Education Funding Agency

Asbestos in schools: Where it may be located

Departmental advice for school leaders, governors, staff, local authorities, academy trusts and charitable trusts

February 2017

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Summary

About this departmental advice

This document is non-statutory departmental advice from the Department for Education. It has been produced to help recipients understand where asbestos might be found on their premises and help them work with qualified professionals, such as asbestos surveyors.[1] This advice includes examples of the different types of asbestos-containing materials (ACMs) and where they may be found in schools, and complements our main departmental advice on the management of asbestos in schools.

The examples presented here are not exhaustive, but are intended to show the most common places asbestos can be found. This should help recipients engage with asbestos surveyors and other professionals whose expertise will be required to properly manage any ACMs present in their school.

Asbestos is a very hazardous substance which is capable of causing cancer and you should always seek professional advice to support you in its management.

Expiry or review date

This advice will next be reviewed 18 months after publication.

Who is this advice for?

This guidance is for the appointed person and their deputies who are responsible for managing ACMs in a school's premises. It will also be a useful reference for school leaders, school staff, trusts and governing bodies in all maintained schools, academies and free schools.

About asbestos and asbestos-containing materials

Asbestos is a naturally-occurring fibrous mineral. There are several types, of which crocidolite, amosite and chrysotile were most frequently used in building materials in the UK up to the year 2000. While there is debate about how dangerous each type is, the law treats them all equally.

Asbestos was incorporated into a wide variety of materials that became part of buildings or articles. Depending on the material, the asbestos fibres are held in place more or less tightly - see diagram on page 4.

However, the likelihood of fibre release depends on the material, its location and very importantly, its condition. Undamaged, sealed materials will not release fibres.

[1] The Department recommends that asbestos surveyors should be accredited by the appropriate body such as the United Kingdom Accreditation Service (UKAS)

Scale:
Fibres released quite easily → **Fibres tightly bound**

Sprayed asbestos
Pipe insulation
Textured wall and ceiling finishes like Artex
Asbestos insulation board
Asbestos cement
Bitumen or plastic matrix materials

Figure 1

Whilst all ACMs are hazardous, asbestos fibres only become a risk to human health when they are released into the air and can be breathed in. The risk increases with more fibres breathed in over time.

Asbestos fibres can be released as materials deteriorate through age, or because of building and maintenance work. In general, those most at risk are maintenance workers and others who repeatedly work with and disturb ACMs.

However, there is potential for pupils and staff to be exposed to asbestos fibres through:

- unintended or accidental damage
- misuse or misguided activity, e.g. using lagged pipes as driers, or inappropriate cleaning
- vibration
- vandalism
- vermin or water damage
- wear and tear
- boisterous behaviour

The types of building and maintenance work that might disturb ACMs include:

- installation, inspection and servicing of building systems such as heating, electrical, fire detection and security systems
- lighting replacement, ceiling tile replacement or ceiling access
- general building maintenance including work in plant room areas
- installation of ICT equipment and cable
- refurbishment projects

Examples of activities that have disturbed asbestos in schools causing accidental exposure include:

- a contractor drilled through a ceiling into asbestos insulation boards. He was unaware of the presence of asbestos having been shown straight to the work area without reference to the asbestos register
- a caretaker regularly swept the school boiler room, unaware that the dust was contaminated with asbestos

- a caretaker vacuum cleaned fan heater units, not realising the units contained damaged asbestos panels
- teachers stored materials in a cupboard lined with ACMs which became damaged over time, increasing the risk of exposure to fibres. The damage was not reported and was only discovered some time later during a survey
- teachers suspended decorations from ceiling grids when the ceiling void was contaminated with asbestos debris

ACMs in schools can also be damaged through boisterous behaviour, vandalism and the actions of others. Examples include:

- pupils playing football indoors damaged a ceiling with the ball, releasing asbestos dust from the roof void
- an afterschool group attached a skateboard ramp to an asbestos clad column
- pupils displaced ceiling tiles made from asbestos insulating board in order to hide objects
- door slamming is another example where managing pupil behaviour is a key control, although the amount of fibre release has not been demonstrated to be significant
- putting drawing pins into walls as part of displays can release asbestos fibres. This activity **should not** be taking place in schools where asbestos is known to be present

Where asbestos may be located

The presence of ACMs in a school building requires proper management. Any deterioration or damage to the condition of ACMs must be recognised and investigated. The items on this list are categorised according to the different components of a school building, from its structure to the various miscellaneous items that might be found in it.

Photographs have been included to help with the identification of potential ACMs that may be present in school buildings.

Asbestos-containing materials found in school building structures

Asbestos Insulating Board (AIB) in walls, ceilings, window and door surrounds, and structural columns

AIB was extensively used in the construction and refurbishment of schools - often to provide fire containment. When painted, this looks similar to plasterboard.

It was used in wall panels, ceiling tiles, window and door surrounds and as a general building material. Corridors were often lined with it, but it was also extensively used in rooms including classrooms, halls, science laboratories, kitchens, and toilets.

AIB is sometimes hidden, for instance when used as a firebreak in ceiling voids, or in composite materials sandwiched between materials such as strawboard, plywood, metal mesh, sheet metal and plasterboard. AIB panels were frequently cut to shape during

construction so it is common to find off-cuts in ceiling and wall voids. External soffits can also be made of AIB.

AIB was used as cladding around steel columns and beams for fire protection of steel framed buildings including system-built premises such as CLASP, SCOLA, SEAC, Method, Hills and MACE.[2]

AIB panels beneath windows – AIB panel exposed below window board

Base of a structural steel column in a classroom – exposed asbestos column linings

[2] See glossary of terms and abbreviations on Page 19

Dust containing asbestos - asbestos ‘dust’ pipe insulation below stage

AIB cladding and asbestos debris – asbestos debris from AIB window surround cladding

Damaged asbestos panelling – AIB base board to riser, historic damage

AIB debris in ceiling void of a school - insulation debris to back of non-asbestos suspended ceiling

Asbestos cement in external roofing, tiling, flues and windows

Many schools still have asbestos cement roofing sheets, roof tiles, boiler flues and external window panels. Asbestos cement wall and roofing sheets are particularly common on garages, storage sheds and ancillary buildings. Asbestos cement panels have been used in classroom walls. Ceilings, gutters and soffits can also be made of asbestos cement.

Asbestos cement is a harder material than AIB and the fibres are held in place unless the material is damaged. If cleaning is necessary, professional asbestos advice should be sought first. Visually, asbestos cement and AIB are similar and can be found in many of the same building elements.

Mechanical and electrical systems

Pipework insulation in heating systems

Asbestos insulation was commonly used around boilers and pipes. Most, but not all insulation is in boiler houses or basements, or concealed in floor ducts, service risers and ceiling voids and therefore not readily accessible. However, some are more accessible and hence more liable to be disturbed.

Asbestos lagging beneath floorboards

Sub floor heating ducts – insulation board shuttering around duct hatches

Asbestos in underground duct work- sub floor heating ducts, asbestos pipe insulation

Asbestos insulation and cement in heaters, freezers and as pre-formed pipe and column insulation

This type of insulation is often similar to AIB but is in slabs and blocks and used as insulation in storage heaters and fan assisted heaters or moulded to shape for pipe insulation or as cladding to steel work. Old commercial freezers can also contain asbestos.

Some moulded cladding for structural steel work can contain asbestos in a cement matrix. Fibres are released less easily, but as the columns can be free standing in classrooms the cladding can be damaged accidentally.


Moulded column cladding containing asbestos

Loose asbestos materials in storage heaters, kilns and roof insulation

Finding this application of asbestos is now very rare, but it was used in mattresses and quilts around boilers and as thermal and acoustic insulation in roof spaces and floor voids. Loose asbestos materials were also used as thermal insulation in kilns, electric storage heaters and cooking ranges. Some fire doors contain loose asbestos insulation sandwiched between the wooden or metal facings. It was also packed around electrical cables, sometimes using chicken wire to contain it.

Asbestos cloth, rope and yarns

Firebreaks in ceiling voids can be made of asbestos cloth; seals on boilers and pipe work can be made of asbestos ropes and yarns.


Asbestos firebreak in ceiling void of a school

Fixtures and fittings

Asbestos Insulation Board (AIB)

AIB was often used for heat resistant surfaces in laboratories, kitchens and workshops and in cupboards. Fire doors can often contain AIB panels as can laboratory fume cupboards. Fire resistant boards behind electrical distribution boards can also be made of AIB.

Some older types of heaters can contain AIB or it may have been used to protect the surrounding walls and floors.

Warm air cabinet heaters were first developed in the 1950s and became one of the most popular forms of heating in schools. The heating elements and fans are contained within large cabinets that can either be free standing on the floor of the room or concealed within a wall. The cabinets were constructed on site, usually of a timber frame, and were typically lined with unsealed AIB.

Warm air cabinet heater – AIB Unit ‘surround’ and internals

Paper floor underlay and ceiling panels

Asbestos paper was used as an underlay for carpets, floor tiles and linoleum. Additionally, a type of non-asbestos building board was faced with it and can be found as ceiling panels. Asbestos paper was also used as pipe insulation.

Bitumen and mastics sink pads, floor adhesive, roofing felt and damp proof course

Bitumen mastics and adhesives were used for floor tiles, wall coverings, damp proof courses and sink pads. The asbestos fibres are held firmly by the bitumen matrix.

Floor tile adhesive (Bitumen) containing asbestos

Reinforced plastic floor tiles, window sills, stairs, toilet seats

Floor tiles containing asbestos were widely used in schools. Toilet cisterns and seats, stair banisters and window sills were made of a resin composite. Old electrical switchboards, socket outlets and electrical fittings can also contain asbestos. In these examples, the asbestos fibres are very firmly bound into the material.

Badly worn asbestos floor tiles in a school corridor – damaged floor tiles and adhesive below corridor carpet

Asbestos containing stair nosing

Finishes

Sprayed asbestos on walls, ceilings and structural columns

Sprayed asbestos was used mainly for fire protection and insulation - applied to beams, columns, ceilings, walls and the underside of floors until spraying ceased in 1974. It has a high content of asbestos fibres.

Sprayed asbestos on the ceiling of a school corridor – sprayed asbestos above suspended ceiling

Sprayed asbestos on a column of system built school- CLASP built steel framed school with fully ‘lagged’ frame

Sprayed asbestos on a column of system built school – lining behind cement wall end and column linings

Sprayed asbestos on a column of system built school – Steel frame, wrapped in perforated steel with blown asbestos (note pattern on top left)

Textured coating ceilings and walls

Textured coatings such as “Artex” are found as decorative finishes to walls and ceilings. Textured coating containing asbestos was used extensively until the mid-1980s.

Articles and items found in schools

The following asbestos-containing articles should no longer be present in schools and, if found, should be removed and disposed of in accordance with the arrangements for asbestos-containing waste material:

- **Ironing board stands, heat mats, display boards and blackboards**
  Some ironing board stands, heat mats, display boards and blackboards were made using AIB

- **Millboard mats, ironing board stands, panels**
  Millboard, similar to AIB but softer, has been used in schools as heat mats and ironing board stands

- **Asbestos cloth oven gloves, seals and fire blankets**
  In the past asbestos-containing oven gloves, aprons, curtains and fire blankets were common in school workshops, cookery rooms and laboratories. Seals on kilns, cookers, sanitary incinerators, etc. were also made using asbestos cloth

- **Asbestos cement**
  Asbestos cement was used for cupboard shelves, worktops, and linings to fume cupboards, ironing board pads and Bunsen burner mats

Asbestos cement fume cupboard – cement flue above fume cabinet

Asbestos Debris

Sometimes, asbestos debris is found in enclosed spaces – for example, the ceiling void above a false or suspended ceiling made of AIB ceiling tiles. Here the asbestos debris is likely to be a result of the original construction of the building. Poorly executed asbestos removal in the past or uncontrolled work on ACMs and a failure to clear up afterwards can also result in debris.

Historic articles used for educational purposes

Schools should exercise caution when historic or vintage articles are used for display or educational reasons as some may contain asbestos.

For example, as part of the anniversary of WWI some vintage gas masks were taken into schools. Unfortunately, vintage gas masks (WWI vintage and later) often contain asbestos and asbestos fibres can also be present within gas mask canisters, canvas bags or cardboard boxes used to carry or store them. HSE and the Imperial War Museums advise that no children or school staff should wear or handle an original gas mask or handle its bag or box.

Modern replicas are available and are just as useful for illustrative educational purposes.

Glossary of terms and abbreviations

ACMs - Asbestos-containing materials

AIB - Asbestos Insulating Board

CLASP - Consortium of Local Authorities Special Programme

Hills - Hills buildings were a post-war forerunner of the CLASP and SCOLA systems.

MACE - Metropolitan Architectural Consortium for Education

Method - The Method system had many aspects similar to CLASP

SCOLA - Second Consortium of Local Authorities

SEAC - South Eastern Architects Collaboration

Useful resources

Managing asbestos in your school

Essential school maintenance- a guide for schools

A comprehensive guide to managing asbestos in premises

HSE : Frequently asked questions on asbestos

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