

Asbestos Liaison Group (ALG)

ALG Memo 01/09

ALG memos are produced by the ALG to provide information and guidance to the asbestos industry and other interested stakeholders.

Date: January 2009

Subject: Maintenance of air extraction equipment and Class “H” vacuum cleaners in the asbestos industry

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Scope of the memo

- 1) This memo aims to clarify the circumstances where a licence to carry out work with asbestos is required by those undertaking the maintenance of air extraction equipment and vacuum cleaners. This memo addresses the standards expected of those carrying out this work and clarifies what is meant by thorough examination, testing and maintenance requirements for air extraction equipment and Class “H” vacuum cleaners. It will be of interest to
 - a) “full” licence holders who also maintain their own equipment and
 - b) to dedicated equipment maintenance / supply companies.
- 2) The required standards for this class of ancillary licence holder are very similar to those expected of “full” licence holders. This memo draws together sources of [further information](#) from existing publications and guidance, which should be referred to for further detail.
- 3) Where “full” licence holders carry out licensed maintenance work it must be notified to the relevant authority. If licensed maintenance work is frequent, “full” licence holders may request an amendment to their existing licence: an additional condition would be required, allowing maintenance work in designated locations (see [below](#)).

Key legal requirements: Control of Asbestos Regulations 2012

a) Licences for work with asbestos (Regulation 8)

Under the Control of Asbestos Regulations 2012 (CAR), a licence is required in order to carry out work with asbestos (unless the exemptions in Regulation 3(2) apply, namely that any exposure will be “sporadic and low intensity” **and** the control limit will not be exceeded **and** the work falls into one of the defined categories). “Work with asbestos” will include ancillary work, such as the maintenance of air extraction equipment.

b) Maintenance of control measures (Regulation 13)

Vacuum cleaners and air extraction equipment used for asbestos work (and any other plant and equipment provided in order to meet the requirements of CAR) must be maintained in an “efficient state, in efficient working order, in good repair and in a clean condition”. In addition, the contractor must ensure that “thorough examinations and tests” of vacuum cleaners and air extraction equipment are carried out at suitable intervals by a competent person. Records of examinations and tests (and subsequent repairs) must be kept by the employer for at least 5 years.

c) Preventing exposure (Regulation 11) and spread (Regulation 16)

All employers must prevent exposure to asbestos (so far as is reasonably practicable) or minimise such exposure where it can't be prevented. Employers must also prevent the spread of asbestos or reduce the spread to the lowest level reasonably practicable.

d) Plans of work (Regulation 7)

Before undertaking any work with asbestos, a suitable written plan of work **MUST** be prepared. This document is intended to be a practical guide for those carrying out the work and will detail the method of work to be used and take into account the findings of all relevant risk assessments.

“Maintenance” and “air extraction equipment”

- 4) “Air extraction equipment” includes air movers or negative pressure units (NPU) and associated “roving heads” and ducts used for asbestos work. The term will also include extraction units on hygiene facilities and relevant ventilation equipment in laboratories handling asbestos. “Maintenance activities” encompass a wide range of services in relation to air extraction equipment and Class “H” vacuum cleaners, not all of which will be licensable. Maintenance activities include filter changing, airflow checks, DOP tests, motor repairs, electrical testing, repair or replacement of switches, seals, casing etc.
- 5) Ultimately, for any work activity involving asbestos, detailed risk assessments will be necessary in order to determine appropriate working methods and also whether a licence is required (i.e. whether the exemptions in Regulation 3(2) will apply). The following activities are likely to require a licence to work with asbestos:
 - a) Replacing contaminated HEPA filters or pre-filters;
 - b) Emptying contaminated Class “H” vacuum cleaners.

In all cases, a licence will be required unless it can be demonstrated that exemptions in Regulation 3(2) apply.

- 6) The users of equipment must cooperate fully with any licensed/unlicensed contractors carrying out maintenance work. For example, systems of work must ensure that equipment is cleaned, so far as reasonably practicable, before being removed from an enclosure.

Maintenance work which does NOT require a licence

- 7) Generally speaking, maintenance work that does not involve access to contaminated parts will not require a licence. For example, carrying out DOP tests, electrical checks and airflow checks on 'clean' units will NOT require a licence. Such work will not be licensable "work with asbestos" as defined. This does not mean that the work is without risk. **The employer will still have general duties under CAR, the Act and other relevant legislation to ensure safe working practices and ensure that all reasonable steps are taken to minimise the potential for accidental exposure.**
- 8) All reasonable steps should be taken to ensure that equipment is suitably cleaned prior to maintenance being carried out.
 - a) A precautionary approach should be taken with regard to any work on this class of equipment. Work activity will proceed in a progressive manner, establishing that the components/items are clean before further intrusion or disturbance. Guidance on cleaning Class "H" vacuums is given in the attached [appendix](#) and in PAS60-3.
 - b) Reasonably practicable measures should be taken to ensure that equipment is thoroughly cleaned: maintenance workers should not be put at risk inadvertently due to contaminated equipment, damaged covers, pre-filters, seals etc. For example, contractual agreements with clients may require that external parts of equipment are thoroughly cleaned before transportation.
 - c) Management and operatives should be able to demonstrate an appropriate level of competence with regard to general risks associated with asbestos, the relevant legislation, associated guidance and safe working methods.
 - d) Emergency arrangements (including a consideration of effective decontamination arrangements) should be in place to allow for unexpected contamination.
 - e) An appropriate level of training will be necessary for all relevant staff. For example, drivers are likely to require asbestos awareness training whereas the engineers carrying out maintenance etc. may require specific training for non-licensable asbestos work.
 - f) Appropriate protective equipment will include respiratory protective equipment, accompanied by current face fit tests.

Standards for ancillary licence holders

- 9) Permissioning regimes (such as the asbestos licensing system) are an addition to the general framework of health and safety law. They are very resource intensive for both duty holders and enforcing authorities. Exemplary management standards are expected from those wishing to hold a licence. As for "full licence" applicants, ancillary licence applicants will need to demonstrate robust management systems and an understanding of relevant legislation and guidance. See the section below for [sources of further information](#), which should be consulted in conjunction with the following notes.
- 10) When a new licence is granted, the maintenance company will be required to submit a **single** notification to the appropriate enforcing authority – this should confirm the range of work to take place and be accompanied with any other information required by licence conditions. The local Asbestos Licensing Principal Inspector (ALPI) should be informed prior to any significant changes to the work as notified. Detailed written procedures and method statements should be produced to cover the work. Similar statements will cover emergency procedures.
- 11) Licensed work should be undertaken in a dedicated, permanent "enclosure" under negative pressure. The enclosure will meet the standards described in Chapter 6 of "The Licensed Contractors' Guide" (HSG247) – as a minimum. Appropriate signage and security is particularly important.
- 12) Suitable training must be provided to all relevant staff (operatives, supervisors and senior managers/directors) involved with the licensed activity. Chapter 4 of the Contractors' Guide provides guidance, but the training modules will need to be tailored to meet the specific requirements of this type of licence holder: requirements will be guided by ongoing training needs analysis.

The licence holder should be able to demonstrate that training needs have been identified in a systematic manner and that those needs have been addressed. Management systems should be robust enough to ensure that training is repeated at suitable intervals (annually). Training will address the following (please note that this list is not intended to be exhaustive):

- a) All relevant staff must have an understanding of risks associated with working with asbestos and the key legal requirements. Managers and supervisors will need sufficient technical knowledge to enable them to supervise the work effectively.
 - b) Operatives must have detailed practical training in decontamination procedures, the use and storage of respiratory protective equipment and the handling of waste.
 - c) Practical training must also cover the systems of work to be used. This should correspond to written procedures, risk assessments and method statements produced for the purpose.
- 13) Detailed plans of work will be provided for all licensed work. See guidance in the Approved Code of Practice (paragraph 76 refers), the Contractors' Guide and relevant ALG memo.
- 14) As for full licence holders, there must be a strategy for carrying out personal air monitoring. Monitoring will enable the licence holder to build up baseline exposure data for the types of work being carried out in the enclosure and may inform risk assessment and RPE selection. The monitoring strategy will also be used to demonstrate that control measures are effective and used to establish employee exposure records, which will be maintained as part of an employee's health record (see below).
- 15) All employees carrying out licensed work with asbestos will need to be subject to adequate health surveillance and there will be arrangements for keeping health records for 40 years. Regulation 22 of the Regulations refers. See Approved Code of Practice, paragraph 346.

Cleaning enclosures

- 16) Where work has been completed, the area must be thoroughly cleaned. The Approved Code of Practice (see Regulations 17 and 20 and corresponding ACoP paragraphs 284 and 339) refer. In typical "full" licence asbestos removal work, a 4-stage clearance procedure is expected after every job, prior to re-occupation. This is unlikely to be necessary for maintenance ancillary licence holders. The following table gives an indication of appropriate cleaning regimes.

| Frequency | Action |
|---|---|
| Each time a piece of work is completed | A visual inspection to establish that the item being worked on and the immediate work area are free from all visible traces of dust and debris. |
| At the end of each shift | A visual inspection to ensure that the whole enclosure area is free from visible traces of dust and debris. |
| At "suitable" intervals | A disturbed air test is carried out by a competent analyst. This will confirm the effectiveness of the cleaning regimes described above. The frequency of such tests will depend on the use of the enclosure. For example: 1) Regular use – no less than monthly tests. 2) Intermittent use – no less than quarterly tests. |
| Before re-occupation, or uncontrolled access to enclosure | A formal 4-stage clearance will be required, as described in HSG248 (The analysts' guide for sampling, analysis and clearance procedures). |

- 17) Each inspection or test should be recorded, with the records being kept available for inspection, or for reference at reassessment. The inspections will cover the whole of the controlled asbestos area and include the decontamination facilities as well as the main working area of the enclosure.
- 18) As 4-stage clearance will not be carried out after every job, it is particularly important that the enclosure is properly secured and signed to prevent inadvertent entry. Unless a formal 4-stage clearance has been achieved, the area will be a designated asbestos area and access will only be allowed to those who have been suitably trained and are wearing the appropriate personal protective equipment.

Licence conditions

- 19) The standard licence conditions placed on all ancillary (maintenance) licence holders are as follows:
- i) *This licence or a copy thereof, should be made available on request by the licensee for inspection by any person to whom the licensee submits a tender or quotation for work with asbestos and shall be available for inspection at all worksites. A copy of the licence shall accompany each notification required by Condition 2.*
 - ii) *The licensee shall give notice in writing of the work to the appropriate HSE or local authority office on receipt of this licence. The notice shall specify the type of work to be carried out. The enforcing authority must be informed in writing as soon as possible if this information changes. This condition will not apply for any work carried out with asbestos, which is subject to the exemptions specified in Regulation 3(2) of the Control of Asbestos Regulations 2012.*
 - iii) *The notice of work required by Condition 2 above shall include:*
 - (a) *a suitable and sufficient written statement of the method of work to be used;*
 - (b) *a suitable and sufficient written specification for the equipment for the protection and decontamination of those engaged in asbestos work and also for the protection of other persons, as appropriate to your work.*
 - iv) *This licence shall only apply to work carried out by you at (insert full site address) and shall be limited to the maintenance of air extraction equipment.*

Transporting air extraction equipment and Class “H” vacuums

- 20) Unless it can be confirmed that equipment has been thoroughly cleaned it should be treated as contaminated and handled accordingly. Prior to transportation, transit covers should be securely attached to NPUs in order to protect the entire pre-filter face. Class “H” vacuum cleaners should be double-bagged. All equipment should be adequately secured and protected to ensure it is not damaged in transit. Equipment should be clearly labelled as containing asbestos.

Inspection and thorough examination and testing of air extraction equipment

- 21) The **user** of the equipment has a duty to ensure that it is adequate and fit for purpose. Regulation 13 requires licensed contractors to ensure air extraction equipment and “H”-Vacs are subject to thorough examination and tests. These must be carried out at suitable intervals by a competent person. ACoP paragraphs 209 – 212 and paragraph 6.58 of the Contractors’ Guide refer.
- 22) The ACoP and Contractors’ guide specify a test and thorough examination at least once every 6 months, carried out by a competent person. Manufacturers’ instructions should be used to guide the scope of thorough examination and test of equipment. The primary purpose is to ensure:
- a) HEPA filters are performing to a satisfactory level (99.995% efficiency);
 - b) The mechanical and electrical integrity of the unit is sound **and**;
 - c) Satisfactory air flow is being achieved (PAS60-2, Annex A describes an Airflow performance test for air extraction equipment).
- 23) The Contractors’ Guide (at paragraph 6.44) also describes the elements of a good extract ventilation system and this should be considered when carrying out maintenance or thorough examination and test of equipment. The examination should therefore also consider the condition of the reverse flow damper, flow indicator and (where the unit is examined as part of an ongoing job) the position and condition of discharge ducting.
- 24) There is a direct correlation between the effectiveness of air extraction equipment and the condition of the pre-filter and HEPA filter. In addition to the six monthly thorough examination and test, there should be frequent performance checks of the equipment. The Contractors’ Guide (at paragraph 6.44) states that flow meters should be fitted to extract ventilation. These should be routinely checked at the start of each shift.
- 25) A record should be produced noting the nature of the inspection and thorough examination, any routine maintenance and any defects that have been remedied. The record should confirm the measured airflow; satisfactory performance of HEPA filter and mechanical and electrical integrity.

The unit itself should be clearly marked where the actual air-flow performance is less than the design capacity.

Monitoring a licence holder's performance

- 26) The manner in which the performance of ancillary (maintenance) licence holders is inspected by the enforcing authorities differs to that of "full" licence holders: notification requirements are different, the licensed work is likely to be intermittent and it will take place in premises not normally visited by Construction/Asbestos inspectors. To address this, Asbestos Licensing Principal Inspectors (ALPIs) should ensure that licence assessment meetings are arranged to incorporate inspection of ongoing work as well as to allow for the routine licence assessment review of management systems.
- 27) The main activity taking place on the licence holder's premises determines the appropriate enforcing authority for the purposes of Health and Safety legislation. Many "maintenance" licence holders may be enforced by Local Authority Officers or non-Construction HSE operational groups. HSE inspectors and ALPIs should liaise with other enforcing authority/non-construction groups within HSE with regard to inspection. Asbestos inspectors should restrict their work on site to licensing issues (whilst dealing with matters of evident concern as appropriate and working in accordance with any existing agreements).

Sources of further information

- 28) HSE publications and guidance
- a) Successful Health and Safety Management (HSG65)
 - b) Asbestos: The licensed contractors' guide (HSG247)
 - c) Work with materials containing asbestos: Control of Asbestos Regulations 2012 – Approved Code of Practice and guidance (L143)
 - d) [Asbestos Licence Assessment Guide](#)
 - e) [ALG memo](#): How to draw up a plan of work
- 29) Publicly Available Specifications (PAS)
- a) PAS 60-2: Negative pressure units – specification
 - b) PAS 60-3: Operation, cleaning and maintenance of class H vacuum cleaners

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APPENDIX 1: Class “H” vacuum cleaners

NOTE – the following table is for guidance and illustration only – decisions should be based on comprehensive risk assessment, taking into account the particular nature of the job in hand (including non-asbestos related hazards) and taking into account manufacturers’ instructions. Where a licence is not required, many parts of the Control of Asbestos Regulations 2012 will still apply, most notably the requirements to prevent exposure and spread (so far as is reasonably practicable).

| ACTIVITY | Frequency | Notes | Licence Required? |
|---|--------------------------------|--|--|
| Class “H” vacuums used for asbestos work | | | |
| Visual inspections | Daily and weekly (when in use) | <p>Visual inspection by a competent person (for example, an experienced operator), looking for signs of physical damage or overheating, and covering (1) electrical plugs, (2) Cables, (3) Switches, (4) Handles, (5) Hoses, (6) Outer case, casters and handles (including seals).</p> <p>In addition, the low-flow indicator should be tested by switching the vacuum on and placing hand over the air inlet.</p> | No - unless inspections carried out within enclosures as part of ongoing licensed work. Where work is not carried out by a licence holder there must be confirmation that external parts have been cleaned, as below |
| Thorough examination and test | 6 monthly | <p>Thorough examination and test carried out by a competent person or organisation (unlikely to be an operator) – to ascertain that the equipment is working properly, with reference to its design specifications and in accordance with manufacturer’s instructions.</p> <p>The examination and test must establish the mechanical and electrical integrity of the unit; the effectiveness of the HEPA filter and that satisfactory air flow is being achieved.</p> | No – unless filter, bag, or other contaminated parts are accessed |
| Maintenance | As required | | No – unless filter, bag, or other contaminated parts are accessed |
| Removing dust bags (or inspecting them) or changing filters | As required | Work must be undertaken within a working enclosure – the cleaning process will involve - (1) cleaning outer surfaces with a damp rag or adhesive wipe, (2) removing dust bag, (3) cleaning internal areas using Class “H” vacuum and / or damp rags, (4) allowing internal surfaces to dry before re-assembly (5) Treat used rags, dust bags etc. as asbestos waste. | Yes |

| ACTIVITY | Frequency | Notes | Licence Required? |
|-----------|--|--|---|
| Cleaning | Before and after work in progress; after final completion of work; prior to maintenance or transport | <p>The equipment and accessories should be cleaned by competent, trained operatives wearing suitable PPE and inside a suitable enclosure. Visible traces of dust and debris are removed. Under no circumstances should the unit be dismantled outside the working enclosure.</p> <ol style="list-style-type: none"> 1) Outer case, switches, clasps, casters and handles are cleaned using a class "H" cleaner with a suitable brush attachment and with adhesive wipe. 2) Hose cleaned using adhesive wipes – ensuring no visible dust remains. The ends of the hose should be sealed and the hose should remain connected to the main unit. 3) Equipment then sealed in a suitably labelled, heavy duty bags and the outside of the bags cleaned with an adhesive wipe. 4) Brush attachments are cleaned and bagged as above, or discarded as asbestos waste. <p>Information regarding the hazards associated with the kit must be communicated to any third party being asked to transport or work on unit.</p> | Yes, where cleaning will take place inside an enclosure |
| Transport | As required | The unit will be suitably bagged and labelled or the handler must be able to confirm that external parts have been suitably cleaned. Even if not bagged, the unit should be clearly marked as "containing asbestos" and emergency arrangements must be in place to deal with accidental exposure. | No, but there must be confirmation that external parts are adequately cleaned |

APPENDIX 2: Maintenance of air extraction equipment (Negative Pressure Units)

NOTE – the following table is for guidance and illustration only – decisions should be based on comprehensive risk assessment, taking into account the particular nature of the job in hand (including non-asbestos related hazards) and taking into account manufacturers’ instructions. Where a licence is not required, many parts of the Control of Asbestos Regulations 2012 will still apply, most notably the requirements to prevent exposure and spread (so far as is reasonably practicable).

| Air extraction equipment – negative pressure units (NPU) | | | |
|---|---------------------|--|--|
| ACTIVITY | Frequency | Notes | Licence Required? |
| Visual inspection | Daily (when in use) | <p>As for Class “H” vacs.</p> <p>NPU should not be used inside an enclosure and therefore, the external casing should not be contaminated.</p> <p>The checks should include:</p> <ul style="list-style-type: none"> a) The condition of the pre-filter b) The performance of the unit as indicated by the flow meter/gauge c) The integrity of any ducting in use | <p>No, unless inspections incorporate entry to live enclosures.</p> <p>Such visual inspections are the duty of the “user” and will therefore be generally undertaken by the “full” licence holder.</p> |
| Maintenance | As required | <p>A licence will not be required if access is not required to contaminated parts of the unit: for example if the work is limited to carrying out a DOP test. Following a successful HEPA filter test, it is possible that areas “downstream” of the filter could be considered to be clean. Any work within the casing of the NPU should be subject to risk assessment, taking full consideration of the manufacturers design specification and the manner in which the unit has been used.</p> | <p>No, unless contaminated parts are accessed.</p> |

| | | | |
|---------------------------------|--|---|--|
| Thorough examination and test | 6 monthly | <p>This must establish that the filters are effective, that the integrity of the unit (including electrical integrity) is sound and that the air-flow performance is satisfactory (and the flow indicator is working adequately).</p> <p>If the performance of the unit is different to the design specification, this must be clearly marked on the certification and also on the unit itself.</p> <p>See also notes for Class "H" vacs.</p> | No, unless contaminated parts are accessed. |
| Changing filters or pre-filters | As required | Any work involving contaminated filters and/or contaminated parts of the NPU will take place in a full enclosure and full licensed conditions. | Yes. |
| Cleaning | Before transport/maintenance etc. or at the end of a job | The user of the equipment should take reasonably practicable steps to ensure that the unit is not contaminated. For example, it would be reasonably practicable to remove visible dust and debris from the outer flange/pre-filter area of the unit before fixing the transit cover in place. | Yes, if it takes place inside the enclosure, as part of licensed work. |
| Transport | As required | <p>Transit cover must be securely in place.</p> <p>The unit should be clearly marked as "containing asbestos" and emergency arrangements must be in place to deal with accidental exposure.</p> | No. |

APPENDIX 3: Air extraction equipment in DCUs and labs

NOTE – the following table is for guidance and illustration only – decisions should be based on comprehensive risk assessment, taking into account the particular nature of the job in hand (including non-asbestos related hazards) and taking into account manufacturers’ instructions. Where a licence is not required, many parts of the Control of Asbestos Regulations 2012 will still apply, most notably the requirements to prevent exposure and spread (so far as is reasonably practicable).

| Air extraction equipment – air extraction equipment in decontamination units and laboratories handling asbestos | | | |
|--|---------------------|---|--|
| NOTE – if a DCU is “live” and has not received clearance, it should be treated accordingly: only appropriately trained and equipped staff, with current medicals and working for a licence holder should be allowed to work in these areas. | | | |
| ACTIVITY | Frequency | Notes | Licence Required? |
| Visual inspection | Daily (when in use) | The visual inspection is likely to be limited to checking the unit and associated power cables, switches etc. for signs of damage or wear. | No, unless work has commenced and clearance certification is not available. |
| Maintenance | As required | It may be reasonably practical to remove the extraction unit, in order to work on it within an enclosure under full licence conditions. The act of removing the unit itself is unlikely to cause more than SALI exposure. It will be done under controlled conditions, with appropriately trained operatives wearing PPE (including RPE), but a licence is unlikely to be required. | No - likely to be SALI – but subject to risk assessment and backed up by personal/background monitoring |
| Thorough examination and test | 6 monthly | The scope of the examination and test will be as for NPUs, above. | No – likely to be SALI – but subject to risk assessment and backed up by personal/background monitoring |
| Changing filters or pre-filters | As required | As above. | No – likely to be SALI but subject to risk assessment and backed up by personal/background monitoring |
| Transport | As required | See notes for NPUs and Class “H” vacuums, above. | |