Asbestos

1. Introduction

The purpose of this Guidance Note is to provide advice to University staff on the potential health hazards presented by exposure to asbestos containing materials (ACMs) and the actions that should be taken to minimise or prevent such exposure occurring. It has been updated to take account of the revised Control of Asbestos Regulations which requires employers and “duty holders” to manage risks arising from ACMs on their premises.

It is aimed principally at those who work in buildings that may contain asbestos or who may come into occasional contact with ACMs during their work in the University.

Estates and Buildings (E&B) are responsible for the management of ACMs in the fabric of University buildings (as well as plant/equipment etc owned/maintained by them) and Management Units/Service Departments are responsible for ACMs that may be present in their equipment.

2. Asbestos Material

Asbestos is a naturally occurring mineral fibre which exists in three main forms. These are commonly known as "blue" (crocidolite), "brown" (amosite) and "white" (chrysotile) asbestos. All are dangerous but blue and brown are known to be more hazardous than white. They cannot be identified by colour alone but require laboratory analysis.

Asbestos fibre is non-combustible and also possesses properties which make it useful for reinforcing cement, plastics and other building materials. It is also a good insulator against heat, sound and electricity. As a result of these properties it has been used in the manufacture of various types of equipment and, very extensively in the construction of buildings. It is sometimes used in its pure form but is also often mixed with other materials to form products with particular properties. Over 3,000 uses of asbestos have been identified. It is not always immediately evident that such materials contain asbestos.

The use of asbestos in building construction has declined rapidly since the early 1970s due both to the increasing legal controls on its use and a greater awareness of the health risks presented by the material. The new use of brown and blue asbestos was banned in 1985 and the use of building materials containing white asbestos in 1999.

3. Health Effects

It has been known for many years that inhaling asbestos fibres causes irreversible lung damage and induces cancers of the chest and lungs. Asbestos related diseases are normally regarded
as incurable. The scientific evidence of exactly what level of exposure causes disease is unclear but what is known is that the more fibres that are breathed in, the greater is the risk to health.

It is important to remember that asbestos will only pose a risk to health if fibres are released into the air.

There is usually a long delay between first exposure to asbestos and the onset of disease. This "latent period" can range from 15 to 60 years and is unpredictable.

However, it is important to remember that the risks from asbestos arise through inhaling airborne fibres. If fibres are not released from the material there is no risk to health. ACMs that are in good condition and are not being damaged or disturbed are unlikely to release fibres. Risks to health can arise where these conditions are not met. Examples of this would typically be in circumstances where the material is in poor condition, has become damaged or is being worked on e.g. sanded, drilled, sawn etc. Although very minor damage is not likely to cause a significant exposure to asbestos fibres, uncontrolled large scale damage can pose a significant risk, particularly where individuals suffer this type of exposure regularly.

4. Asbestos Regulations

Work with asbestos is governed by The Control of Asbestos Regulations 2012 (and associated Approved Codes of Practice) which imposes strict and complex legal requirements on all those carrying out work with asbestos. One of the principle aims of these Regulations is to ensure that ACMs in buildings and fitments (including plant, equipment and appliances) is properly managed so that employees, students, building and maintenance workers and others who may be affected, are not exposed to harmful asbestos fibres when carrying out their everyday duties.

These revised Regulations require employers to prevent exposure of persons to asbestos. If this is not reasonably practicable the law requires their exposure should be controlled to the lowest possible level. The Regulations also include the “duty to manage” ACMs in non-domestic buildings. This includes all buildings, whatever type of business or undertaking is carried out in them. It also covers the common areas of residential rented properties, such as hallways, corridors, stairway enclosures, lift shafts, roof spaces etc.

The duty holder is anyone responsible for maintaining and repairing all or part of a property (or plant, equipment, appliances etc) or who has control of the building e.g. owner, occupier, landlord, managing agents, architects, surveyors etc. Such persons will need to ensure that ACMs within those premises are properly managed and that information about the location and condition of the materials is passed on to those likely to work on them or disturb them.

It is not illegal to have ACMs within a building, however there are legal duties covering general safety. The condition of any ACMs within a building may affect safety and therefore, must not be in a condition that results in (or is likely to result in) airborne contamination. ACMs need to be properly and effectively managed.

Work on asbestos insulation, asbestos coating or asbestos insulation boards may only be carried out by contractors who are licensed by the Health and Safety Executive (HSE) and arrangements for such work must be channelled through Estates and Buildings.

Work on other ACMs in which the asbestos fibres are firmly linked in a matrix such as asbestos cement sheets, floor tiles etc. will not normally require the use of a Licensed Contractor. However, such work can only be carried out following a suitable and sufficient risk assessment which demonstrates that the control limits will not be exceeded. The work must be carried out by trained workers in accordance with a method statement to prevent exposure and spread of asbestos.
Anyone intending to carry out work with such materials must first consult Estates and Buildings or the Safety and Environmental Protection Service (SEPS) for advice on how these legal obligations may be met.

In addition, The Construction (Design and Management) Regulations 2015 require anyone engaging a contractor to carry out building maintenance or construction work to ensure that the contractor is provided with adequate information about risks that they may expect to encounter during the work. This would include information about the likelihood of encountering asbestos. To ensure that this requirement is properly addressed, all such contracts should be placed in consultation with Estates and Buildings who are familiar with these requirements.

In this regard, Management Units/Service Departments are reminded that under the University’s Financial Regulations, work that involves disturbance to the fabric or services of a building must not be carried out without prior discussion/authorisation with/by Estates and Buildings.

University personnel are not permitted to work with asbestos (this includes the taking of samples).

5. ACMs in University Buildings

Many of the University’s buildings date from an era when the use of asbestos was common and, as a result, ACMs have been used in one form or another in the construction and fitments of some University buildings.

It is impossible to give a definitive list of all locations where ACMs might be found in the University. Estates and Buildings are responsible for maintaining an Asbestos Register of all known locations of ACMs within the fabric of the University buildings (including plant and equipment owned or maintained by them). This Register is based on an Asbestos Management Survey carried out by specialist surveyors. Unless there is clearly no risk of disturbing ACMs the Asbestos Register should always be consulted before work, however minor, is carried out.

It should not be assumed however, that there are no ACMs present in the area just because there is no mention in the Register as unknown locations will remain where its presence is concealed within the building structure and would only be revealed by dismantling of parts of the building. The possibility of unexpectedly encountering asbestos when carrying out any work on the fabric of a building must always be kept in mind.

Management Units/Service Departments should notify E&B where they suspect that hitherto unknown ACMs have been found. See Section 10 for further advice.

See Appendix 1 for “Typical Locations of ACMs within Buildings and their Usage”.

6. ACMs in Equipment/Appliances

ACMs may also be present in older laboratory equipment, and in old ovens, furnaces, autoclaves etc and as heat resistant mats. Workshop staff are most likely to encounter ACMs when carrying out repairs, maintenance etc and should be trained to recognise the presence of ACMs (or suspected presence) and stop work immediately.

Management Units/Service Departments should make similar arrangements through a competent Responsible Person, to carry out a “management survey” to identify, record and manage ACMs in equipment/appliances etc which are owned/operated/maintained by them in which the presence of ACMs are suspected. The register of the location of equipment containing ACMs should be kept up to date following disposal etc.

ACMs that are in poor condition can only be repaired by a Licensed Asbestos Contractor, or the equipment is disposed of intact as waste. See Section 12 for further advice.
Only trained and competent persons such as a Licensed Asbestos Removal Contractor or a United Kingdom Accreditation Service (UKAS) accredited laboratory are permitted to take samples.

7. **Labelling of ACMs**

Where ACMs have been identified and assessed as satisfactory to leave in place i.e. they are in good condition, they are sealed or encapsulated and the release of fibres into the air is unlikely, it is necessary to inform persons who may potentially disturb the ACMs of their presence.

Not only E&B maintenance staff and authorised contractors working on the fabric of our buildings need to be alerted to the presence of ACMs, but in some occasions the actual users of the building also need to be alerted to its presence particularly those who need to work in close proximity to the ACMs and the potential for damage exists.

E&B are responsible for the labelling of ACMs within the fabric of the building whilst Management Units/Service Departments are responsible for identifying and labelling of ACMs in their equipment/appliances.

There may be circumstances e.g. aesthetic considerations or where it is judged that such labelling may make such labelling inappropriate. In these situations, an alternative form of identification may be suitable. In such cases, the advice of SEPS should be sought.

8. **Causes of Accidental Damage or Disturbance of ACMs**

Although demolition work, construction work, refurbishment work, routine repair and maintenance work create the most obvious risks of damage, virtually any task that involves work on the fabric of the building can potentially lead to disturbance of asbestos containing materials. In particular, whenever any drilling, sawing, cutting or breaking-up of unknown materials is to be carried out care should be taken to ensure that these do not contain asbestos.

Some examples of other work which can cause disturbance of ACMs include installation work such as computer and telephone cables, fire alarms, window blinds, shelving, and maintenance and repair of certain older types of electrical equipment etc. Careless movement of goods and equipment can also cause physical damage to asbestos containing building materials.

If you are in any doubt about whether any particular part of building fabric contains asbestos seek advice from E&B before disturbing it.

9. **Planned Work on the Building Fabric**

Work on a building that was built or refurbished before the year 2000 could lead to possible asbestos exposure.

Although the vast majority of the building work undertaken in the University is directed by Estates and Buildings, it is recognised that some departments are also involved in small scale work on the fabric of University buildings. Whether the work is simple, or complex, the risk of disturbing asbestos containing materials must always be kept in mind whenever the surface of any part of the building fabric is broken. When a contractor is employed it is most important that they are fully informed about the likelihood of encountering asbestos during their work in the University. Lack of proper precautions whilst carrying out work on ACMs could result in the uncontrolled release of asbestos fibres which can present a risk to health, therefore, all such work must be properly planned by competent persons.
Those who carry out any work involving removal or physical alteration to the fabric of any University building must first consult Estates and Buildings for advice on whether there are any ACMs known to be in the area where the work is to be carried out (consult the Asbestos Register). A preliminary survey to assess the likelihood of encountering asbestos is also required. The complexity of this will vary depending on the nature of the planned work and might range from a relatively simple “management survey” by a competent person to a more extensive and invasive “Refurbishment/Demolition Survey”.

10. Discovery of Damaged or Hidden ACMs

Where damaged ACMs are encountered within the fabric of the building (even minor damage) must be reported immediately to E&B so that action, which is appropriate to the risk, can be arranged. The extent of the measures to be put in place will depend on the location and the extent of the damage together with the type and condition of the ACM involved.

After work has commenced, those carrying out the task must remain alert to the possibility of ACMs which are hidden. All operations must be conducted so that the risk of inadvertent damage to concealed ACMs is minimised. If despite taking every precaution, a material which is suspected of containing asbestos is encountered, work must stop immediately and the area must be closed off. E&B and SEPS must be notified immediately.

Management Unit's/Service Department’s own equipment containing damaged ACMs must be taken out of use. Immediate advice should be sought from Estates and Buildings on safe disposal. Equipment should general be left undisturbed in the first instance and must not be handled or moved in a manner that may release asbestos or cause exposure of anyone to ACM.

11. Making ACMs in Buildings Safe

As indicated previously, provided that the material is in good condition, and is unlikely to be disturbed, damaged or worked on it does not present a risk to health. HSE advise that, under these conditions, is safest to leave it in position. If this is done a system of regular inspection is necessary to make sure that these circumstances do not change. Labelling of the asbestos is also generally appropriate. (See Section 7). These tasks are undertaken by E&B in relation to ACMs in the fabric of the building.

Where these conditions cannot be met the other options are to either remove the asbestos or to enclose it so that fibres cannot be released.

Asbestos removal, or stripping, is both a technically difficult and expensive process and must always be carried out by a specialist contractor licensed by the HSE. It is normally carried out in conjunction with other major repair or refurbishment work as it invariably involves serious disturbance to the fabric of the building and disruption to the occupants. Whenever major refurbishment of buildings is taking place it is the normal practice of the University to remove all asbestos from the area being worked on as part of the refurbishment programme.

Asbestos enclosure can be achieved by either constructing a physical enclosure around the material or, more commonly, by encasing it in a surface protective coating to prevent the release of fibres into the air. This work must also be carried out by specialist licensed contractors. Enclosure of the asbestos by means of a surface coating is generally known as “sealing” or “encapsulation”. A regular program of inspection is necessary to check that any applied coating, or physical enclosure, remains intact. This is the responsibility of E&B. If such enclosures do become damaged, E&B must be informed immediately. See Section 10 for further advice.

12. Disposal of ACM Waste

The storage, transportation and disposal of asbestos waste is governed by a various Acts and Regulations. In addition, the relevant guidelines of the Scottish Environmental Protection Agency
(SEPA) will also apply. It is classified as “Special Waste”. Therefore, only licensed contractors can arrange for the storage, transportation and disposal of any asbestos waste or any materials containing asbestos or materials contaminated (or suspected to be contaminated) with asbestos originating from University buildings. Asbestos waste may not be disposed of via the normal refuse stream. It must be disposed of at a waste disposal site that is licensed to receive asbestos waste.

It is not expected that Management Units/Service Departments will have much need to dispose of asbestos since most work with it will be undertaken by specialist contractors who will arrange for the disposal. However, occasionally there may be a need to dispose of asbestos containing equipment or items such as fallen ceiling tiles, asbestos cement products or redundant laboratory equipment. This can usually be arranged via Estates and Buildings. Laboratory equipment/appliances should be disposed of intact.

All asbestos waste and asbestos contaminated material awaiting uplift, shall be double bagged or double wrapped in heavy duty polythene, securely sealed with tape and clearly marked as “ASBESTOS WASTE” in accordance with legal requirements before removal from site.

The Regulations define asbestos waste as any asbestos that has been removed from its original place of use. This also includes debris, dust, rubble and equipment which contains ACMs or potentially contaminated with ACMs.

It should be noted that current legislation prohibits the sale or gift of any waste or unwanted products or equipment that contain asbestos e.g. second hand asbestos cement products or redundant laboratory equipment.

13. Further Advice

If you need more information on any aspect of this guidance or on work with ACMs, please contact SEPS or Estates and Buildings compliance section.

Note: This Guidance Note is issued jointly by Safety and Environmental Protection Service and Estates & Buildings.
## Typical Locations of ACMs within Buildings and their Usage

<table>
<thead>
<tr>
<th>Asbestos Product</th>
<th>Typical Usage/Location</th>
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<tbody>
<tr>
<td>Loose asbestos insulation or packing. Also fibre filled mattresses and quilts.</td>
<td>Fire breaks in ceiling voids and fire stopping around cables. Also used as sound insulation between floors.</td>
</tr>
<tr>
<td>Sprayed coatings. Wet or dry applied. Usually un-bonded fibres. Usually known as “limpet” or “flock” asbestos. (Sometimes trowel treated to provide a decorative finish).</td>
<td>Generally fire protection in ducts, firebreaks, ceiling panels, partitions, soffit boards, around structural steel work and reinforced concrete beams/columns. Also used as anti-condensation insulation on underside of roofs etc and acoustic insulation.</td>
</tr>
<tr>
<td>Thermal insulation. Hand-applied lagging or mass produced moulded or preformed products e.g. pipe sections.</td>
<td>Generally used in thermal insulation of heating systems where high levels of heat retention were required e.g. pipes, boilers, calorifiers, pressure vessels etc.</td>
</tr>
<tr>
<td>Insulating boards (including blocks, composite products and “Millboard”) Usually known as AIB.</td>
<td>General fire protection, thermal and acoustic insulation in partitioning, firebreaks, infill panels, ceilings (including tiles) wall and stair linings, roof underlay and ducts. Used as heat-resisting panels screwed to, or in the centre of fire doors. Also used where moisture could be a problem and as a general building board. Also used for insulation of electrical equipment, boiler casings, oven linings, storage heaters and other heating appliances. Often used as heat resistant panels for ironing boards and Bunsen burner stands.</td>
</tr>
<tr>
<td>Woven asbestos products such as ropes, yarns, cloths and fabric joints.</td>
<td>Thermal insulation of boilers, pipes calorifiers etc. Also used for packing, jointing and sealing in boilers, incubators and ovens (particularly in door seals), gaiters between ductwork flanges and caulking of pipe ducts in brickwork. Cloths used as thermal insulation in the form of fire-resisting blankets (e.g. some very old types of fire blanket), protective curtains, gloves, aprons etc. Insulation between copper pipes and steel pipe clips. Insulation in electrical switchgear, particularly fuse boxes.</td>
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<tr>
<td>Paper, felt and cardboard products.</td>
<td>Insulation of electrical equipment and wiring, fireproofing of wood boarding, lining to flooring (backing to floor tiles) and DPC products. Also used to line surfaces of other boards, ceiling tiles and sheet materials. Corrugated cardboard sometimes used as pipe and duct insulation.</td>
</tr>
<tr>
<td>Gaskets, washers and strings.</td>
<td>Seals in boilers, calorifiers and other heating appliances, pipes and valve joints. Strings used for sealing various screw thread joints such as seals in hot water radiators.</td>
</tr>
<tr>
<td>Friction products. (Resin based materials).</td>
<td>Brakes and clutches in vehicles, machinery and lifts. Sometimes used in some drive belts.</td>
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<td>------------------------------------------</td>
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<tr>
<td>Asbestos cement products (Usually known as AC sheets).</td>
<td>Flat or corrugated sheets used for a variety of applications such as roofing, partitioning, wall cladding products, soffits, rainwater goods, cold-water storage systems, pipes and flues, ventilation ducts, fume cupboards, portable buildings, propagation beds, general weather boarding, cooling towers, laboratory worktops, windowsills and boxes, draining boards, shuttering, damp-proofing etc. Often used as heat resistant panels for ironing boards and Bunsen burner stands. Does not have a high resistance to fire but does have a high resistance to weathering.</td>
</tr>
<tr>
<td>Textured coatings and paints containing asbestos fibres. Commonly known as “Artex” (or sometimes “Pebblecoat” or “Wondertex”).</td>
<td>Thin decorative/flexible coatings on walls and ceilings.</td>
</tr>
<tr>
<td>Bitumen products, mastic, sealants, putties, tapes and adhesives.</td>
<td>Roofing felts, gutter linings, flashings, DPC, jointing tapes and floor/wall adhesives. Also used as anti-resonance pads under kitchen sinks.</td>
</tr>
<tr>
<td>Flooring products.</td>
<td>Thermoplastic and PVC tiles.</td>
</tr>
<tr>
<td>Reinforced PVC, plastic and resin composite products.</td>
<td>Panels, cladding, toilet seats and cisterns, banisters, window seals, lab bench tops.</td>
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</tbody>
</table>

The asbestos fibres in those materials towards the top of the list tend to be more easily released from the material than those nearer the bottom. Fibres firmly linked in a matrix such as asbestos cement sheets, textured coatings etc are unlikely to be released unless they are being severely abraded or mechanically damaged.

Useful photos showing typical locations of ACMs can be found at:
http://www.hse.gov.uk/asbestos/gallery.htm