ASBESTOS IN SCHOOLS
The Scale of the Problem in Britain
SCHOOL BUILDING

The graph shows the number of births and schools built over a period from 1900 to 2000. The x-axis represents the years, while the y-axes represent the number of births and schools built. There are three lines on the graph:

- Red line: Births
- Green line: Primary schools
- Violet line: Secondary schools

The graph indicates a correlation between the number of births and the number of schools built, particularly during peak birth years such as the mid-1950s and mid-1960s.
Asbestos in Education

Of the approximate 20,400 primary schools and 3,400 secondary schools in the UK, some 13,000 were built between 1945 and 1974, when the use of ACMs in building was at its peak.

Many other school premises would have been refurbished during or since that period, providing the potential for the introduction of ACMs e.g. lagging, ceiling panels, partition walls, sprayed coatings.

This suggests that a high proportion of our present schools contain asbestos and represent the potential to release deadly fibres.

HSE Paper Number: LAFORUM/04 Forum Asbestos management in schools. 23 Nov 2004

More than 75% of schools contain asbestos
TYPICAL SYSTEM BUILT SCHOOL
46% OF SCHOOLS ARE SYSTEM BUILT
TRADITIONALLY BUILT SCHOOL
Extensive use of Amosite in Schools

Medical Research Council Report 1997

In general, extensive use was made of sprayed coatings (amphiboles), Asbestolux ceiling panels, and asbestos board (amosite) and asbestos-cement partitioning in system-built buildings constructed in the 1960s.

Fibrous materials in the Environment

MRC INSTITUTE FOR ENVIRONMENT AND HEALTH
ASBESTOS TYPES

- CHrysotile White
- Amosite Brown
- Crocidolite Blue

- Causes Mesothelioma
  - Up to 100 Times More Dangerous
  - Up to 500 Times More Dangerous

At exposure levels seen in occupational cohorts

The Quantitative Risks of Mesothelioma and Lung Cancer in Relation to Asbestos Exposure
John T. Hodgson and Andrew Darnton
Sprayed Asbestos School Corridor

Crocidolite Main Type until 1962, Amosite and Chrysotile until 1974
CROCIDOLITE LAGGING.
PRIMARY SCHOOL
Crocidolite used until 1970
Amosite phased out during the 1970’s
Asbestos Insulating Board (AIB)
From 1951 -1980
Mainly Amosite 15-45%
Crocidolite used until 1974
Entire School Population Exposed
Medical Research Council Report  1997

“It is not unreasonable to assume, therefore, that the entire school population has been exposed to asbestos in school buildings.”
A child will inhale ~ 3,000,000 asbestos fibres
12.5 years at school
Asbestos in good condition 0.0005 f/ml (500 f/m³)

A child on average inhales ~ 20m³ of air a day

Summary of inhalation rate studies California Pediatrics 2004
• “There is no threshold dose of asbestos below which there is no risk.”


• “Later exposure adds to earlier exposure.”

• “All exposures are cumulative and contribute to the risk of the development of a tumour.”

  Dr Robin Rudd 1994
“Asbestos which is in good condition and unlikely to be disturbed or damaged is better left in place and managed until the end of the life of the building as this presents less risk of exposure to the occupants than the process of removing it.”
“Schools are not managing their asbestos either effectively or safely.”

“These are not minor problems that have crept in over recent years; rather they are fundamental problems that are endemic in schools in the UK.”

“Over the years the school stock has not been well maintained so that as the fabric of the buildings has deteriorated then so has the asbestos.”
Classroom Radiator
Damaged AIB
Heating Cabinets

“If damaged, fibres can be readily circulated...”

Scape CLASP asbestos handbook

“One of the most popular forms of heating schools”

The Role of School Building in Post War England.

“*If damaged, fibres can be readily circulated...*”

1981

0.06 f/ml

(60,000 f/m³)

Amosite

HM Principal Inspector of Factories 22 October 1981
Classroom Cupboards

Cleaning 0.07 - 0.84 f/ml
(70,000 f/ f/m³ – 840,000 f/ f/m³)

Removing Stationary 0.02 - 0.05f/ml Amosite
(20,000 f/ f/m³ – 50,000 f/ f/m³)
Debris from Drawing pins in AIB
6,600 fibres per drawing pin
0.05f/ml to 1 f/ml
(50,000 f/m³ – 1,000,000 f/m³)
1987.
Kicking AIB Wall \(0.87 \text{ f/ml}\)
\((870,000 \text{ f/m}^3)\)
ASBESTOS INSULATING BOARD.
MATRIX and AMOSITE CLOUD
Handling AIB 1-5f/ml
1987

Slamming a Door Five Times.

0.33f/ml
(330,000 f/m³)
CLASP Steel Columns

2006.

Slamming Doors. Hitting Walls and Columns Sitting on Window Sills

0.44 f/ml
(440,000 f/m³)
Gap in Column Casing
Figure 11: View of base of column from which the casing in figure 10 was removed. A large amount of friable AIB debris can be seen.
SOLUTION?

Missing Silicone Sealant
Column Used as Goal Post
SOLUTION?

Foam Sealing Column Top
Fibres ejected into Ceiling Void 0.72 f/ml  
(720,000 f/m³)
Children at greater risk

Whilst the main risks of exposure to asbestos in schools will be to building and maintenance workers, there will always be the possibility of pupils being put at risk. Due to their physical immaturity they are at greater risk of suffering from asbestos related disease than adults, and will live long enough for any disease to develop.

5 year old child is 5.3 times more likely to develop mesothelioma by the age of 80 than their teacher of 30
School Teachers’ Mesothelioma Deaths

 Gunnar I. Aas (2011) J. Thoracic Oncol., 6, 1045–1056

Mesothelioma can now be added to the list of asbestos-related diseases that affect school teachers. Sweden, with its aging asbestos-affected population and the presence of asbestos in schools, may be a good place to study this phenomenon.

Mesothelioma is an asbestos-induced disease caused by asbestos fibers (inhalation).

Skejelund and colleagues’ paper provides an overview of the asbestos situation in schools in Sweden. The situation has been worsening, with increasing numbers of teachers being diagnosed with mesothelioma.

The authors note that the asbestos fibers are found in many schools and that the teachers’ exposure to these fibers has been increasing over the years.

The authors also note that the number of teachers diagnosed with mesothelioma in Sweden has been increasing over the years.

The authors conclude that the situation is becoming worse and that more research is needed to understand the asbestos situation in schools and to develop effective prevention strategies.

Gunnar I. Aas, M.D., Ph.D.

2011-01-01

References


School support staff are also dying of mesothelioma

- School Caretakers
- School Cleaners
- School secretaries
- Teaching assistants
- School cooks
No Statistics for Children’s Subsequent Deaths

Latency from first exposure:
Average 35-40 years
Low level exposure average 50 years

Therefore there are no statistics for subsequent mesothelioma deaths for children exposed to asbestos at school
Teacher’s Deaths are the tip of the ice-berg

- **USA** Estimated Deaths from Asbestos Exposure at School (1980)
  - For every teacher’s mesothelioma death there would be 9 subsequent children’s deaths.

- **UK** No Official Estimate
  - > 228 School teachers’ deaths since 1980
  - **Proportionately**: 2,000 subsequent Children’s deaths
    (Based on USA estimate)
“The British mesothelioma death–rate is now the highest in the world.”

“Britain was the largest importer of amosite, and there is strong although indirect evidence that this was a major cause of the uniquely high mesothelioma rate.”

HSE Occupational, domestic and environmental mesothelioma risks in Britain. 2009.
IMIG Congress Abstract 25-27 Sep 2008
SOLUTION

USA 1986

• Laws specifically for schools
• Audit of the extent of friable asbestos in schools.
• Assessment of risk to children.
• Mandatory training
• Openness. Inform teachers and parents.
• Regulation
• Funding.

Mesothelioma Incidence 14 per million per annum and stabilised since 1999

Position statement on asbestos

Recommendation:
“An inventory of asbestos already in place is needed, particularly in schools and places where children are present.”
Government review Recommendations:

• “Rigorous, comprehensive, reliable, up to-date and accessible database of asbestos locations.

• “Prioritised removal of asbestos containing materials from government and commercial buildings by 2030.”

“Exposure to children is particularly repugnant. Priority to schools”

Mesothelioma Incidence 28.4 per million per annum
SOLUTION

Poland
2009

Goals 2009 to 2032:

• Inventory of asbestos
• To remove and dispose of products containing asbestos

Mesothelioma Incidence 4 per million per annum

Programme for Asbestos Abatement in Poland 2009-2032
Council of Ministers 15 March 2010

Malignant Mesothelioma: Global Incidence and Relationship with Asbestos
BIANCHI November 2006
Solution
Netherlands
2012

• Risk in schools unacceptable
• Removal of AIB vulnerable to damage from children
• Phased removal of asbestos from schools

Professor Burdorf  Parliamentary asbestos seminar 27 June 2012

• Control limit Present: 0.01f/ml (EU limit 0.1 f/ml)
• Recommended: 0.0003 f/ml
  Environmental level 0.000003 f/ml
  (amphiboles)

Mesothelioma Incidence 30 per million per annum

National mesothelioma incidence Tossavainen 2003
**POLICY**

**Britain**

**2012**

• **AUDIT:** “The Property Data Survey Programme will collect up-to-date information on the building condition of the education estate.”

“Property data surveys will not include an assessment of asbestos.”

[www.parliament.uk](http://www.parliament.uk) Written answer 24th November 2011

• **REGULATION:** HSE will no longer undertake proactive inspections of asbestos management in schools.

Good Health and Safety, Good for Everyone 21 March 2011
The next steps in the Government’s plans for reform of the health and safety system in Britain.
Policy

Britain
2012

“Asbestos which is in good condition and unlikely to be disturbed or damaged is better left in place and managed until the end of the life of the building.”

Mesothelioma Incidence 37.8 per million per annum and rising
Asbestos in Schools Group Propose:

- **Audit** of the extent, type and condition of asbestos in schools
- **Phased removal** of asbestos from schools.
- **Training** should be mandatory.
- **Guidance** specifically for schools
- **Policy of Openness**
- **Pro-active inspections** reinstated.
- **Environmental fibre level** for schools
- **Widespread Air sampling**
All Party Parliamentary Group on Health and Safety:

“This is a national scandal.

Urgent action is needed to prevent more pupils, teachers and other staff being exposed to this deadly killer dust.”

Jim Sheridan MP
February 2012

http://www.asbestosexposureschools.co.uk/pdfnewslinks/APPG%20report%202012.pdf
MESOTHELIOMA
THE PRICE I PAID
FOR TEACHING!
Further Information

www.asbestosexposureschools.co.uk