in wearer's home shall be strictly prohibited.

6.11 Clothes Lockers — Two separate lockers or containers for each worker so separated or isolated as to prevent contamination of the workers off-site clothes from work or protective clothes shall be provided.

7. HYGIENIC FACILITIES

7.1 Adequate provision shall be made for the following hygienic facilities:

- a) Arrangement for removal and replacement of works or protective clothing worn to and from work together with storage for such clothing;
- b) Arrangement to ensure that the air flow is such as to prevent the movements of air from areas having airborne asbestos concentration in excess of the permissible limit into the clean side of the facility;
- c) Arrangement for removal and replacement of respiratory protective equipment together with storage for such equipment; and

- d) Showering facilities, at least one for every 15 persons requiring the use of protective clothing, including provision for disposal of contaminated water.

7.2 Location of Facilities — The hygienic facilities shall, whenever possible, adjoin the asbestos working area to prevent the contamination of other areas. When this is not possible, they shall be as close to the working area as circumstances will allow and supplementary facilities as given in 7.2.1 and 7.2.2 shall be provided next to the working area.

7.2.1 Supplementary facilities provided next to the working area shall allow a worker to do the following operations:

- a) Vacuum cleaning of the protective equipment; and
- b) Remove and store first protective clothing and then respiratory protective equipment.

7.2.2 Exhaust ventilation creating negative pressure shall be provided in the unit providing supplementary facilities.

7.3 Maintenance and Cleaning — Effective arrangements shall be made for cleaning and maintaining the hygienic facilities.

A P P E N D I X A

(Clause 5.2.2)

RECOMMENDED RESPIRATORS FOR DIFFERENT CONCENTRATION AIRBORNE ASBESTOS FIBRE IN WORKPLACE

A-1. The type of respirators to be used for different concentration of airborne asbestos fibre in a workplace shall be as given below:

<i>Concentration</i>	<i>Type of Respirators Required</i>
Less than permissible exposure limit	No respirator required.
Less than or equal to 5 fibres per cm ³	Re-usable or replaceable filter-type air purifying dust respirator or single-use dust respirator
Less than or equal to 50 fibres per cm ³	Powered air purifying positive-pressure dust respirator
Greater than 50 fibres per cm ³	Positive-pressure supplied air respirator with full face piece

(Continued from page 2)

Asbestos Cement Products Subcommittee, BDC 2 : 3

Convener

DR S. K. CHOPRA
S-436 Greater Kailash
New Delhi

*Members**Representing*

SHRI S. K. BANERJEE
SHRI N. G. BASAK

National Test House, Calcutta
Directorate General of Technical Development,
New Delhi

SHRI P. K. JAIN (*Alternate*)
SHRI S. N. BASU

Directorate General of Supplies & Disposals,
New Delhi

SHRI T. N. OBOVEJA (*Alternate*)
SHRI S. R. BHANDARI

Shree Digvijay Cement Co Ltd, Bombay

SHRI V. R. NATARAJAN (*Alternate*)

SHRI S. K. CHAKRABORTY

Development Commissioner, Small Scale Industries,
New Delhi

SHRI S. C. KUMAR (*Alternate*)

DEPUTY DIRECTOR STANDARDS Research, Designs & Standards Organization
(B & S) (Ministry of Railways), Lucknow

ASSISTANT DIRECTOR STANDARDS (B & S)-II (*Alternate*)

DIRECTOR, ENGINEERING GEOLOGY Geological Survey of India, Calcutta
DIVISION I

SHRI S. K. MATHUR (*Alternate*)

SHRI S. GANAPATHY

Southern Asbestos Cement Ltd, Madras

GENERAL MANAGER (CEMENT)

Rohtas Industries Ltd, Dalmianagar

SHRI D. N. SINGH (*Alternate*)

SHRI S. S. GOENKA

Sarbamangala Manufacturing Co, Calcutta

SHRI I. P. GOENKA (*Alternate*)

SHRI SRINIVASAN N. IYER

Everest Building Products Ltd, Bombay

DR V. G. UPADHYAYA (*Alternate*)

SHRI P. S. KALANI

Saurabh Construction Co, Indore

DR KALYAN DAS

Central Building Research Institute (CSIR),
Roorkee

SHRI K. D. DHARIYAL (*Alternate*)

LT-COL KAMLESH PRAKASH

Engineer-in-Chief's Branch, Army Headquarters,
New Delhi

SHRI K. R. BHAMBANI (*Alternate*)

SHRI HARSHAD R. OZA

Flowel Asbestos Products, Ahmadabad

SHRI V. PATTABHI

Hyderabad Industries Ltd, Hyderabad

SHRI A. K. GUPTA (*Alternate*)

DR N. RAGHAVENDRA

National Council for Cement and Building
Materials, New Delhi

DR A. V. R. RAO

National Buildings Organization, New Delhi

SHRI J. SEN GUPTA (*Alternate*)

SUPERINTENDING SURVEYOR OF WORKS (CZ)

Central Public Works Department, New Delhi

SURVEYOR OF WORKS (CZ) (*Alternate*)

SHRI S. A. SWAMY

Municipal Corporation of Delhi, Delhi

(Continued on page 12)

(Continued from page 11)

Panel for Safety in Handling and Use of Asbestos, BDC 2 : 3/P2

Convener

SHRI D. K. BISWAS

Representing

Department of Bio-Technology (Ministry of Science and Technology), New Delhi

Members

SHRI B. K. BANERJEE

Sundaram-Abex Ltd, Madras

SHRI K. PANDARINATH (*Alternate*)

SHRI N. G. BASAK

Directorate General of Technical Development, New Delhi

SHRI P. K. JAIN (*Alternate*)

SHRI S. K. CHAKRABORTY

Development Commissioner, Small Scale Industries, New Delhi

SHRI S. C. KUMAR (*Alternate*)

DR G. G. DATTA

In personal capacity (7/72, Varma Nagar, Old Nagardas Road, Andheri East, Bombay)

DIRECTOR

National Institute of Occupational Health, Ahmadabad

DR S. K. DAVE (*Alternate*)

SHRI S. GANAPATHY

Southern Asbestos Cement Ltd, Madras

SHRI S. A. BHIMA RAJA (*Alternate*)

DR H. N. GUPTA

Directorate General of Factory Advice Service and Labour Institutes, Bombay

SHRI V. S. SASIKUMAR (*Alternate*)

SHRI SRINIVASAN N. IYER

Everest Building Products Ltd, Bombay

SHRI T. S. PRADHAN (*Alternate*)

BRIG D. B. KAPOOR (RETD)

Asbestos Information Centre (India), New Delhi

DR J. L. KAW

Industrial Toxicology Research Centre (CSIR), Lucknow

DR N. K. MEHROTRA (*Alternate*)

DR M. V. NANOTHI

National Environmental Engineering Research Institute (CSIR), Nagpur

DR D. M. DHARMADHIKARI (*Alternate*)

SHRI G. K. PANDEY

Department of Environment, New Delhi

SHRI V. PATTABHI

Hyderabad Industries Ltd, Hyderabad

DR S. P. VIVEK CHANDRA

RAO (*Alternate*)

DR N. RAGHAVENDRA

National Council for Cement and Building Materials, New Delhi

SHRI RATTAN LAL (*Alternate*)

SHRI S. RAMASWAMY

Hindustan Ferodo Ltd, Bombay

SHRI A. HOMER (*Alternate*)

DR A. V. R. RAO

National Buildings Organization, New Delhi

SHRI D. N. MATHUR (*Alternate*)

SHRI B. K. SHARAN

Directorate General of Mines Safety (Ministry of Labour), Dhanbad

DR D. K. SRIVASTAVA (*Alternate*)

SHRI NAVNIT TALWAR

Reinz Tal-Broz (Pvt) Ltd, New Delhi

SHRI A. K. SHARMA (*Alternate*)

AMENDMENT NO. 1 SEPTEMBER 2005
TO
IS 12078 : 1987 RECOMMENDATIONS FOR
PERSONAL PROTECTION OF WORKERS ENGAGED
IN HANDLING ASBESTOS

(Page 5, clause 1.1) — Insert the following new clause:

2 OBJECT

2.2 The objectives of this standard are:

- c) To prevent or minimize the potential for exposure of airborne asbestos dust to workers in asbestos mines,
- d) To prevent or minimize the potential for exposure of airborne asbestos dust to workers engaged in asbestos based industries.'