

**Standard Operating Procedure
for
installation, dismantling and disposal of asbestos cement roof sheets,
asbestos cement wall sheets and asbestos cement pipes**



CENTRAL POLLUTION CONTROL BOARD
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'Parivesh Bhawan', East Arjun Nagar,
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1.0 About asbestos

Asbestos is a group of six naturally occurring fibrous silicate minerals. The physical properties, besides fibrous character such as fineness, flexibility, tensile strength & length of fibres, infusibility, low heat conductivity and high resistance to electricity & sound and also to corrosion by acids, make asbestos commercially important. Commercial asbestos is classified into two main mineralogical groups: serpentine asbestos or chrysotile asbestos and amphibole asbestos. The latter includes asbestos minerals, such as, tremolite, actinolite, anthophyllite, amosite and crocidolite. Commercially, chrysotile asbestos is far superior in physical properties and hence more valuable than amphibole asbestos.

1.1 Asbestos Source/mining

Asbestos mining is not being carried out in India. License for mining asbestos are not being issued. Although, it is estimated that over 4.6 lakh tonnes of chrysotile asbestos was imported into the India during 2023-24 (Annual Report 2024-25, Ministry of Mines). India's asbestos requirement is met through imports from Russia, Brazil, Kazakhstan, Hungary and Poland.

2.0 Uses:

Industrial use of asbestos is linked with the type of asbestos. Chrysotile asbestos, being more fibrous and possessing better tensile strength than amphibole variety is used in the manufacture of cement sheets, asbestos fabrics, pipes and allied products. It is also used in brake linings, insulation and fireproof clothing. Asbestos fibres are used with cement as binders for manufacturing asbestos-cement products.

2.1 Asbestos usage in India

According to the information provided by the Fibre Cement Products Manufacturers Association (FCPMA), about ninety percent of the chrysotile asbestos is used in India for two main products - cement asbestos sheets (85%) and cement asbestos pipes (5%), and the remaining 10% is used in other products. Further, the FCPMA has informed that 3.4 lakh ton asbestos was used for cement-asbestos sheet production during 2023-24, which contains 8%-9% asbestos, implying that approximately 40 lakh ton cement-asbestos sheets are being manufactured annually ($3.4 \times 100 / 8.5$).

3.0 Background of present matter at Hon'ble NGT:

Hon'ble National Green Tribunal (NGT) in O.A. 298 of 2023 vide order dated 24.03.2025 directed that '...MoEF & CC and CPCB to file additional responses as to whether any SOP has been formulated regarding installation and dismantling/disposal of asbestos roof sheets/wall sheets and to file copy of the SOP if already framed and to formulate such SOP if not already framed...'. Further, Hon'ble NGT vide order dated 30.10.2025 directed that:

"..... "

VI. Such Periodical assessment of condition of asbestos cement roofing sheets and

othe asbestos-containing materials should be made by schools/CPCBs/PCCs through qualified professionals only.

XIV. CPCB, SPCBs/PCCs in the States and UTs should evolve special mechanism for monitoring disposal of asbestos wastes as per environmental norms and stipulations

XVI. Prepare, finalize and issue SOP for the concerned authorities and industry so as to ensure proper disposal of cement-asbestos waste at authorized disposal sites under HOWM Rules 2016 and prevent re-entrainment into air matrix on degradation.

XVII. Issue appropriate guidelines regarding manufacturing, installation, maintenance, dismantling and disposal of asbestos roof sheets/wall sheets and other materials in which asbestos has been used like water supply pipelines etc., for mitigating negative impacts of asbestos roof sheets/wall sheets other asbestos contained material.

124. *The decisions so taken, policy framed and an action plan, guidelines, SoP prepared may be circulated to all concerned Ministries of Union of India, Chief Secretaries and Member Secretaries of SPCBs/PCCs of the States/UTs for strict compliance in all the States/UTs of India."*

4.0 Scope of the SOP

The guiding Standard Operating Procedure (SOP) shall apply to damaged or discarded asbestos cement roof sheets, asbestos wall sheets, asbestos cement pressure pipes, building pipes, and pipes intended for sewerage and drainage, generated from domestic, institutional (including educational), commercial and Water Supply and Sanitation Sectors. The guidelines for the management of such waste, including its generation, segregation, handling, storage, transportation and disposal is provided in provisions specified in Section 6.5, 6.7, 6.8 and 7.0 of this SOP.

5.0 Asbestos containing waste:

The list of processes generating hazardous waste has been specified in Schedule I of the Hazardous and Other Wastes (Management and Transboundary Movement) [H&OW(M&TM)] Rules 2016. As per S.no. 15 of the list "The Production of asbestos or asbestos containing materials generates :

- Asbestos-containing residues
- Discarded asbestos
- Dust or particulates from exhaust gas treatment"

Further, waste having equal to or more than the concentration limits of 10000 mg/ kg of asbestos as a constituent is classified as hazardous waste as per Class B of Schedule II of H&OW(M&TM) Rules 2016 (the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state). Schedule VI of the above Rules prohibit the import of "waste asbestos (dusts and fibers)".

This classification of asbestos containing waste as hazardous waste mandates the implementation of the provision for the safe handling, storage, treatment, and disposal of all forms of asbestos waste generated within the country as per H&OW(M&TM) Rules 2016, including waste arising from the dismantling of asbestos cement roof sheets, asbestos cement wall sheets and asbestos cement pipes. The H&OW(M&TM) Rules 2016 require that all asbestos containing waste be handled and managed in an environmentally sound manner.

Further, Schedule XIV of the Model Rules under the Factories Act, 1948, provides detailed and specific guidelines on safety and health measures that must be implemented for the handling and processing of asbestos within industrial settings. While the primary focus of these rules is on occupational safety within factories and manufacturing plants where asbestos is used, the fundamental safety principles outlined, such as the provision of exhaust ventilation, the control of dust emissions, and the mandatory use of personal protective equipment (PPE) by workers, are also highly relevant to the safe installation and dismantling of asbestos roof and asbestos wall sheets, particularly in industrial or commercial buildings. The Ministry of Labour vide

notification S.O. 3422 (E) dated 4.11.2023 has prescribed 0.1 fibre/cc of asbestos as the limit for work environment.

6.0 Precautionary Provisions/Measures to be taken at various stages

6.1 Handling and Storage of Asbestos Cement Sheets at Site

- i. When manual unloading is done, the pieces shall be lifted individually rather than sliding against abrasive surfaces that might release unnecessary fibres due to friction.
- ii. Wherever asbestos cement sheets are being handled in large quantities, mechanical handling equipment shall be used, where practicable.
- iii. All asbestos cement pipes shall be protected from damage while stored on site. They shall be carefully stacked in sheltered positions as near as possible to the parts of the building on which they will be fixed.
- iv. Sheets shall be stacked to a height of not more than one metre on firm and level ground, with timber or other packing beneath them.
- v. Individual sheets when moved manually shall be placed with care on the stack or other resting site.
- vi. Dropping and dragging of asbestos cement sheets shall be avoided.
- vii. Storage of all asbestos cement sheets on site shall be made within a designated area which shall always be maintained clean.
- viii. Damaged and crushed pieces shall be suitably disposed of in accordance with the responsibility assigned in the SOP.

6.2 During Construction/ Erection work of Asbestos Cement Sheets

- i. Asbestos cement sheets shall, where practicable, be delivered to the site ready for use and shall need no further processing which may generate dust.
- ii. All cutting or drilling operations, where unavoidable, shall be carried out using wet methods or low-speed tools. Dry cutting should be avoided.
- iii. When high speed tools are used, they shall be fitted with efficient dust extraction equipment designed for the purpose.
- iv. Abrasive or masonry discs shall not be used for cutting asbestos cement material.
- v. Sheets to be fixed in an overhead position shall be drilled, trimmed or rasped before they are in place. Where it is necessary to work on sheets in an overhead position and where dust is likely to reach the respiratory zone, a respirator shall be worn. However, such operations shall generally be avoided with proper planning.
- vi. Sheeting operations should be suspended at times of high winds.
- vii. Waste material shall not be allowed to accumulate on the floor. All working areas should be kept clean by regular use of vacuum cleaner. Where vacuum cleaning is not practicable, the waste material shall be thoroughly wetted before removal.
- viii. Broken pieces and off-cuts of asbestos cement material shall be collected and disposed of in a manner which does not generate dust.
- ix. Loose swarf (filings) and dust collected from fabrication processes shall be wetted, where practicable, and placed in sealed impermeable bags and disposed of in accordance with the responsibility assigned.

6.3 Protective Painting

To prevent the weathering and subsequent release of airborne asbestos fibers, all installed asbestos-cement sheets shall be treated with a waterproof paint. Under no circumstances shall the surface be sanded, wire-brushed, or dry-scraped prior to painting.

6.4 Handling, Storage, Laying and Jointing of Asbestos Cement Pipes at Site

- i. Under no circumstances shall the pipes be thrown down from the carriers or be dragged or rolled along hard surfaces.
- ii. Pipes shall be stored on firm level and clean ground, with wedges provided at the bottom layer to keep the stack stable.
- iii. Pipe stacks should be formed in a pyramid shape or laid lengthwise and crosswise in alternate layers, and the height of the stack shall not exceed 1.5 meters.
- iv. Cast iron detachable joints and fittings shall be stacked under cover and separated from the asbestos cement pipes.
- v. The pipes shall be lowered into the trenches either by hand passing or by means of two ropes.
- vi. The pipes shall rest continuously on the bottom of the trench. The pipes shall not rest on lumps of earth or on the joints.
- vii. Before commencing jointing, the pipes shall be cleaned, the joints and the ends of the pipe shall be cleaned, preferably with a hard wire brush to remove loose particles.

6.5 Identification and Isolation of Waste Disposal of the Asbestos Containing Waste

- i. All asbestos waste awaiting disposal shall be adequately identified by markings on the receptacles or by other means.
- ii. Off-cuts, broken pieces and rejects of asbestos cement sheets and pipes shall be stored in such a manner as to ensure that it will not be abraded or crushed while awaiting disposal.
- iii. Collecting containers for asbestos waste shall be leak-proof/impermeable.
- iv. Water-soluble bags shall never be used for the disposal of asbestos-containing materials, as they can break down when exposed to moisture, increasing the risk of leakage and contamination before proper disposal.
- v. Asbestos waste awaiting disposal shall be stored in such a way that it is not liable to damage, likely to cause spillage.
- vi. Asbestos waste shall not be mixed with other waste for which there are no special disposal requirements. Where practicable, a special area should be set aside for its storage.

6.6 Personal Protection and Hygiene

- i. Workers employed in collection, transport or disposal of asbestos waste who may be at risk of exposure to airborne asbestos, shall be provided with suitable protective clothing and respiratory equipment.
- ii. Where vehicles and reusable receptacles and covers have been in contact with asbestos waste, they shall be cleaned after use by means of a vacuum cleaner or by an alternative dustless method.

6.7 Transport of Asbestos containing Waste

- i. Asbestos waste, whether loose or in sealed containers, shall be transported to the disposal point in such a way that no asbestos dust is emitted into air during transport.
- ii. In the event of accidental spillage during transport, to the disposal site, action appropriate to the extent of spillage as given below in para 6.7 (iii) to 6.7 (v) shall be taken immediately.
- iii. Where the amount of spilled material is small, the spillage shall be collected into its original receptacle and reloaded without delay.
- iv. If the spillage is substantial and the material is dusty, it shall be wetted, if practicable, and covered immediately. This material shall be subsequently removed at the earliest opportunity and during removal appropriate safety precautions, which may include the use of protective clothing and respiratory equipment, shall be taken,
- v. Actions to be taken in the event of accidental spillage shall be made known to the drivers of vehicles carrying asbestos waste in writing and also to be carried in the vehicle so that in the event of accident making the driver incapable of action, the rescue or fire brigade team will know about the actions to be taken.

6.8 Disposal of Asbestos containing Waste

- i. Before disposal, it must be ensured that the asbestos waste is sent only to an authorized Common Hazardous Waste Treatment, Storage, and Disposal Facility (CHWTSDF) or a dedicated hazardous waste secured landfill authorized by the SPCB/PCC. The facility must be specifically designed to handle hazardous waste, complete with impermeable liners, leachate drainage systems, and environmental monitoring to prevent contamination.
- ii. The chosen CHWTSDF shall have proper vehicular access to the working face of the secured landfill. Vehicles transporting the waste to the working face must remain properly covered and leak-proof to prevent any dust emissions during transit and unloading.
- iii. Where the waste has to be unloaded from above the working face or into an excavation, extreme care shall be taken to prevent the rupture of specialized leak-proof/impermeable bags or sealed containers, thereby preventing spillage and airborne fibre release.
- iv. Once disposed of and compacted, the asbestos waste shall be covered with a daily soil cover of at least 100 mm thickness as soon as possible at the end of each day's operation.
- v. Under no circumstances shall any asbestos waste be left uncovered at the end of a working day, preventing the risk of fibres becoming airborne.
- vi. The final covering (capping) of the secured landfill cell containing asbestos waste shall not merely be a depth of soil, but must conform to standard engineered closure requirements. This includes a composite capping system comprising compacted clay layers, synthetic liners (like HDPE), drainage media, and top vegetative soil to ensure permanent isolation as per CPCB guidelines, "Criteria for Hazardous Waste Landfills"

7.0 Responsibility of the Stakeholders (Manufacturer, Consumer, Authorised

Agency, Local/ Development authorities, SPCBs/PCCs/State Government and TSDFs)

S.no.	Agency/ Stakeholder	Responsibility
1	Manufacturer/Dealer/Retailer	i. The symbol 'a' as portrayed in Fig. 1 (except the precautionary notice) shall be printed/stamped on the article very conspicuously, to caution the users that the product 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. ii. The manufacturer, dealer, or retailer shall provide the precautionary advisory given below at Section 8.0 to the purchaser. iii. Any other function assigned by MoEF& CC/ CPCB/SPCB/PCC from time to time.
2	Consumer/User/ Buyer (Asbestos containing waste Generator)	i. Periodical assessment of condition of asbestos cement sheets and pipes shall be made through practicing civil engineer upon the completion of the service life, or whenever wear and tear or physical damage is observed. ii. Segregate and store the asbestos waste generated by them and handover segregated wastes to authorized agency as per the direction or notification by the local authorities/ SPCB/PCC from time to time. iii. Any other function assigned by MoEF& CC/ CPCB/SPCB/PCC/ Local bodies/ Development Authority from time to time.
3	Authorised Agency	i. Agency shall be authorised by the local authority either for collection or transportation or both of construction and demolition

		waste. Agency shall obtain authorization from the State Pollution Control Board or the Pollution Control Committee concerned. ii. Shall collect and transport the damaged asbestos containing waste to intermediate waste storage facility in accordance with the CPCB Guidelines for Transportation of Hazardous Wastes. iii. Any other function assigned by MoEF& CC/ CPCB/SPCB/PCC/ Local bodies/ Development Authority from time to time.
4	Local or Development Authority (Municipality, Panchayat, Cantonment Board, and notified area committee)	i. Setting up collection points to facilitate waste collection from the source and collect the charges for the same. ii. Establishment of intermediate waste storage facility, in their jurisdiction or cluster or regional basis. The intermediate waste storage facilities shall obtain authorization from the State Pollution Control Board or the Pollution Control Committee concerned. iii. Ensure safe storage and transportation of the asbestos waste to the hazardous waste disposal facility or as may be directed by the State Pollution Control Board or the Pollution Control Committee. iv. Shall remain legally responsible for environmentally sound management of asbestos waste till its final disposal at authorized TSDF. v. Create public awareness through information, education and communication campaign and educate the waste generators on the practice segregation of

		asbestos waste at source. vi. Any other function assigned by MoEF& CC/ CPCB/SPCB/PCC from time to time.
5	State Government	i. Identification of site(s) for common Hazardous and Other Waste Treatment Storage and Disposal Facility (TSDF) ii. Assess Environment Impact Assessment (EIA) reports and convey the decision of approval of site or otherwise Acquire the site or inform operator of facility or occupier or association of occupiers to acquire the site iii. Notification of sites.
6	SPCBs/PCCs	i. May give directions to local bodies for safe handling and disposal of asbestos containing waste at intermediate waste storage facilities. ii. Inventorisation of asbestos containing waste. iii. Action against violation of this SOP. iv. Any other function assigned by MoEF& CC/ CPCB from time to time.
7	Treatment, Storage, and Disposal Facilities (TSDFs)	i. Shall ensure that the asbestos containing waste shall be packed, transported and disposed in accordance with the SOP issued by the Central Pollution Control Board. ii. Submit details of asbestos containing waste received and disposed to SPCB annually in Form 4 of H&OW (M&TM) Rules 2016.



Note : White lettering on black background. The word “WARNING” shall be in red colour.

Fig. 1 : Pictorial Warning Sign for Products containing Asbestos

Source : IS 12081 (Part 2): 1987 (Reaffirmed 2022)

8.0 Template for Precautionary Advisory/ Mandatory Disclosure Sheet

The template for Precautionary Advisory/ Mandatory Disclosure Sheet covering following information are required to be published by the manufacturer and shall be referred to for safety in the use of asbestos cement product :

1. Description of the product (Type, Shape, Size and Use)
2. Name and address of the manufacturer of the product
3. Percent of Asbestos present in the product
4. Date of Manufacturing
5. Service Life (in years)
6. Health hazards that might arise from inhalation of asbestos dust
7. Pictorial warning sign for Products containing Asbestos with caution to the users that “the product 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”
8. Precautionary information regarding handling of the product
9. Preventive Maintenance Measures
10. Procedures for cleaning and safe disposal of asbestos containing waste
11. The advisory shall be printed in English and local language of the State where product is sold.
Note : Damaged asbestos waste shall be handled and disposed as per provisions given in Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016 and as amended from time to time.

9.0 The State Pollution Control Boards/ Pollution Control Committees, may further prepare concerned State specific action plan taking into consideration the present/

above-said SOP/guidelines , the local production and consumption of asbestos containing materials.

10. 0 References :

1. Construction and Demolition Waste Management Rules, 2025 and as amended from time to time
2. Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 and as amended from time to time
3. IS 11769 (Part 1) 1987 (Reaffirmed 2022) : Guidelines for Safe use of Products containing Asbestos
4. IS 3007 (Part 1): 1999 (Reaffirmed 2019) Laying of Asbestos Cement Sheets
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Code of Practice
5. IS 12081 (Part 2): 1987 (Reaffirmed 2022) Recommendations for Pictorial warning signs and Precautionary notices for asbestos and products containing asbestos
6. IS 11768:1986 (Reaffirmed 2020) Recommendations for Disposal of Asbestos Waste Material
7. IS 6530:1972 (Reaffirmed 2022) Code of practice for laying of asbestos cement pressure pipes
8. Ministry of Labour notification S.O. 3422 (E) dated 4.11.2023
9. Model Rules under The Factories Act, 1948 (corrected up To 15-12-2020), Directorate General Factory Advice Service And Labour Institutes .
