ASBESTOS HANDLING AND DISPOSAL GUIDELINES

International Best Practice

INTRODUCTION

Defining asbestos waste

Any asbestos product or material that is ready for disposal can be defined as asbestos waste. This may also include contaminated building materials, tools that cannot be decontaminated, Personal Protective Equipment (PPE) and damp rags used for cleaning. If there is a doubt regarding asbestos waste, all waste should be treated as hazardous. Officially, asbestos waste is classified as hazardous when it contains more than 0.1 per cent asbestos fibre per cubic centimetre (0.1f/cm3). However, asbestos waste should not be mixed with other waste to get the level of contamination below 0.1 per cent. The control limit is not a 'safe' level and exposure from work activities involving asbestos must be reduced to as far below the control limit as possible.

Should existing asbestos containing materials be in good condition or not likely to be damaged, they may be left in place. For example, in situations in Beirut where domestic or industrial buildings with Asbestos Containing Materials (ACMs) which are structurally sound and do not require demolition. In this case, the condition of the asbestos materials should be monitored and managed to ensure they are not disturbed. Should subsequent work be required on these buildings a risk assessment should be undertaken and control measures implemented.

Duty of Care

Organisations arranging, undertaking or funding debris clean-up which has a risk of asbestos waste exposure have a duty of care to ensure workers are not exposed to asbestos fibres as a result of this work. Appropriate levels of training and awareness should be provided for everyone coming into contact with, or potentially exposed to, asbestos fibres.

2. IN-SITU ASBESTOS MANAGEMENT

2.1. Waste Management Plan

The key to adequate and safe asbestos disposal is the use of a Waste Management Plan (WMP). This plan can be a simple document which describes the steps that everyone involved in the management and disposal of asbestos or materials which have been contaminated with asbestos fibres follow. The document should define who will be responsible for each stage of the collection, transportation, storage and disposal of materials and the standards to which they will work.

2.2. Temporary in-situ storage

Asbestos waste that has been segregated, or waste which is too contaminated to be segregated and therefore must be classified as asbestos waste, should be stored separately in secure, covered, labelled, containers until transportation to an appropriate site takes place. It is recommended that appropriate containers or skips are used to store known asbestos waste as these are the easiest to transfer to transport vehicles without exposing contaminated materials. These should be labelled correctly and covered to prevent access to contained materials or asbestos fibre release and should be locked when not in use to restrict access.

Should large containers or skips not be available, then asbestos waste should be double-bagged and stored safely until transport can be arranged. The following provides guidance on how this can be undertaken:

- Waste must be packed in UN-approved packaging[1] with a hazard label and asbestos code information visible;
- Double-wrap and label asbestos waste. Standard practice is to use a red inner bag with asbestos warnings, and a clear outer bag with the CDG (Carriage of Dangerous Goods) label, if required;
- Avoid breaking up large pieces of asbestos waste. Instead, double wrap in suitable polythene sheeting (1000-gauge) and label accordingly.

Figure 1: example plastic bag/ sheeting warning label

Figure 2: example asbestos open storage warning sign

In situations where the volume of asbestos or asbestos contaminated materials are too large for temporary in-situ storage, it may be feasible to store these materials as waste piles in a dedicated, secured location. However, in this case the surface should be covered in large tarpaulins (medium, minimum 80 gsm) or similar to minimise wind dispersion. Periodic downwind air monitoring may be necessary to confirm the absence of fibre release.

Warning signs should be placed around any asbestos waste sites at all location at which the general public could access the site.

Note: the aim of these temporary storage arrangements is to reduce, as far as is reasonably practical, the likelihood of people coming into direct contact with asbestos materials, or asbestos fibres becoming airborne, presenting the risk of fibre inhalation. Any temporary storage should therefore aim to eliminate, as far as possible, any opportunity for asbestos fibre release into the air.

[1] UN Class 9, UN2212 (Amphibole) or UN2590 (Chrysotile)

3. TRANSPORTING ASBESTOS WASTE

Figure 3: example vehicle sign: transporting hazardous material

Where possible, asbestos waste should be transported by carriers with a waste carrier licence. When not possible, asbestos waste should be transported in conformity with government regulation[2], using a sealed skip or a vehicle with the following:

- segregated compartment for asbestos;
- easily cleanable; and
- lockable.

If sealed skip transportation is not available, the following should be applied before and during transportation:

- Dampen all waste to be moved and continue to maintain a level of dampening throughout the process of disturbing the hazardous waste;
- Ensure everyone working with or near the waste is using appropriate PPE;
- Once waste is deposited in the transportation vehicles, cover the waste securely with 1000-gauge polythene sheet or minimum 80 gsm tarpaulin;

Once the waste has been transported to its final disposal site, the above should be applied when offloading vehicles, with waste being re-dampened to contain airborne fibres, PPE worn by all operatives and non-operatives kept well away from the site.

A Waste Consignment Note should be completed for each load of waste transported, copies of which should be kept on file for three years.

4. FINAL DISPOSAL OF ASBESTOS WASTE

Asbestos waste is classed as hazardous waste for the purposes of final disposal. Asbestos contaminated waste should be disposed of in a licensed disposal site wherever possible, in line with government regulation[3].

Asbestos waste can be disposed of in appropriate landfill facilities designated as non-hazardous, for example a construction and demolition (C&D) waste facility. In this case, asbestos waste should only be disposed of in cells that are specifically dedicated for the disposal of asbestos waste. Any interaction between asbestos waste and biodegradable waste should be prevented. Any cells used to dispose of asbestos waste must have clear signs at all access points as, once capped with earth, contents will not be clear.

[2] HW Decree 5606, 2019, including Article 19 to 22

[3] HW Decree 5606, 2019, including Article 29

An alternative would be to use a dedicated C&D waste landfill facility for disposal of debris waste contaminated with asbestos. This facility would need to be designated as an asbestos landfill, with the requisite asbestos waste signage and restricted access, and would need to meet the requirements of government regulations, including Decree 5606, 2019.

There is no specific guidance on which materials the operators of landfills must use to cover asbestos wastes (landfill capping), only that 'appropriate material' should be used. The main requirement for material cover for asbestos is that it prevents dispersion of fibres. The type and depth of cover will depend on the surrounding landfill materials, taking into account the weather conditions the site will be subject to and other environmental conditions. Refer to Section 4.1 for guidance on practical landfill site selection.

4.1 High-level guide to hazardous waste landfill site selection

Asbestos and asbestos containing materials should be disposed of in a designated, engineered, hazardous waste landfill facility wherever possible. When this is not achievable, a dedicated C&D waste facility or separate cell in a non-hazardous, sanitary landfill can be used.

Landfill design should comply with The European Union Landfill Directive[4], specifically Annex 1, as well as national standards, including anticipated national standards for landfill facilities.

The following provides an overview of the main requirements when selecting the site for a hazardous waste facility.

1. Site

In collaboration with the local government, locate a site where adequate cover material is available, access is good and controllable and where the waste cannot be exposed by water or wind erosion, slope failure, further disasters or re-excavation.

The location of the facility should be either naturally or should be engineered to prevent any unacceptable discharges to ground and surface water and emissions over the entire life of the facility.

2. Vehicles

Clearly label vehicles transporting asbestos waste and ensure they are operated by trained personnel.

3. Emission protection

During and after the disposal of asbestos waste, make sure no visible emissions occur and cover waste with at least 15cm of compacted non-asbestos-containing material within 24 hours of disposal.

[4] The European Directive 1999/31/EC on landfill of waste

4. Barriers

If no natural barriers exist around the site to deter access, install fencing, trenches or other barriers to prevent unauthorised access to the designated area.

5. Warning signs

Post warning signs at the entrance of the site and around the perimeter or, in the case of cells within a non-hazardous landfill facility, at access points and around relevant cells.

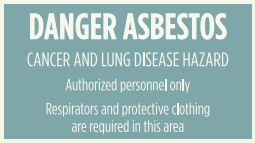

Figure 4: example landfill cell warning sign

6. Closure

Final closure of an area containing asbestos waste requires at least an additional 75cm of compacted non-asbestos material to provide a 1m final cover. This must be done within 90 days of the last deposition.

5. ASBESTOS AWARENESS TRAINING

Training should be made mandatory for anyone working directly with asbestos or ACMs and are therefore liable to be exposed to asbestos fibres, including those involved in building demolition, debris clean-up, transport and disposal. Asbestos awareness training should be designed around the activities to be undertaken and should include:

- The legal position concerning work with and disposal of asbestos waste;
- Procedures people should take to protect themselves;
- What control measures are required;
- What equipment people need to do the job properly;
- How to choose, use and look after personal protective equipment (PPE), including respiratory protective equipment (RPE);
- Decontamination of yourself, work equipment and work areas;
- Waste handling and waste disposal;
- Emergency procedures.

Supervisors of clean-up and disposal work should be trained at an appropriate level to help those at risk of asbestos fibre exposure carry out their work safely.

Those working in asbestos waste clean-up require a lower level of training, based on raising awareness of safe working procedures. Such training should take the form of on-site discussions and could be delivered in a short briefing ahead of work starting. Such training should be repeated periodically for those working with asbestos clean-up over a number of weeks.

Supervisors should monitor worker compliance periodically to ensure adherence to practical rules and prevent slippage over time. New workers should be provided with a briefing prior to starting work.

For additional information, see ‘Asbestos Health and Safety Requirements: Minimum standards for working with debris waste in Beirut’.

6. REFERENCES

1. European Union (EU) Waste Framework Directive 2008/98/EC

2. Health and Safety Executive (HSE) UK: L143 - Managing and Working with Asbestos

3. Health and Safety Executive (HSE) UK: EM9 – Disposal of Asbestos Waste

4. A Brief Guide to Asbestos in Emergencies: Safe Handling and Breaking the Cycle, Proact & Shelter Centre