1. Asbestos usage & legacy issues
Locations, hazards, risks, health effects & death rates

2. Duty to Manage Asbestos
CAR 2012 Reg 4, L143 ACOP, guidance & the precautions you must take to avoid, reduce & manage asbestos.

3. Asbestos Survey types (HSG 264)
Deciding and procuring Asbestos Management or Refurbishment & Demolition Surveys.

4. Duties for normal occupancy, refurb or demolition
Asbestos registers, training, information, communication & CDM 2015 appointments etc.

• Specialist in asbestos & demolition safety management for advice, solutions & training
– Please visit my Web Site
– Allows access to downloads
– Provides updates
www.waynebagnall.co.uk

Asbestos into Manchester Docks c1957

Majority of Asbestos imported, but some small mines in Cornwall!
Asbestos Cement (10 - 15% typical white asbestos)

Non-licensed; needs competent persons to work on this

NNLW = deliberate breakage by remote demolition

Asbestos Cement
Water Pipes / Ducts

Controlled water pipe cutting trials for major water company

Air ducting in hospital theatres; what secures the polystyrene?

Cement spacers to ensure sufficient coverage to the steel reinforcing

Wayne Bagnall Ltd PO Box 41
Birchwood WA3 4FS -
www.waynebagnall.co.uk 07712 767744
Modern non-asbestos fibre spacers

RC + fibre reinforced concrete spacer/tube
NB older spacers are likely asbestos (AC)

Fibre Cement (e.g. glass fibre + OPC)

NON-ACM substitute; available circa 1987 onwards
CAUTION: manufactured alongside Asbestos Cement!

Asbestos rope gasket between glass & glazing bars

100% white Asbestos woven rope gasket

Asbestos friction lining (30 – 70% white asbestos)

Composite (Bakelite)
Asbestos preformed toilet cistern/seat

Typical 5% brown asbestos

Vinyl floor tiles (VFT) typically ~7% white

Asbestos also likely in the adhesive
(NB: If floor screed is to be removed/demolished and AIB or Sprayed coating was used in the building ensure core sampling of the screed)

VFT imperial sizes often indicate asbestos; conversely metric can indicate non-asbestos
BUT analysis needed for survey report(s)
Elec ACMs; AIB, Paxolin, rope, sheathing, Bakelite etc.

100% Asbestos textile flash/arc pads

Can you spot other potential ACMs?

Asbestos insulation "lagging" (up to 90%)

Licensed work; wet applied by hand, check for snots on walls, brackets, ceilings & old removal

Pipe insulation from old pipes that penetrated floors (behind multi-foam) missed by the surveyor

Blue (Crocidolite) asbestos acoustic coating in a Grade 1 listed library ceiling. Very High Risk fibrous material

Any sprayed coating installed >1985 (banned) should be non-asbestos; confirmed by UKAS analyst test(s)

Disturbed blue asbestos (sprayed fire protection) to a steel framed 1960's building. During a recent refurbishment of a renal facility!
Asbestos Insulating Board (AIB) (circa 15% - 40% typically brown asbestos) Often used for heat/fire protection & acoustic attenuation

"Durasteel Ltd" typical fire door (AIB) to switch rooms / sub-stations
Manufactured with circa 25% (white & brown) asbestos core until 1978
>1978 believed to be asbestos free, but always check particularly if old or no records

Asbestos Insulating Board (AIB)
(circa 15% - 40% typically brown asbestos)

Often used for heat/fire protection & acoustic attenuation

Chrysotile fibre bundle (image magnified 600x) exposed surface of a weathered cement sheet
Amosite fibre bundle (image magnified 2000x)
Individual Amosite fibres ~ 1 μm (micron) diameter

Compare the above to this Human hair (image magnified 1200x)
Thickness 75 – 150 μm diameter

Chrysotile fibre bundle (image magnified 600x) exposed surface of a weathered cement sheet
Amosite fibre bundle (image magnified 2000x)
Individual Amosite fibres ~ 1 μm (micron) diameter

UK Deaths from asbestos related diseases

TODAY
• ~5,500 deaths / year
• >No. killed on our roads / year!
• Disease can take from 10 to 60 yrs
• Smoking = risk x 50+

Predicted by Professor Julian Peto
Inst of Cancer Research & HSE

By 2025 – 2035
• ~10,000 deaths / year

Projection of UK annual Mesothelioma deaths


By 2025 – 2035
• ~10,000 deaths / year

Projection of UK annual Mesothelioma deaths

2. Duty to Manage Asbestos
CAR 2012 Reg 4, L143 ACOP, guidance & the precautions you must take to avoid, reduce & manage asbestos.

The Control of Asbestos Regulations 2012
NB: These apply to all ACMs - see L143 ACOP


1. Dutyholder definition & duty
2. Cooperation with Dutyholder
3. Suitable & sufficient assessment
4. Assess condition of asbestos
5. Plans & age of building
6. Assessment review
7. Assessment records
8. Risks, plans & measures
9. Management plan
10. Review, update & implement

Note 1: Dutyholders’ have a ‘duty to manage’ asbestos in all non-domestic premises

Dutyholder means:
- Person(s) responsible for maintain or repair or control access or egress in non-domestic premises
- Can include the Principal Contractor (site security etc)
- Where more than 1 Dutyholder = duty is shared

Note 2: Communal areas in domestic premises are included as these areas are classed as non-domestic

CAR 2012. 10 steps; Reg 4. Duty to Manage (21.5.04)

1. Determine if asbestos is present then:
   - Consider the risk & identify ACMs & on plan
   - Measures for managing risks
2. Plan for managing ACMs shall include:
   - Monitoring condition, maintain or safely removed
   - Communicating location & condition of ACMs to:
     • Any, or every person liable to disturb it
     • Including the Emergency Services (emergencies only)
   - Ask the duty holder for asbestos information (duty to manage since 5.2004) & if in doubt STOP!
For any pre 2000 building / Plant / Equipment:

1. **Ask** (asbestos survey info)
   - Is there an Asbestos Register & compliant Asbestos Survey?
   - Is there asbestos in the area, or equip etc where you are working?
   - Is the ACM location labelled, what type, form & condition is it?

2. **Think** (plan the work)
   - Is it safe to enter the area, what are the risks (left undisturbed?)
   - Has everyone received at least Asbestos Awareness Training
   - What is needed, is it high risk (licensed) or low risk (non licensed)

3. **Do** (manage the works)
   - Non Licensed (low risk) use HSG 213/210, it may be NNLW
   - Licensed (high risk) requires 14 day notice from a LARC
   - Ensure effective control measures & independently monitor
   - After asbestos removal there is remaining ACM risk (vigilance)

Post 2000 make reasonable enquiries on asbestos

In Summary

- The Control of Asbestos Regulations were introduced in 1987
- Currently the Control of Asbestos 2012 (Reg 10. Training)
- Training to the ACOP and is it to a recognised standard e.g. UKATA?
- Asbestos was banned in the UK on 24 Nov 1999
- Asbestos analysis for ACMs have to be UKAS ISO 17025 (11.02)
- The Duty to Manage asbestos was introduced 21 May 2004

### HSG 264 - Asbestos: The survey guide

1. HSG 264 2nd edition 2012 (replaced MDHS 100)
2. Two surveys options:
   - Management survey (normal occupancy conditions)
   - Refurb & Demo survey (abnormal, refurbish or demolition)
3. Competency / SKTE (≡CDM 2015)
4. No unreasonable or generic caveats e.g. No access?
   - (assume ACMs present & arrange access later)
5. Consultation for NEW HSG 248 (due 2019)
   - Analysts guide; ACM in soil & 4 stage clearance

### Asbestos Survey types (HSG 264)

**Deciding and procuring Asbestos Management or Refurbishment & Demolition Surveys.**

1. Wasps or Bees
2. Basements dark & debris
3. Plant room guano
4. Live electrics
HSG 264: Material assessment algorithm

- 4 main parameters = potential fibre release:
  1. Product
  2. Damage or deterioration
  3. Surface treatment
  4. Asbestos type

- Each parameter is scored, range 0 to 3
  - Max score = 12 (min 2)

- No change from MDHS 100; which is withdrawn
- See appendix 4 in HSG 264 (p67)

HSG 264 = fibre (hazard) score max 12

HSG 227 Priority Assessment

- 4 parameters: occupancy & vulnerability priority
  5. Occupant activity
  6. Likelihood of disturbance
  7. Human exposure potential
  8. Maintenance activity

- Score 0 to 3 per parameter
  - Max score per parameter = 3
  - Average sub parameters (e.g. 1 + 2 + 3 = 6 = 2)
  - Max score = 12 (HSG 227) = 3

Material Fibre Score + Priority Assessment = Overall risk score (24)

- HSG 264 = fibre (hazard) score max 12
- HSG 227 = priority (risk) assessment max 12

HSG 264 + 227 = Overall risk factor max 24

Used as part of the arrangements to understand, prioritise & manage the asbestos.

Practical elements

- Training aid developed for my 2 day Asbestos Management Training

- Enables a better understanding of fibre scores & priority assessments

Asbestos, (12)
Survey Checks

Positive Indicators (HSG 264)

- Competence & experience
- Accreditations
- Qualifications
- RA/MS & air tests
- Surveyor(s)
- Report content
- Photographs
- Plans
- Format

Negative Indicators (HSG 264)

- What type of survey are you doing? Is it a decompartmentalisation?
- Is it a multidwelling unit?
- Is it a commercial building?

Practical elements

- Training aid developed for my 2 day Asbestos Management Training

- ‘Surveyors & Survey Health Checks’

- Helps before appointing asbestos surveyors or checking the adequacy of existing asbestos surveys
Demolition of a 1950’s commercial building

Example of a “poor” asbestos R&D survey
By a non-UKAS accredited (ISO 17020) company

Missed contamination in floor screed, blue asbestos from fire protection for the steel frame during construction.

Asbestos cement shuttering throughout all floors, above non-asbestos fibreboard ceilings.

Asbestos contamination during demolition soft-strip resulted in AIB being disturbed = HSE intervention.

1950’s steel framed building Asbestos missed, R&D Survey undertaken with building occupied!
4. Duties for normal occupancy, refurb or demolition
Asbestos registers, training, information, communication & CDM 2015 appointments etc.

CAR 2012; Reg 4. Duty to Manage (21.5.04)
1. Asbestos Management should consider:
   - Registers (data bases) of information with automatic reminders (re-inspections)
   - Asbestos policies, surveys, registers, training, work with asbestos etc
   - Are you able to integrate into your existing systems e.g. legionella etc
   - Administration for easy (controlled) access & update with any changes
   - Users be able to have easy navigation & extraction of information

2. Proprietary Asbestos Management Systems, inter alia:
   - https://www.start-software.com/about-us/
   - https://www.acmsuk.com/
   - https://www.askams.co.uk/2012/01/05/asbestos-management-software/
   - https://www.assurityconsulting.co.uk/services/asbestos
   - https://www.teams-software.co.uk/WebPortal.aspx
   - https://www.micad.co.uk/solution/ipr-3-5/asbestos-software/

Managing asbestos, survey types & building age risks

Asbestos Register compiled from (several) Asbestos Surveys; must record all known ACMs, removal work, re-inspections & be available!
Unique ID, location, material + priority score, inspection frequency, actions

If you wish to know more, need help or training, please email me: mwb@waynebagnall.co.uk or tel: 07712 767744 - thank you

Wayne Bagnall MBE
MSc CMIOSH MIDE MCMI

Extract HSG 210; EM1 what to do if you uncover ACMs