

# JUAC

Joint Union Asbestos Committee

## Asbestos in warm air cabinet heaters - a warning for schools

### 1. Warning

This a warning from the Joint Union Asbestos Committee (JUAC) about the potential for asbestos fibre release from warm air cabinet heaters.

In October 2012 an investigation in a school in Wales found asbestos debris and unsealed and damaged asbestos insulating board (AIB) panels in warm air cabinet heaters. Tests carried out by the Health and Safety Laboratory (HSL) and an independent firm found that asbestos fibres were being emitted from the heaters into the classrooms.<sup>1</sup>

It is important that schools check whether they have these heaters and if they have then whether there is the potential for asbestos fibre release. It must be stressed that the checks to determine whether the heaters are in an unsafe condition must only be carried out by professional asbestos consultants.



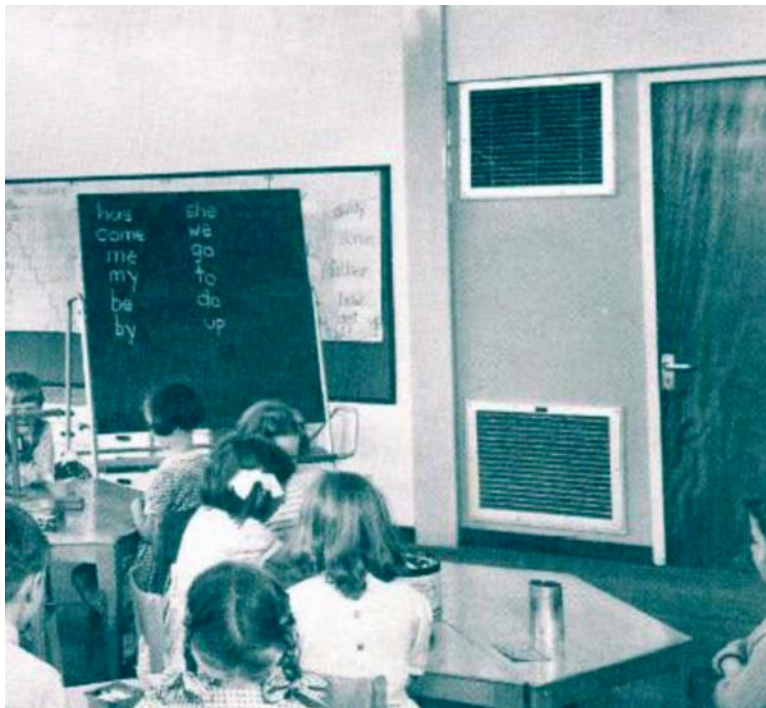
*Free standing Warm Air Cabinet Heater.*

<sup>1</sup> HSL Airborne asbestos concentrations at Cwmcarn High School. Undated (Nov 12) <http://212.48.68.101/~cwmcarnh/index.php/document-downloads?task=document.viewdoc&id=18>. Asbestos Investigation Report Cwmcarn High School, Santia 26 Oct 2012 <http://212.48.68.101/~cwmcarnh/index.php/document-downloads?task=document.viewdoc&id=15>

## 2. Warm air cabinet heaters-background

Warm air cabinet heaters were first developed in the 1950s and became one of the most popular forms of heating schools.<sup>2</sup> The heaters were a standard specification in Mark 2-4 Consortium of Local Authorities Special Programme (CLASP) buildings<sup>3</sup> but they were also fitted in other types of system built buildings and traditionally built buildings.

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, and the baffles to deflect the air were also typically AIB. AIB was specified for the heaters in CLASP buildings until 1968, however cabinets constructed after that could still have used AIB, as it continued to be produced until 1980,<sup>4</sup> although it was gradually replaced by Supalux, an asbestos free board.



*Warm Air Cabinet Heater concealed within a wall*

'Andrews Weatherfoil Ltd' manufactured the heating system and the cabinets were constructed locally on site by carpenters.<sup>5</sup> Although Weatherfoil pioneered the system, there were other manufacturers. A book on the development of school buildings states: *"The cabinets were bulky, the fan motors noisy, and the apparatus needed regular cleaning if*

<sup>2</sup> Towards a Social Architecture. The Role of School Building in Post War England. Andrew Saint 1987 p86

<sup>3</sup> Scape CLASP asbestos handbook Asbestos in CLASP standard details. P11 para 1.02, The CLASP programme provided standard system buildings for a variety of public sector uses but particularly schools. The nature of the construction of buildings erected between 1945 and 1980 included asbestos containing materials, partly recorded as part of the original design.

<sup>4</sup> HSE Asbestos. The Survey Guide. Insulating board p54

<sup>5</sup> Letter HM Principal Inspector of Factories to Principal Architect CLASP ADP/SNC/03 23 Oct 1981

*it was to function properly; later on naughty children bent the bars on the fronts of the grilles.*<sup>6</sup> There are doors to gain access for cleaning and servicing and it is known that in some schools children also gained access to the cabinets.<sup>7</sup> The CLASP asbestos handbook gives details of the heater baffles and casing, and states: *“if damaged, fibres can be readily circulated...”*<sup>8</sup>

The problem of asbestos fibre release from this form of heating has been known since 1981.

### **3. The hazards arising from the release of asbestos fibres – the evidence**

In 1981 it was discovered that amosite (brown asbestos) fibres can be emitted from the heaters. Air sampling by a local authority in a number of CLASP schools identified that amosite fibres were being released at levels up to 60,000 fibres per cubic metre of air (0.06 f/ml ).<sup>9</sup> Later HSE tests sampled levels up to 50,000 fibres per cubic metre of air (0.05f/ml).<sup>10</sup>

In 2012 the series of tests carried out by HSL confirmed that amosite fibres were being released from classroom heaters. Levels of 1,700 to 4,300 amosite fibres per cubic metre of air (0.0017f/ml to 0.0043f/ml) were released when the heaters were running and representative disturbance was carried out. Each occupant of the room would inhale up to 4,000 fibres an hour.<sup>11</sup>



*Unsealed, damaged AIB and debris within a heating cabinet*

<sup>6</sup> Towards a Social architecture. The role of school Building in Post War England. Andrew Saint 1987 p 86

<sup>7</sup> Lees personal communication Feb 2011

<sup>8</sup> Scape CLASP asbestos handbook Asbestos in CLASP standard details. P11 para 1.02

<sup>9</sup> Letter HM Principal Inspector of Factories to Principal architect CLASP ADP/SNC/03 23 Oct 1981

<sup>10</sup> HSE Asbestos in warm air heating systems. (Revised) LAAIC/C 3/5 Health and Safety Commission Aug 1982.

<sup>11</sup> HSL Airborne asbestos concentrations at Cwmcarn As/2012/14 Not dated <http://212.48.68.101/~cwmcarnh/downloads/ions-CwmcarnHighSchool-AuthorisedHSLReport-25January2013.pdf>

The asbestos consultant's report stated: *"Testing has confirmed that there is free asbestos fibre within the heater cabinets. It is also the fact that unsealed asbestos insulating board, which contains amphibole amosite asbestos fibres is present in other heaters and that in one heater cabinet examined there is damaged asbestos insulating board and in another asbestos insulating board debris to the floor of the heater cabinet."*<sup>12</sup>

This particular school had failed to follow the guidance issued in 1982 by the HSE which gave advice how to prevent fibre release:

*"Cleaning out the heater cabinets to remove accumulations of dust (vacuum cleaners suitable for asbestos dust should be used)*

*Replacement of asbestos-containing insulation by asbestos free substitutes (broken panels should be given priority)*

*Sealing of any exposed surfaces of insulation panels with a suitable surface coating (e.g. fire retardant paint), if replacement is not reasonably practical. However replacement with non-asbestos board is very much to be preferred."*<sup>13</sup>

It is not known how many schools followed the guidance, but clearly not all have. One local authority with a large number of CLASP buildings initially sealed the AIB but found that it remained prone to damage, they therefore adopted a policy of removing all the AIB from the heaters.<sup>14</sup>

#### **4. Recommended actions for schools**

The following are recommended actions:

- Identify whether you have warm air cabinet heaters.
- The inspections of the heaters and any remedial actions must be carried by professional asbestos consultants. It is recommended that they are UKAS accredited.
- Inspections and remedial actions must be carried out under controlled conditions.
- JUAC strongly recommends that any AIB within the heaters is removed.
- As asbestos contamination may remain within the cabinets, heating elements or other components the complete unit should be removed if this is the recommended action by the professional asbestos consultant.
- Removal of the AIB panels or complete warm air cabinet heaters must be carried out by a licensed asbestos removal contractor.
- All materials must be disposed of as asbestos waste
- Enter the details of any action carried out in the asbestos register
- If any school staff believe that they are being prevented from taking the appropriate action required, or are concerned about failure to take appropriate action, JUAC would recommend that they contact their trade union for advice and assistance

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<sup>13</sup> HSE Asbestos in warm air heating systems. (Revised) LAAIC/C 3/5 Health and Safety Commission Aug 1982.

<sup>14</sup> Nottinghamshire CC/Lees 19 Feb 2013

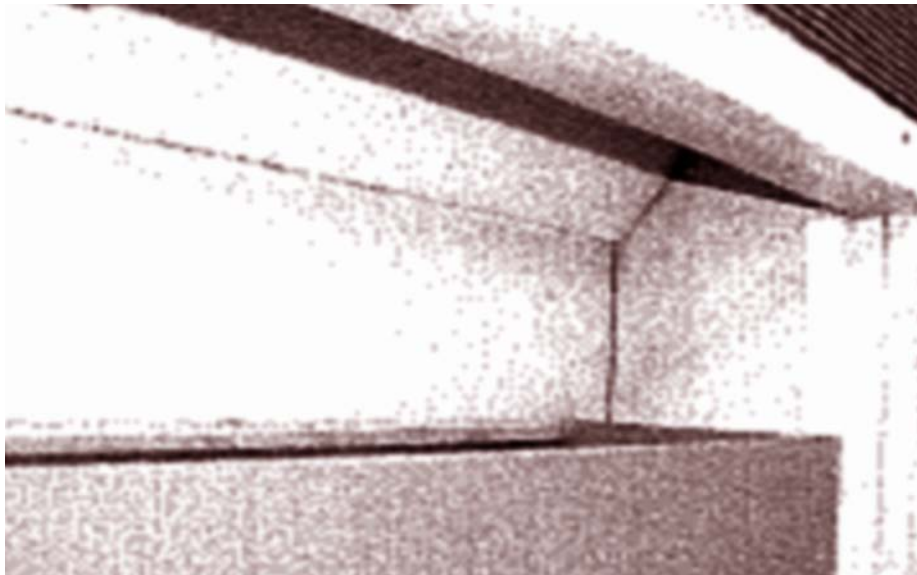
**5. Photographs of typical warm air cabinet heaters**



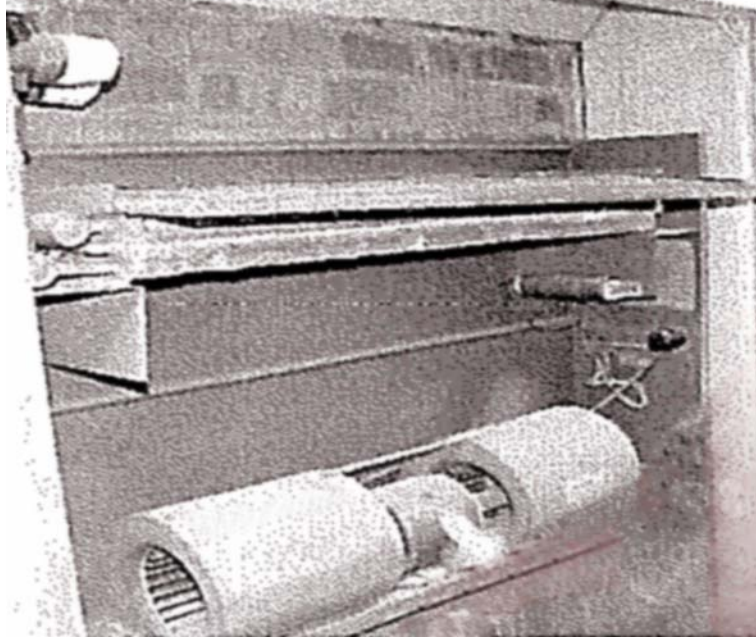
*Base of free standing heater. Note front panels removed for cleaning and maintenance*







*Typically AIB side and back walls and deflection baffle. Warm air is blown across the baffle and deflected through the grill into the classroom.*



*Front of metal case removed showing impeller fans and heating elements*

## 6. Other heaters containing asbestos materials

This warning is specifically about warm air cabinet heaters where the cabinets are fabricated on site, and not about other fan assisted heaters or heaters in general. However other types of heaters can contain asbestos materials, which is more likely if they were manufactured prior to 1975. In certain circumstances, and particularly if they are damaged or disturbed, they can also emit asbestos fibres.<sup>15</sup> The Gas Safe Register published guidance and a list of gas and electrical heaters known to contain asbestos and is at this link.<sup>16</sup> This list is not exhaustive, for instance it does not include Andrews Weatherfoil warm air cabinet heaters.

## 7. Useful Links, resources and information

**Joint Union Asbestos Committee** JUAC consists of the ten teaching and support staff unions that support members in the education sector. <http://www.juac.org.uk/>

The Asbestos in Schools (AiS) group is much wider, including MPs, Unions, employers and experts in asbestos. Both of these groups are working to make schools safe from the dangers of asbestos by raising awareness and promoting effective management of asbestos in schools and other children's settings.

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<sup>15</sup> Department for the Environment Asbestos Materials in buildings. 1983 Heaters para 6.6- 6.8 1986 Electric "warm air" and storage heaters para 7.12 -7.13 . 1991 Electric "warm air" and storage heaters 7.12, 7.13. Department for the Environment Transport and the Regions Asbestos and man-made mineral fibres in buildings Practical guidance Aug 1999 Asbestos in heating systems para 7.1.

<sup>16</sup> Gas Safe Register Technical Bulletin 70. Gas and electrical appliances known to contain asbestos materials. 1 Apr 2009 . <http://www.hse.gov.uk/gas/landlords/1-april-2009-tb-070-gas-and-electic-appliances-known-to-contain-asbestos-containing-appliances.pdf>

**DfE Asbestos management in schools.** Asbestos awareness guidance:

<http://education.gov.uk/schools/adminandfinance/schoolscapital/buildingsanddesign/managementofpremises/b00215518/asbestosmanagementschools>

**HSE Asbestos Management Checklist for schools:** <http://www.hse.gov.uk/services/education/asbestos-checklist.pdf>

**HSE Asbestos management plan:**

<http://www.hse.gov.uk/asbestos/managing/write.htm>

**Asbestos in Schools the Need for Action 2012:** This report, from the All-Party Parliamentary Group on Occupational Safety and Health, investigates the scale of the issue and makes recommendations.

<http://www.unison.org.uk/file/Asbestos%20in%20Schools.pdf>

**Asbestos in Schools** – the scale of the problem and the implications

<http://www.iacoc.org.uk/papers/documents/AiSreportonASBESTOSINSCHOOLS.pdf>

<http://www.asbestosexposureschools.co.uk/>

**Clasp Asbestos Handbook:** <http://www.scapebuild.co.uk/getattachment/Consult/Services/CLASP-Buildings/Building-Systems/ASBinCLASP2010.pdf.aspx>

**Gas Safe Register Technical Bulletin 70. Gas and electrical appliances known to contain asbestos materials.** (The list is not exhaustive) <http://www.hse.gov.uk/gas/landlords/1-april-2009-tb-070-gas-and-electic-appliances-known-to-contain-asbestos-containing-appliances.pdf>

**JUAC**

**In conjunction with AIS**

**18<sup>th</sup> April 2013**