

Guidance for a National Local Authority Policy and Procedure for the Management of Asbestos

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1. Policy statement

It is policy so far as is reasonably practicable to eliminate the hazards that give rise to safety, health and welfare (SH&W) risks for employees and those who may be affected by their activities, where this is not possible, implement control measures that will manage the hazards and risks, that may arise, so as to prevent injuries at work.

It is policy to protect employees and others who may be affected from or by the hazards and risks associated with asbestos containing materials (ACMs) in the workplace.

2. Purpose

To provide guidance and a series of actions, on how to prevent injury and/or ill-health associated with ACMs and to mandate all employees to demonstrate compliance with all applicable legislation in respect of ACMs.

3. Scope

Applicable to all employees and those who may be affected by ACMs in the workplace and or any property owned by the local authority.

It is now prohibited to use, re-use, sell or supply asbestos or asbestos containing materials or products. However products or materials containing asbestos, which were already installed or in service prior to the prohibition, may remain in place until they are disposed of or reach the end of their service life. There is still potential for exposure to ACMs in a variety of workplaces due to the large quantities of ACM's which were used in the past. They may be present in building premises (insulation materials, architectural finishes, roofing materials and ceiling tiles), water infrastructure, vehicles, plant and equipment, including fixed and mobile sites. Contact may be experienced during times of emergency such as fire and major accidents.

4. Legislation, codes of practice, standards and guidance documents

- 4.1 Safety, Health and Welfare at Work Act, 2005
- 4.2 Safety, Health and Welfare (General Application) Regulation, 2007-2016
- 4.3 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations, 2006
- 4.4 Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations, 2010
- 4.5 Evaluation, Authorisation and Restriction of Chemicals (REACH) EC Regulation No. 552/2009
- 4.6 Safety, Health and Welfare at Work (Construction) Regulations, 2013
- 4.7 Waste Management (Movement of Hazardous Waste) Regulations, 1998
- 4.8 European Communities (Asbestos Waste) Regulations, 1994
- 4.9 European Communities (Control of Water Pollution by Asbestos) Regulations, 1990
- 4.10 Air Pollution Act (Emission Limit Value For Use of Asbestos) Regulations, 1990

- 4.11 Health and Safety Authority Guidance – Practical Guidelines on ACM Management and Abatement 2013
- 4.12 Waste Management Act 1996 (as amended) and associated waste regulations
- 4.13 European Communities (Shipments of Hazardous Waste Exclusively within Ireland) Regulations 2011 [S.I. No. 324 of 2011] (as amended).
- 4.14 Waste Management (Shipments of Waste) Regulations, 2007 [S.I. No. 419 of 2007] (as amended).
- 4.15 Waste Management (Collection Permit) Regulations, 2007 (as amended)
- 4.16 Waste Management (Facility Permit and Registration) Regulations, 2007 (as amended).
- 4.17 Health and Safety Authority Guidance – Carriage of Asbestos and Asbestos Waste by Road.
- 4.18 S.I. No 248/2011 – Chemicals (Asbestos Articles) Regulations 2011.

5. Objectives

- 5.1 Support compliance with legislation
- 5.2 Ensure a safe environment for employees, contractors and those impacted by Local Authority activities
- 5.3 Ensure risk assessment is undertaken for the management of ACMs
- 5.4 Develop asbestos management plan
- 5.5 Develop and maintain an up to date asbestos register (database/ inventory)
- 5.6 Support implementation of management controls to mitigate risk
- 5.7 Provide occupational health surveillance and welfare facilities
- 5.8 Ensure correct disposal of ACMs
- 5.9 Provide appropriate training.

6. Definition

- 6.1 Asbestos is a generic name given to a fibrous variety of six naturally occurring minerals. The three main types of asbestos that have been commercially used are:
 - 6.1.1 Crocidolite (blue)
 - 6.1.2 Amosite (brown)
 - 6.1.3 Chrysotile (white)
- 6.2 Asbestosis is scarring of the lungs
- 6.3 Mesothelioma which is a cancer of the lining around the lungs and stomach

- 6.4 Limit value is that concentration of asbestos fibres in the air at a place of work when measured or calculated by reference to an eight-hour reference period. Currently 0.1 fibres per cubic centimetre of air measured in a person's breathing zone.
- 6.5 Friable ACMs are ACMs which are likely to release significant amounts of airborne fibres if disturbed.

7. Key hazards

- 7.1 The inhalation of asbestos fibres by workers, when ACMs are disturbed and damaged, can cause serious diseases of the lungs, such as asbestosis and mesothelioma, and other organs that may not appear until years after the exposure has occurred

Note: as long as ACMs are in good condition and there is no disturbance or damage to the ACMs, they will not pose a risk to health as fibres will not be released.

8. Roles and responsibilities

The following roles and responsibilities are specific to this policy and procedure and are in addition to the other roles and responsibilities assigned to the post-holder.

- 8.1 Directors of Service/Heads of Function and equivalent grade shall ensure:
- 8.1.1 The objectives specified in section 5 of this policy and procedure is delivered.
- 8.2 Line managers and supervisors shall:
- 8.2.1 Be sufficiently competent to carry out their duties or seek specialist assistance to make a suitable and sufficient assessment of the risks posed by asbestos by identifying the following:
- 8.2.1.1 If ACMs are present in the workplace and or any property owned by the LA e.g. housing stock
- 8.2.1.2 The type of asbestos present
- 8.2.1.3 The condition of the asbestos
- 8.2.1.4 The nature and degree of exposure which may occur during the course of the work
- 8.2.1.5 Results of monitoring (no employee should be exposed to an airborne concentration of asbestos in excess of 0.1 fibres per cm³ of air as an eight hour time weighted average)
- 8.2.1.6 The steps that need to be taken to prevent or minimize exposure and to comply with the legislation
- 8.2.2 Ensure the development of an asbestos register to record all findings of ACMs. This register shall be maintained and reviewed on a regular basis
- 8.2.3 Delegate responsibilities for the management of ACMs to relevant persons in their section and inform them of their responsibilities
- 8.2.4 Arrange appropriate training for relevant persons to be delivered by a suitably competent trainer
- 8.2.5 Disseminate information regarding ACMs to relevant persons, including contractors and occupiers of LA buildings in a timely manner. Information to be provided shall include:
- 8.2.5.1 The risks
- 8.2.5.2 Information contained in the asbestos register
- 8.2.5.3 The need to avoid accidental damage and to take appropriate action if such damage occurs
- 8.2.5.4 Arrangements for dealing with an incident

- 8.2.6 Control contractors working in their section to ensure that they are competent and have sufficient procedures in place to manage ACMs
- 8.2.7 Ensure that relevant personnel and the Health and Safety Authority, if appropriate, are notified prior to work on ACMs (Notification in Appendix 4)
- 8.2.8 Ensure that waste contaminated by/containing asbestos is double bagged, labelled and disposed of at a licensed site and the final disposal certificate is retained and in accordance with the HSA Asbestos Guidelines
- 8.2.9 Ensure the provision of health surveillance as appropriate
- 8.3 Employees shall:
 - 8.3.1 Ensure that they are familiar with and comply with the requirements of this policy and procedure
 - 8.3.2 Not work on ACMs without authorisation and training
 - 8.3.3 Adhere to a safe systems of work
 - 8.3.4 Use PPE and RPE where required
 - 8.3.5 Report any damaged, labelled, suspected ACMs to their Line Manager.
- 8.4 Health and Safety Officer shall:
 - 8.4.1 Coordinate the safety management system
 - 8.4.2 Advise on the implementation of this policy and procedure
 - 8.4.3 Undertake inspections of this policy and procedure
 - 8.4.4 Undertake audits of this policy and procedure.

9. Procedure

Before the commencement of maintenance/construction type work, where the presence of ACMs is suspected, a suitable assessment shall be carried out with regard to the presence of ACMs. If the presence of ACMs is evident, work shall not commence until a suitable plan of work is prepared and implemented. Work involving friable ACMs (those which are likely to release significant amounts of airborne fibres if disturbed) shall be carried out by specialist asbestos contractors. Specialist asbestos contractors may not be needed in the case of asbestos materials that are tightly bound and in good condition. In this case, a strict plan of work must be followed:

- 9.1 Risk Assessment
 - 9.1.1 The asbestos risk assessment process involves identifying analysing, evaluating, controlling and monitoring sources of asbestos within buildings or other installations, see appendix 1 for examples of asbestos containing materials in buildings. The presence of ACMs is considered a hazard, but the level of risk associated with the hazard is related to the propensity of the ACM to release respirable fibres if disturbed. The identification of asbestos doesn't automatically necessitate its immediate removal. ACMs that are in a stable condition, or effectively encapsulated or sealed, and remain in a sound condition while left undisturbed, represents low risk to health.
 - 9.1.2 A material assessment is undertaken each time asbestos surveys of buildings or installations are conducted. See section 6 of the HSA Asbestos Guidelines.
 - 9.1.3 Asbestos Presumption
 - 9.1.3.1 If materials of unknown composition, or materials suspected of containing asbestos are encountered, and are not documented in the existing asbestos register, such materials are to be sampled and treated as ACMs until a sample analysis confirms otherwise.

9.2 Survey

9.2.1 In the event that demolition or refurbishment works are to be carried out in areas previously not inspected for the presence of potential ACMs, such as beneath floors or inaccessible wall cavities, a Refurbishment/Demolition Asbestos Survey (RDAS) and risk assessment must be performed by an appropriately qualified person prior to the commencement of the planned demolition or refurbishment works. An asbestos survey has three main elements; it must as far as reasonably practicable:

- 9.2.1.1 Locate and record the location, extent and type of any presumed or known ACMs
- 9.2.1.2 It must inspect and record information on the accessibility, condition and surface treatment of any presumed or known ACMs
- 9.2.1.3 It should determine and record the type of asbestos, either by collecting representative samples of suspect materials for laboratory identification, or by making a presumption based on the product type and its appearance etc.

9.3 The Asbestos Register

9.3.1 An Asbestos Register shall be established, maintained and kept up to date, see appendix 3 asbestos management flow chart. All ACMs including those that have been sealed or enclosed shall be inspected/monitored at regular intervals to ensure that the condition of the ACMs has not changed. The period between inspections shall depend on the type, location and the condition of the ACMs, in general an annual review is appropriate

9.3.2 It shall contain the specific location, condition and exposure risk of each ACM

9.3.3 The Register should be managed by the line manager responsible for the premises/area or installation

9.3.4 The register should contain the following information:

- 9.3.4.1 Description of building, installation or other
- 9.3.4.2 Date of assessment and name of assessor
- 9.3.4.3 Location of ACMs within the building, installation or other
- 9.3.4.4 Form of material (tiles, pipes, sheeting, etc)
- 9.3.4.5 Asbestos type (based on analysis)
- 9.3.4.6 Present condition of material
- 9.3.4.7 Potential risk (score)
- 9.3.4.8 Modifications to items i.e. sealing etc.

General information, year of construction

9.3.5 The asbestos register should be made available to all employees upon request and made clear by the competent person/line manager/supervisor to any maintenance personnel or contractor, prior to them commencing work on buildings or items of plant containing asbestos. The competent person/line manager/supervisor must advise workers of the asbestos register and if there is asbestos present, or if any other activity may cause exposure to the asbestos.

9.4 Controlling Asbestos Hazards

9.4.1 Control measures shall be implemented based on the level of risk of exposure to ACMs. The control measures shall be aimed at eliminating risk arising from ACMs and preventing exposure to airborne asbestos fibres.

9.4.2 If the ACM is friable, it must be removed or encapsulated by a certified asbestos specialist as soon as practicable.

9.4.3 If the ACM is not friable and is in good stable condition, minimizing disturbance and encapsulation may be appropriate controls.

9.4.4 ACM must:

- 9.4.4.1 Be clearly labelled where appropriate
- 9.4.4.2 Regularly inspected, to ensure it is not deteriorating or otherwise contributing to an unacceptable health risk
- 9.4.4.3 Be noted on drawings or other records and this information kept up to date
- 9.4.4.4 Must be included in the asbestos register
- 9.4.5 ACMs must be removed before demolition, partial demolition, renovation or refurbishment if it is likely to be disturbed by those works.

9.5 Asbestos Removal

- 9.5.1 If the ACM is in poor condition or is likely to be damaged or disturbed the line manager shall decide whether it should be repaired, sealed, enclosed or removed. This decision shall be based on the risk assessment. The risk assessment shall determine whether or not a copy of the plan of work and notification form shall be provided to the Health and Safety Authority not less than 14 days before the commencement of work. See Appendix 4 (Newer version) – notification form to be used for any work involving asbestos. The Asbestos Removal contractor generally submits the plan of work and notification form to the HSA.
- 9.5.2 The removal process poses an increased risk to personnel engaged in the removal. Selection of tools required to be based on the outcome of a risk assessment. Where reasonably practicable, avoid using high-speed abrasive power or pneumatic tools such as angle grinders, sanders, saws, and high-speed drills. Use hand tools in preference to power and pneumatic tools. Asbestos removal work should be performed by asbestos removal specialist with the appropriate waste permit.
- 9.5.3 A plan of work (also referred to as a method statement) as required by Regulation 15 of the Asbestos Regulations, must be developed and complied with for all works which might disturb ACMs. The plan of work must be drawn up in writing before any work commences. The employer whose employees are intended to perform these work activities is responsible for drawing up the plan. Refer to Section 14 of the Health & Safety Authority Guidance- Practical Guidelines on ACM Management and Abatements for guidance on lower risk plans of work and higher risk plans of work.

Work with ACMs can be categorised as Lower Risk Work with ACMs and Higher Risk Work with ACMs. Work with Higher Risk ACMs will generally be completed by specialist contractors whilst work with Lower Risk ACMs e.g. work with Asbestos Cement Water Pipes may be completed by Local Authority staff once the appropriate safe systems of work are in place in accordance with this Procedure and the Health & Safety Authority Practical Guidelines on ACM Management and Abatement.

- 9.5.4 Work procedures (depending on the type of ACM being removed, whether it is bonded or friable), are to ensure that exposure to airborne asbestos fibres is minimized and remain under the exposure limit.

9.6 Encapsulation/Sealing

- 9.6.1 The removal of existing ACMs can itself present the greatest risk of significant exposure to Asbestos Fibres. In some cases it may not be necessary to remove the ACMs and the materials can be protected or encapsulated. These processes require proper management, as control limits may be exceeded. Therefore encapsulation may require a specialist contractor with an understanding of the techniques necessary to carry out the work.

9.7 Enclosure/Isolation

9.7.1 This method involves installing a barrier between the ACM and adjacent areas. This inhibits further mechanical damage to the asbestos and some friable products may be candidates for enclosure if removal is not an option. The type of barrier installed may include plywood or sheet metal constructed as boxing cladding around the ACMs.

9.8 Personal Protective Equipment and Respiratory Protective Equipment

9.8.1 The PPE and RPE requirements for work involving ACMs shall be based on the relevant risk assessment conducted by a suitably qualified person

9.8.2 Protective clothing and equipment is to be worn at all times during work in the asbestos work area, prior to the final clearance inspection

9.8.3 Any PPE worn during asbestos disposal is to be treated as asbestos waste and disposed of in the approved waste bags.

9.9 Air Monitoring, Visual Inspection & Clearance.

9.9.1 For lower risk asbestos work e.g. removal of an Asbestos Cement Pipe from an excavation, a visual inspection post works as a minimum must be carried out by a competent person. A thorough visual inspection is required to confirm that an asbestos works area is safe to be returned to normal use. It is the principal component in determining the successful removal of ACMs. The competent person must self certify via a written statement stating that the area;

- Has been thoroughly cleaned and visually inspected.
- Has no remaining visible traces of dust and debris and is suitable for reoccupation.

9.9.2 For higher risk asbestos work (all notifiable work and some lower risk abatement works) an independent competent analyst will be required in order to provide site clearance certification for reoccupation. The site clearance certification process for notifiable work involves four stages.

- Stage 1; Preliminary check of site condition and job completeness.
- Stage 2; Thorough visual inspection inside the enclosure/work area.
- Stage 3; Clearance air monitoring.
- Stage 4; Final assessment post enclosure/work area dismantling.

9.9.3 The need for air monitoring should be determined as part of the assessment of the works. It may be required for one or more of the following reasons:

9.9.3.1 To confirm that airborne concentrations of asbestos fibres are as low as reasonably practicable and that the correct choice of RPE has been made

9.9.3.2 To confirm that there has been no measurable spread of airborne fibres to areas adjacent to where work with asbestos cement has taken place

9.9.3.3 To confirm that the work area has been adequately cleaned before being returned to normal use.

9.10 Labelling and Signage

9.10.1 Appropriate labelling or signs should be used to avoid inadvertent damage or injury/death. Labelling in public areas can give rise to unnecessary alarm, therefore alternatives to Asbestos labels can be considered, e.g. designating such locations as controlled areas and introducing a permit to work or other similar control scheme to avoid inadvertent damage by maintenance staff or contractors. (and in accordance with the HSA Guidelines)

9.11 Disposal (Refer to Appendix 5 for Specific Guidance on Dealing with Waste Arising from Asbestos Cement Water Pipes)

Asbestos Waste Management

- 9.11.1 Asbestos waste regardless of quantity is subject to strict legislative controls:
- 9.11.2 Asbestos waste should be double bagged in heavy duty polythene bags (1000 gauge) and clearly labelled with the prescribed asbestos label before transportation. Loose asbestos waste shall not be allowed to accumulate within the asbestos work area.
- 9.11.3 Asbestos waste shall be stored in a solid waste drum, bin or container or skip and sealed and secured upon the completion of each day's work, so that unauthorized access is prevented. Storage of waste beyond six months at the site of generation requires waste authorisation.
- 9.11.4 Disposal of asbestos waste comes under the remit of the provisions of the Waste Management Act 1996 (as amended) and waste regulations. Asbestos waste is classified as hazardous waste under waste legislation, and a specific code applies to waste construction materials containing asbestos
- 9.11.5 Asbestos waste can only be disposed of via appropriately authorised operators. Prior to any removal work, an appropriate option for disposal should be identified.
- 9.11.6 The collection/transport of waste by a private entity requires an appropriate Waste Collection Permit, i.e. one that is current and authorises them to collect the type of waste in question in the area in question. [The competent authority is the National Waste Collection Permit Office at www.nwcpo.ie]. A Local Authority does not require a Waste Collection Permit to collect waste [Refer to Section 34 of the Waste Management Acts 1996 (as amended)]. It is important to note that there remains the obligation to ensure the waste is properly contained and managed without endangering human health or harming the environment.
- 9.11.7 Shipments/transfers of hazardous waste within Ireland are subject to the Waste Transfer Form etc. requirements of the European Communities (Shipments of Hazardous Waste Exclusively within Ireland) Regulations 2011 [S.I. No. 324 of 2011] (as amended). The export of waste is subject to the notification etc. requirements of the Waste Management (Shipments of Waste) Regulations, 2007 [S.I. No. 419 of 2007] (as amended). [The competent authority is the National Trans Frontier Shipment Office www.dublincity.ie].
- 9.11.8 There are currently no outlets for final disposal of asbestos waste in Ireland. It will therefore need to be exported directly or via an appropriately authorised waste facility in accordance with the requirements referred to above.

10. Emergency preparedness

- 10.1 In the event of an uncontrolled or accidental release of asbestos or suspected asbestos fibres, the following emergency procedure should be implemented:
 - 10.1.1 Step 1 - Immediately clear all personnel in the vicinity and if in a building, isolate the area by closing and taping (preferably) all doors accessing the room – all tools, equipment and belongings are to be left in the room as

potentially contaminated. Seal or turn off air conditioning or electric fans (additional air movement may help spread airborne fibres)

10.1.2 Step 2 - Secure the area and prohibit access

10.1.3 Step 3 - Immediately inform the Line Manager or nominated 'Responsible Person' who is to arrange for a designated specialist asbestos consultant to access the area using appropriate control measures and determine any further course of action.

10.2 Important– under no circumstances should personnel knowingly remain in, or enter a suspected asbestos contaminated area. In the event of accidental personal contamination, outer clothing should be carefully removed, placed in polythene bags and sealed. The individual should shower at the earliest possible opportunity and advise their employer of the actions taken.

11. Training

11.1 Appropriate training on this policy and procedure shall be provided to all relevant employees

11.2 Appropriate training shall be provided to:

11.2.1 Those supervising works

11.2.2 Those undertaking asbestos surveys

11.2.3 Those working with ACM's.

12. Health surveillance

12.1 Health Assessments

12.1.1 Arrangements should be made to enable an adequate and suitable health assessment by a responsible medical practitioner of the health of every employee exposed to ACMs above the action level. Refer to Regulation 5b of the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 & 2010 and Section 15 of the Health & Safety Authority Guidance – Practical Guidelines on ACM Management and Abatement. Health Surveillance would generally not apply to Local Authority employees that work with Lower Risk ACMs e.g. Removal of Asbestos Cement Pipes in good condition unless the Occupational Exposure Limit has been exceeded. Currently 0.1 fibres per cubic centimetre of air measured in a person's breathing zone. (in accordance with best practice)

12.1.2 An assessment of health shall be made

12.1.2.1 Prior to the exposure to dust arising from asbestos

12.1.2.2 Where exposure or possible exposure (with or without interruption) of an employee continues over a period of time at the place of work, at least once in every period of three years or such shorter period as a responsible medical practitioner may determine

12.1.3 Following a health assessment, the responsible medical practitioner with responsibility for the health surveillance of employees may indicate that health surveillance shall continue after the end of exposure for as long as he or she considers it necessary to safeguard the health of the employee concerned.

12.1.4 Individual medical records must be kept for 40 years after the last assessment recorded, by the Medical Practitioner, in a safe place.

12.2 Occupational Health Register

- 12.2.1 Where activities are carried out in which employees are, or may be exposed in the course of their work, to dust arising from ACMs or a health assessment has been made, it is necessary to keep an occupational health register which contains, in respect of each employee the following information:
- 12.2.1.1 The name and the address of the place of asbestos exposure (premises or site location)
 - 12.2.1.2 A brief description of the work activity involving asbestos including the nature and duration of activity and the exposure to asbestos
 - 12.2.1.3 The name and address of each person to whom either or both air monitoring and a health assessment relates
 - 12.2.1.4 The dates and times of each assessment of the risk of exposure to asbestos and the name of the person who carried out such assessment
 - 12.2.1.5 Details of the nature of each assessment of the risk of exposure to asbestos
 - 12.2.1.6 The dates of and results of examinations and tests on any respiratory protective equipment with sufficient information so as to enable the identification of any particular respiratory protective equipment
 - 12.2.1.7 The dates and results of air monitoring
 - 12.2.1.8 Health assessment
 - 12.2.1.9 Name of the medical practitioner and signature of the person duly making the entry in the register.

Appendix 1 Examples of Asbestos Containing Materials in Buildings (Constructed prior to 2000)

(Listed in approximate order of ease of fibre release)

Asbestos Product	Location/use	Asbestos content and Type/Date last used	Ease of fibre release and product names
Loose Insulation			
Bulk loose fill, bulk fibre filled mattresses, quilts and blankets. Also 'jiffy bag' type products used for sound insulation	Bulk loose fill insulation is now rarely found but may be encountered unexpectedly, e.g. DIY loft insulation and fire-stop packing around cables between floors. Mattresses and quilts used for thermal insulation of industrial boilers were filled with loose asbestos. Paper bags/sacks were also loose filled and use for sound insulation under floors and in walls	Usually pure asbestos except for lining/bag. Mattresses and quilts were usually filled with crocidolite and chrysotile. Acoustic insulation may contain corcidolite or chrysotile.	Loose asbestos may readily become airborne is disturbed. If dry, these materials can give rise to high exposures. Covers may deteriorate or be easily damaged by repair work or accidental contact.
Sprayed Coatings			
Dry applied wet applied and trowelled finish	Thermal and anti-condensation insulation on underside of roofs and sometimes die of industrial buildings and warehouses. Acoustic insulation in theatres halls etc. Fire protection on steel and reinforced concrete beams/columns and on underside of floors. Over spray of target areas is common.	Sprayed coatings usually 55 – 85% asbestos with a Portland cement binder. Crocidolite was the major type until 1962. Mixture of types including crocidolite until mid 1971. Asbestos spray applications were used up to 1974.	The surface hardness, texture and ease of fibre release will vary significantly depending on a number of factors. Sprays have a high potential for fibre release if unsealed, particularly if knocked or the surface is abraded or delaminates from the underlaying surface. Dust released may then accumulate on false ceilings wiring and ventilation systems. 'Limpet' (also used for non-asbestos sprays).

Thermal Insulation

Hand applied, thermal lagging, pipe and boiler lagging, preformed pip sections, slabs, blocks. Also tape, tope corrugated paper, quilts felt and blankets.	Thermal insulation of pipes, boilers, pressure vessels, calorifiers etc.	All types of asbestos have been used. Croidolite used in lagging until 1970. Amosite was phased out by the manufacturers during the 70s. Contents vary 6 – 85%. Various ad-hoc mixtures were hand applied on joints bends and pipe runs. Pre-formed sections were widely used e.g. '85% magnesia' contained 15% Amosite, 'Caposil' Calsium silicate slabs and blocks contained 8 – 30% Amosite while 'Caposite' sections contains ~ 85% Amosite. Blankets, felts and papers were usually ~ 100% chrysotile.	The ease of fibre release often depended on the type of lagging used and the surface treatment. Often will be encapsulated with calico and painted (e.g. PVA, EVA, Latex, bitumen or proprietary polymer emulsions or PVC, Neoprene solutions) e.g. 'Decadex' finish is a proprietary polymer emulsion. A harder chemical/weather resistant finish is known as 'bulldog'.
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Asbestos Boards

Millboard	Millboard was used for general heat insulation and fire protection. Also used for insulation of electrical equipment and plant.	Crocidolite was used in some millboard manufactured between 1896 and 1965; usually chrysotile. Millboard may contain 37 – 97T asbestos, with a matrix of clay and starch.	Asbestos millboard has a high asbestos content and low density so is quite easy to break and the surface is subject to abrasion and wear
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Insulating Board	Used for fire protection, thermal and acoustic insulation, resistance to moisture movement and general building board. Found in service ducts, firebreaks, infill panels, partitions and ceilings (including ceiling tiles), roof underlay, wall lining external canopies and porch linings	Crocidolite used for some boards up to 1965. Amosite up to 1980 when manufacture ceased. Usually 15 – 20% Amosite or a mixture of Amosite and Chrysotile in calcium silicate. Older boards and some Marie boards contain up to 40% asbestos	AIB can be readily broken, given significant fibre release. Also significant surface release is possible by abrasion but surface is usually painted or plastered. Sawing and drilling will also give significant releases. 'Asbestolux', 'Turnasbestos', 'LDR' 'asbestos wall board' 'insulation board'. Marine boards known as 'Marinite' or 'Shipboard'.
Insulation board in cores and linings of composite products	Found in fire doors, cladding infill panels, domestic boiler casings, partition and ceiling panels, oven linings and suspended floor systems. Used for thermal insulation and sometimes as acoustic attenuators.	Crocidolite used for some boards up to 1965, Amosite up to 1980 when manufacture ceased. 16 – 40% Amosite or a mixture of Amosite and Chrysotile.	Can be broken by impacts significant surface release possible by abrasion by usually painted or plastered. Sawing and drilling will also given significant releases.
Paper, Felt and Cardboards			
Paper, Felt and Cardboards	Used for electrical/heat insulation of electrical equipment, wiring and plant. Also used in some air conditioning systems as insulation and acoustic lining. Asbestos paper has also been used to reinforce bitumen and other products and as a facing/lining to flooring products, combustible boards, flame resistant laminate. Corrugated cardboard has been used for duct and pipe insulation	Asbestos paper contacts ~ 100% Chrysotile asbestos but may be incorporated as a lining, facing or reinforcement for other products, e.g. roofing felt and damp-proof courses, steel composite wall cladding and roofing (see asbestos bitumen products below) vinyl flooring. Asbestos paper is also sometimes found in MMMF insulation on steam pipes	Paper materials if not encapsulated/combined within vinyl, bitumen or bonded in some way can easily be damaged and release fibres when subject to abrasion or wear (e.g. worn flooring surface with paper backing). Asbestos paper asbestos felt, Novilon flooring, Durasteel laminates vinyl asbestos file, roofing felt and damp proof course etc. 'Paxfelt', 'Viceroy (foil coated paper)', 'Serval'

Textiles

Ropes and yarns	Used as a lagging on pipes (see above) joining and packing materials and as beat/fire resistant boiler, oven and flue sealing. Caulking in brickwork. Plaited asbestos tubing in electric cable.	Crocidolite and Chrysotile were widely used due to length of flexibility of fibres. Other types of asbestos have occasionally been used in the past Chrysotile alone since at least 1970. Asbestos content approaching 100% unless combined with other fibres.	Weaving reduces fibre release from products but abrading or cutting the materials will release fibres, likely to degrade if exposed, becoming more friable with age. If used with caulking fibres will be encapsulated and less likely to be released.
Cloth	Thermal insulation and lagging (see above) including fire resisting blankets, mattresses and protective curtains, gloves, aprons, overalls etc. Curtains, gloves etc. Were sometime aluminized to reflect heat.	All types of asbestos have been used in the past. Since the mid 1960s the vast majority has been Chrysotile. Asbestos content approaching 100%	Fibres may be released if material is abraded.
Gaskets and Washers	Used in domestic hot water boilers to industrial power and chemical plant	Variable but usually around 90% asbestos, crocidolite used for acid resistance and chrysotile for chloralkali, some gasket materials will continue to be used after asbestos prohibition take effect	May be dry and damage easily when removing. Mainly a problem for maintenance workers. 'Klingerit', 'CAF' – compressed asbestos fibre or 'It' in German gaskets
Strings	Used for sealing hot water radiators	43. Strings have asbestos contents approaching 100%	

Friction Products

Resin Based Materials	Transport, machinery and lifts, used for brakes and clutch plates	44. 30 – 70% Chrysotile asbestos bond in phenolic resins. Used up to 2000	Low friability, dust may build up with friction debris
Drive belts/ conveyor belts	Engines, conveyors	45. Used Chrysotile textiles encapsulated in rubber	Low friability except when work to exposed textiles.

Cement Products

Profiled Sheets	Roofing, wall cladding permanent shuttering, cooling tower elements	10 – 15% asbestos (some flexible boards contain a small proportion of cellulose). Crocidotlie (1950 – 1969) and amosite (1945 – 1980) have been used in the manufacturer of AC products, although Chrysotile (used until 2000) is by far the most common type found	Likely to release increasing levels of fibres is abraded hand sawn or working on with power tools. Exposed surfaces and acid conditions will remove cement matrix concentrate unbound fibres on surfaces and sheet laps. Cleaning A/C roofs may also release fibres, Asbestos cement, Trafford tile, 'Bigsix', 'Doublesix', 'Supersix', 'twin twelve' 'combined sheet', , 'Glen Six' , '3" and 6" corrugated, 'fort', Monad' 'Troughsec', Major tile and Canada tile', panel sheet' 'cavity decking'.
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Semi-compressed flat sheet and partition board	Partitioning in farm buildings and infill panels for housing, shuttering in industrial buildings, decorative panels for facings, bath panels, soffits, linings to walls and ceiling, portable buildings propagation beds in horticulture, domestic structural uses, fire surrounds, composite panels for fire protection, weather boarding	As above. 10 – 15% asbestos. Also 10 – 25% chrysotile and some amosite for asbestos wood used for fire doors etc. Composite panels contained ~ 4% Chrysotile or crocidolite.	Flat building sheets, partition board, 'Polite'
Fully compressed flat sheet used for tiles, slates and board	As above but where a stronger material is required and as cladding, decking and roof slates (e.g. roller skating rinks, laboratory work tops)	As for profiled sheets	A/C roofing slate (e.g.) Eternit, Turners, Speakers), Everite, Turnall, Diamond AC, J M Slate, Glasal, AC, Emalie, Eflex, Colourglaze, Thrutone, Weatherall
Pre-formed moulded products and extruded products	Cables through and conduits, cisterns and tanks, drains and sewer pressure pipes, water pressure pipes, fencing, flue pipes, rainwater goods, roofing components (fascias soffits etc) ventilators and ducts, weather boarding, window sills and boxes, bath panel, draining boards, extraction hoods, copings promenade tiles etc	As for profiles sheets	Everite, Turnall, Promenade tiles
Other materials which contain asbestos in small quantities			
Textured Coatings	Decorative/flexible coatings on walls and ceilings	3 – 5% chrysotile asbestos. Chrysotile added up to 1984 but non-asbestos versions were available from the mid-seventies	Generally fibres are well contained in the matrix bit may be released when old coating is sanded down or scraped off. Artex, Wondertex, Suretex, Newtex, Pebblecoat, Marblecoat

Bitumen products	Roofing felts and shingles, semi rigid asbestos bitumen roofing gutter linings and flashings, bitumen damp roof courses (dpc). Asbestos/bitumen coatings on metal [Car Body Underseals]. Bitumen mastics and adhesives (used for floor tiles and wall coverings)	Chrysotile fibre or asbestos paper (approximately 100% asbestos) in bitumen matrix, usually 8% chrysotile. Use up to 1992. Adhesives may contain up to a few% chrysotile asbestos. Used up to 1992	Fibre release unlikely during normal use. Roofing felts, dpc and bitumen based sealants must not be burnt after removal. See felts and papers.
Flooring	Thermoplastic floor tiles. PVC vinyl floor tiles and unbacked PVC flooring. Asbestos paper backed PCV floors	Up to 25% asbestos. Normally 7% chrysotile. Paper backing approximately 100% chrysotile asbestos. Used up to 1992	Fibre release is unlikely to be a hazard under normal service conditions. Fibre may be released when material is cut and there may be substantial release where flooring residue, particularly when paper backing is power sanded. 'Novilon', Serval asbestos
Reinforced PVC	Panels and cladding	1 – 20% chrysotile asbestos	Fibre release is unlikely
Reinforced plastic and resin composite.	Used for toilet cisterns, seats, banisters, window seals, lab bench tops, brakes and clutches in machines	Plastics usually contain 1 – 10% chrysotile asbestos. Some amphiboles e.g. car batteries resins were reinforced with woven chrysotile cloth; usually contain 20 -50% asbestos	Fibres unlikely to be released, limited emissions during cutting. 'Sindanyo, Siluminite' Ferroasbestos. Minor emissions when braking, most asbestos degrades with friction heat.

Appendix 2

Sample Material Assessment Algorithm

Table 2. 1 Materials Assessment for Asbestos Containing Materials

Sample Variable	Score	Examples of Scores
Product Type (or debris from product)	1	Asbestos reinforced composites (plastic, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement)
	2	Asbestos insulating board, mill boards, other low density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Thermal installation (i.e. pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.
Extent of damage/deterioration	0	Good condition; no visible damage
	1	Low damages: a few scratches or surfaces marks, broken edges of tiles etc.
	2	Medium damage: significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of materials, sprays and thermal insulation; visible asbestos debris.
Surface Treatment	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
	1	Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated) asbestos cement sheet etc.
	2	Unsealed asbestos insulating board, or encapsulated lagging and sprays
	3	Unsealed laggings and sprays

Element: Implementation and Operation	Criterion: Operational Control
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Asbestos Type	1	Chrysotile
	2	Amphibole asbestos excluding crocidolite
	3	Crocidolite
Total Score		

Table 2.2 Priority assessment for Asbestos Containing Materials

Assessment Factor	Score	Examples of Score variable
<u>Normal occupant activity</u> Main type of activity in area	0	Rare disturbance activity (i.e. little used store room)
	1	Low disturbance (i.e. office type activity)
	2	Periodic disturbance (i.e. industrial or vehicular activity which may contact ACMs)
	3	High levels of disturbance (i.e. fire doors with asbestos insulating board sheet in constant use)
	As above	As above
<u>Likelihood of disturbance</u> Location Accessibility Extent/amount		
	0	Outdoors
	1	Large room or well ventilated areas
	2	Room up to 100m ²
	3	Confined Spaces
	0	Usually inaccessible or unlikely to be disturbed
	1	Occasionally likely to be disturbed
	2	Easily disturbed
	3	Routinely disturbed
	0	Small numbers of items (i.e. strings, gaskets)
	1	≤ 10m ² or ≤ 10 m pipe run
	2	≥ 10m ² to ≤ 50 m ² or ≥ 10m to ≤ 50 m pipe run
	3	≥ 50m ² or > 50 m pipe run

Assessment Factor (Table 2.2 continued)	Score	Examples of Score variable
<u>Human exposure potential</u> Number of occupants Frequency of use of area Average time area is in use	0	None
	1	1 to 3
	2	4 to 10
	3	Greater than 10
	0	Infrequent
	1	Monthly
	2	Weekly
	3	Daily
	0	< 1 hour
	1	> 1 and < 3
	2	> 3 and < 6
	3	> 6 hours
<u>Maintenance Activity</u> Type of maintenance activity Frequency of maintenance activity	0	Minor disturbance (i.e. possibility of contact when gaining access)
	1	Low disturbance (i.e. changing light bulbs in asbestos insulating board ceiling)
	2	Medium disturbance (i.e. lifting one or two asbestos insulating board ceiling tiles to replace a valve or for re-cabling)
	3	High levels of disturbance (i.e. removing a number of asbestos insulating board ceiling tiles to replace a valve or for re-cabling)
	0	ACM unlikely to be disturbed for maintenance
	1	≤ 1 per year

Element: Implementation and Operation	Criterion: Operational Control
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	2	> per year
	3	> per month
<u>Total</u>		

The material assessment looks at the type and condition of the ACM and the ease which it will release fibres if disturbed.

The priority assessment looks at the likelihood of someone disturbing the ACM.

Total Material assessment score for each ACM

+

Total Priority assessment score for each ACM

=

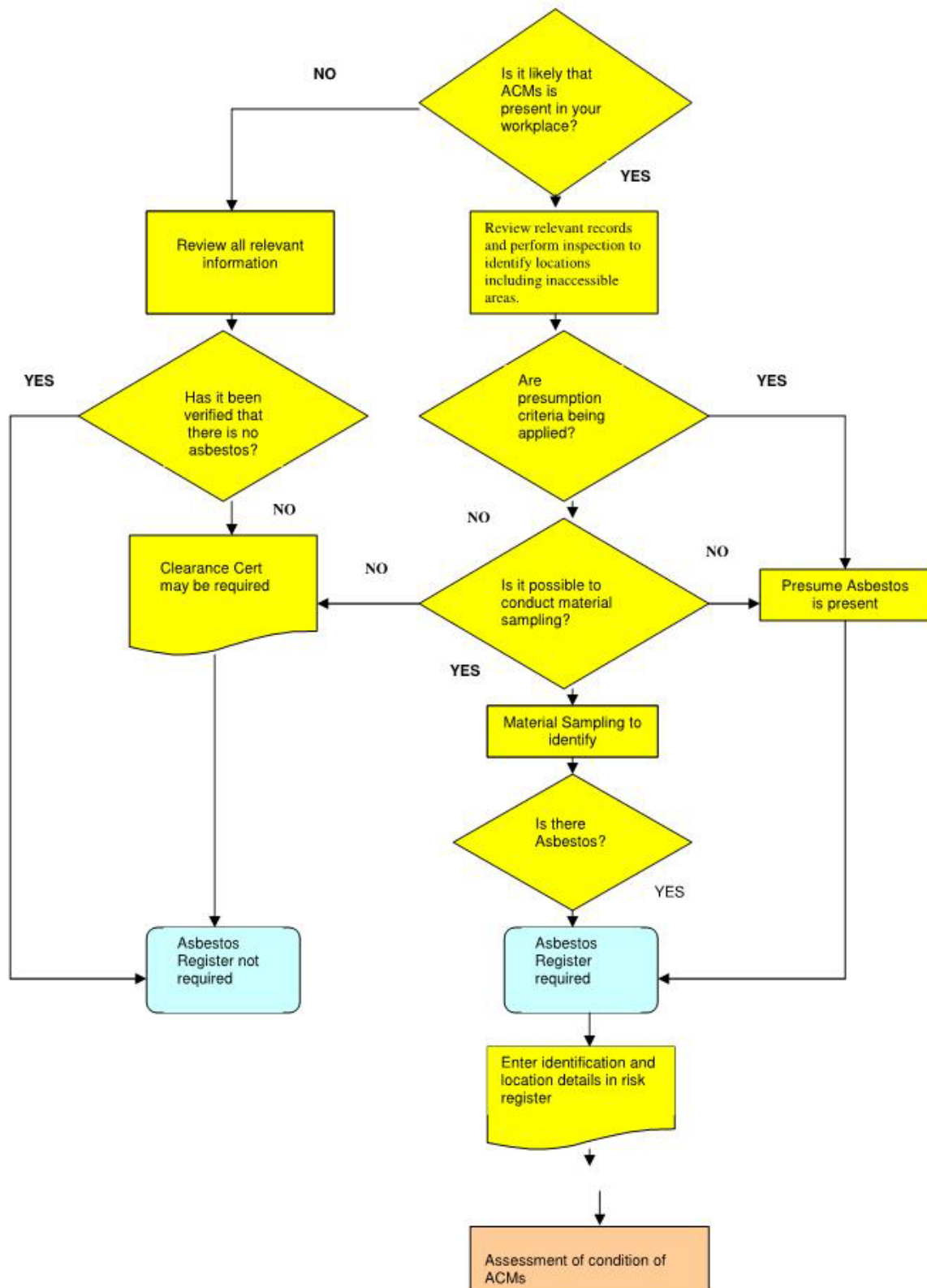
Risk assessment score for each ACM

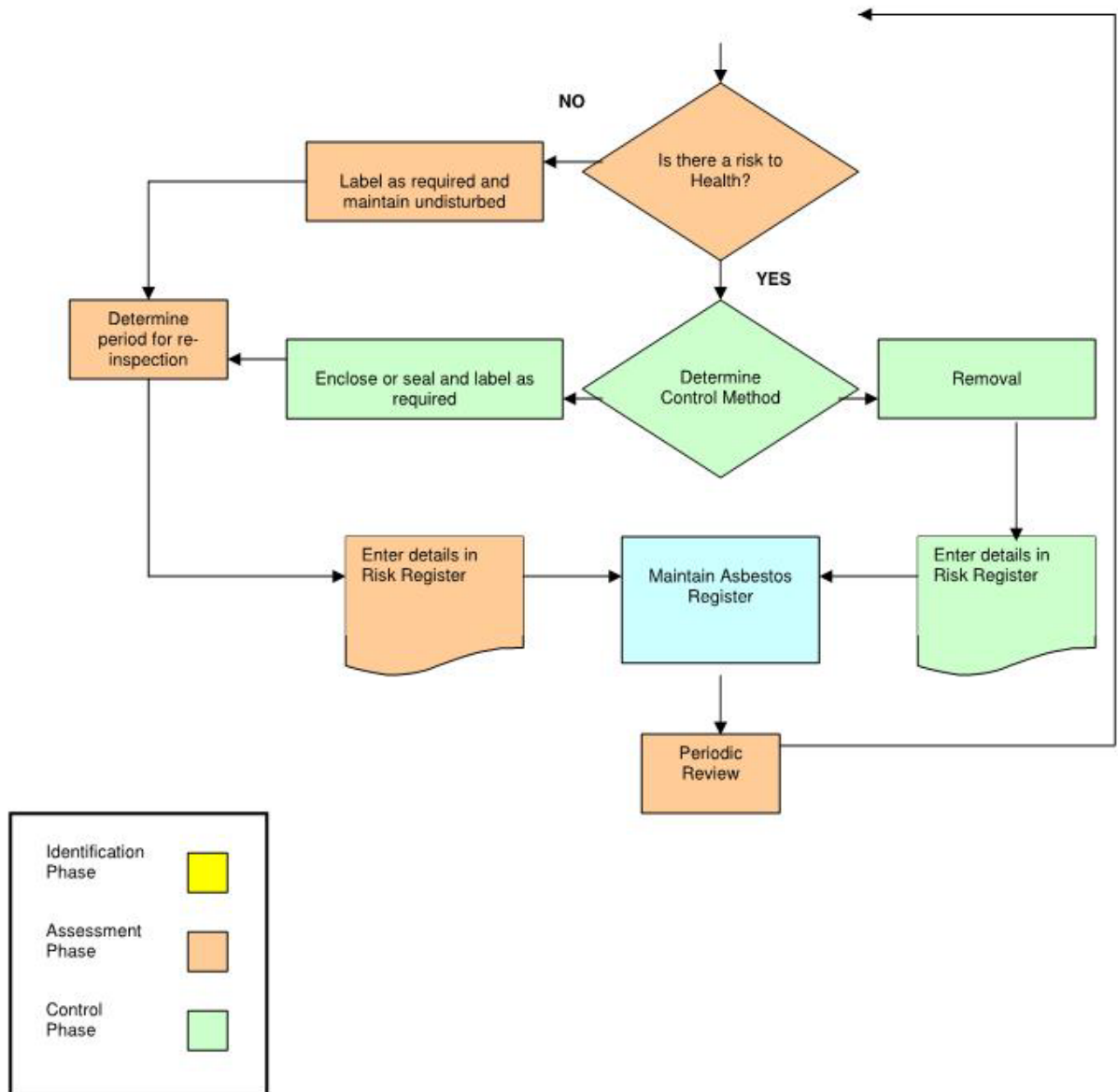
Then rank the risk assessment score

Table 2.3 Combined risk assessment scores and prioritisation for remedial action

Category	Overall Risk Score (combined risk & materials assessment scores)	Levels of Risk	Action
Category A	18+	High risk	Immediate action
Category B	13 – 17	Medium risk	Near term action
Category C	9 – 12	Low risk	Regular inspection
Category D	8 or below	Very low risk	Annual inspection

Appendix 3 Asbestos Management Flow Chart





Appendix 4

Notification Form to be Used for Any Work Involving Asbestos

Note: For ongoing work with Lower Risk Asbestos Cement Pipes, an Annual Notification Form may be adequate. Please contact the Health & Safety Authority to Confirm. (notification to be used)

NOTIFICATION FORM TO BE USED FOR ANY WORK INVOLVING ASBESTOS

(S.I. No. 386 of 2006, Regulation 11 – Notification)(as amended by S.I. 589 of 2010)

Removal, repair or encapsulation of lagging, insulation or other materials containing asbestos i.e. work other than activities meeting the requirements of Reg 5(b) of S.I. No. 386 of 2006).

This form must be submitted 14 days prior to the start of such work to:-

1. Asbestosnotif@hsa.ie or
2. Health & Safety Authority, Occupational Hygiene Unit, The Metropolitan Building, James Joyce Street, Dublin 1

For office use

EMP No:	EPOW No:	Notif No:

For Notifier to complete

Date of Notification:	Click here to enter a date.
Name of Notifier:	Address: (usual place of business)
Telephone:	
Name of Client:	Removal Contractor contact details:
Contact details of Client:	(a) Name of person dealing with removal works: (b) Telephone No. of contact person
Address of Asbestos/Work Site:	
Scheduled Start Date:	Estimated Completion Date:

Click here to enter a date.	Click here to enter a date.
Smoke Test Date: Click here to enter a date.	No. of workers: Choose an item.
Type, form and quantity of asbestos likely to be involved: (e.g. amosite ceiling tiles 30m ² , amosite pipe lagging, 6 linear meters)	
Location(s) of asbestos containing materials at the worksite:	
Asbestos activities or processes involved : (e.g. removal, repair, encapsulation/plant involved etc)	
Dust suppression methods to be used: (e.g. wet stripping, shadow vacuuming)	
Brief description of the manner in which the work is to be done : (A copy of the plan of work , with site drawing, supplied to the client must be submitted with this notification to the Authority)	
Method Statement Attached: Choose an item.	
• Request for waivers must be accompanied by full justification from the client company and a copy of the plan of work. • Where there is a change of a material nature in the carrying out of the activity to which this notification relates, the employer shall inform the Authority of that change in writing and submit a new notification for the purposes of these Regulations advising the Authority in writing of the reasons for this new notification.	

Appendix 5

Guidance on Dealing with Waste Arising from Asbestos Cement Water Pipes

Prior to any work with Asbestos Cement Water Pipes a Safe Plan of Work should be developed and complied with by the Local Authority for all works which might disturb ACMs in accordance with this Policy and Procedure and Section 14 of Health & Safety Authority Practical Guidelines on ACM Management and Abatement.

Replacing underground asbestos cement water pipes

The preferable approach when replacing underground asbestos cement water pipes is to remove the pipes and manage them in accordance with all relevant legislation for hazardous/asbestos waste.

There may be situations where this is not done, e.g. where pipes are replaced using an alternative route or by inserting new pipes through the existing ones. Leaving redundant underground asbestos cement pipes underground is a waste disposal activity.

The EPA will not seek an application for a waste licence in such instances provided that:

a) Any excavated sections or broken pieces of pipe and PPE are removed from the excavation/site and managed in accordance with all relevant legislation for hazardous/asbestos waste;
b) A record, in all relevant paper and electronic formats, of the condition and location of the underground redundant pipes is maintained by the Local Authority and Irish Water and these records are made available to any person likely to work on, or disturb, the pipes at any time;
c) The disposal of any underground redundant pipes is managed as hazardous/asbestos waste when they are exposed by future activity; and
d) The relevant objectives of the Waste Framework Directive are met: ‘...ensuring that waste management is carried out without endangering human health, without harming the environment and in particular: ➤ without risk to water, air, soil, plants or animals; ➤ without causing a nuisance through noise or odours; and ➤ without adversely affecting the countryside or places of special interest.

This position does not affect any other statutory requirements applicable to the way in which the pipes and PPE are handled.

Please refer to the following section of the EPA website in the event of queries in this regard: <http://www.epa.ie/licensing/licques/article11declarations/>

Repairing underground asbestos cement water pipes

Asbestos waste arising from repairs to underground asbestos cement water pipes (e.g. cut sections of pipe and PPE) must be removed from the excavation/site and managed in accordance with all relevant legislation for hazardous/asbestos waste. It must not be reinterred.

Collection, transport, storage and disposal of asbestos waste

Although unlikely to be a practical option in most cases for asbestos cement water pipes, waste can be stored at the site where it is produced for up to 6 months without waste authorisation. It is important to note that there remains the obligation to ensure the waste is properly contained and managed without endangering human health or harming the environment.

Otherwise, the waste must be consigned to an appropriately authorised waste facility. Given the limited number of facilities authorised for asbestos waste, immediate consignment may present logistical difficulties in some circumstances, e.g. unscheduled/emergency repair works outside standard daytime opening hours. Local Authorities could store asbestos waste at a Local Authority depot under a Class 10 Certificate of Registration (subject to the limits therein) and are encouraged to establish a network of such facilities to ensure options are available and to address the logistical difficulties referred to. The limits are that:

- | |
|--|
| 1) The annual intake does not exceed 10,000 tonnes; |
| 2) The maximum amount dispatched onward for disposal does not exceed 1,500 tonnes per annum; |
| 3) Storage of waste for disposal does not exceed 30 days. |

These facilities could also be used to address the storage of other Local Authority wastes such as wastes from roadworks and street cleaning. Details for applying for waste facility authorisation are available at: <http://www.epa.ie/licensing/>. Alternatively, a Local Authority may consign the waste directly to an appropriately authorised private waste facility.

The following apply to the collection and transport:

- | |
|--|
| <ul style="list-style-type: none"> • A Local Authority does not require a Waste Collection Permit to collect waste [Refer to Section 34 of the Waste Management Acts 1996 (as amended)]. It is important to note that there remains the obligation to ensure the waste is properly contained and managed without endangering human health or harming the environment (Refer to the Health & Safety Authority Guidance – Carriage of Asbestos and Asbestos Waste by Road). A private entity must have an appropriate Waste Collection Permit, i.e. one that is current and authorises them to collect the type of waste in question in the area in question. [The competent authority is the National Waste Collection Permit Office at www.nwcpo.ie]. |
| <ul style="list-style-type: none"> • Shipments/transfers of hazardous waste within Ireland are subject to the Waste Transfer Form etc. requirements of the European Communities (Shipments of Hazardous Waste Exclusively within Ireland) Regulations 2011 [S.I. No. 324 of 2011] (as amended). The export of waste is subject to the notification etc. requirements of the Waste Management (Shipments of Waste) Regulations, 2007 [S.I. No. 419 of 2007] (as amended). [The competent authority is the National Trans Frontier Shipment Office www.dubliccity.ie]. |

In this context, the following hazardous waste codes apply to asbestos waste:

- I. 17 06 05* construction materials containing asbestos
- II. 17 06 01* insulation materials containing asbestos
- III. 15 02 02* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances)

In applying the latter to PPE, a note should be included that the relevant contaminant is asbestos.