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Guidance paper on Mould Management

This paper provides practical information and advice on managing and controlling mould risks and hazards. The paper is written by Jeff Charlton a recognised and leading UK mould expert in assessments and remediation.

What is Mould and What Are the Health Issues?

Mould represents Earth's most extensive life form, serving as an organic material decomposer long before humans existed. It thrives in damp conditions but not overly wet environments. Mould faces competition from over 200,000 species, plus bacteria which can grow faster than moulds. These life forms compete at times and produce chemical secondary metabolites. Bacteria produces Streptomyces which is used to treat fungal infection and Penicillium used to treat bacterial infections. In homes and buildings these chemical toxins may be at extremely high levels affecting occupants health.

Key Points from the Paper:

Ubiquity of Moulds:

- Mould spores are present in every breath humans take, with most people having developed immunity to numerous mould species.

Conditions Favouring Toxic Moulds:

- Poorly ventilated and damp homes, cavities and voids create ideal conditions for toxigenic mould species, which are typically below detection levels under normal circumstances in ambient air

Specific Risks from Mould Species:

- The genus *Aspergillus* is common worldwide, but specific species like *Aspergillus fumigatus* can cause severe, potentially incurable lung diseases. It's the specific species, not just the genus, that poses significant health risks, with less than 30 species recognized as concerns in residential settings.

Health Issues and Recognition:

- Despite scepticism from some healthcare professionals, toxicologists and specialist medical practitioners recognise the health impacts of mould, supported by over 120 peer-reviewed studies. The World Health Organization (WHO) acknowledges that even dead mould poses significant health hazards, potentially more so than live mould. Exposure to hyphal fragments is assessed at 40-fold the dose according to WHO.

Visible normal mould issues



While unsightly, mould on ceramic tiles is not a major health risk and should be simply washed off by tenants.

Minor mould removal should be considered day to day maintenance such as cleaning windows or kitchen surfaces.

Legal Frameworks and Landlord Duties Regarding Mould



Housing Health and Safety Rating System (HHSRS) 2004:

- This guidance document is a critical tool used to evaluate potential health and safety hazards in residential properties, including risks associated with mould, HHSRS shouldn't be used for biological assessments.

HHSRS Operational Guidance



The Operational Guidance Not to be Used for Biological Assessments

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The guidance also
recommends professional
judgement.

(NOT logarithmic calculations)

Healthy Homes 2024

Landlord Responsibilities:

- Landlords are legally required to provide a safe living environment for tenants, which includes proactive measures against mould growth.
- The legislation has been structured to simplify the process for tenants to take legal action against landlords who fail to meet these standards.

Proactive Property Checks:

Landlords must not solely rely on tenants to report issues; they are required to regularly inspect properties to ensure that they meet safety standards.

Awareness and Compliance:

It is crucial for landlords to be well-informed about current legislation, as failure to comply can lead to long-tail (historic) claims, which might result in significant legal consequences in both civil and criminal court. The author recently gave evidence against a landlord in civil court which the judge escalated to criminal court.

Mould Prevention through Moisture Control

1. Cause of Mould:

- Mould development is directly linked to moisture levels within a building. Effective moisture management is the key to preventing mould growth.

2. Moisture Control Strategies:

- **Source Control:** Identifying and addressing sources of moisture, such as leaks or high humidity areas.
- **Dilution and Removal:** Utilising ventilation systems to dilute and remove moist air, especially in areas prone to high humidity like kitchens and bathrooms.

3. Common Failures in Moisture Control:

- Inadequate extract fans and overall poor ventilation are typical problems that lead to excessive indoor moisture.
- Issues like rising damp or penetrating damp also contribute to moisture problems.
- Dewpoint condensation is becoming a more significant issue, exacerbated by fuel poverty, where reduced heating leads to colder surfaces and condensation.

4. Construction or Design defect

- While construction and design defect are often responsible for mould, improvements which are unsympathetic can be major contributors.
- These moisture-related issues are often rectifiable with proper building maintenance and upgrades to ventilation systems.

Moisture Control Strategies

The connection between moisture control and mould prevention is crucial and clear. Effective moisture management can significantly reduce the likelihood of mould growth in buildings. Here's a more detailed look at the strategies and challenges mentioned:

Control at the Source:

The most effective way to prevent mould is to eliminate or control moisture sources within the building. This could include fixing leaks, ensuring that water from the exterior (such as rain or groundwater) does not enter the structure, and managing internal sources of moisture like bathrooms and kitchens.

Dilution and Removal of Moist Air:



- Ventilation plays a pivotal role in moisture control. Properly designed and maintained ventilation systems, particularly extract fans in high moisture areas (e.g., bathrooms, kitchens), help remove moist air before it condenses on cooler surfaces.
- Regular maintenance and checks of these systems are essential to ensure they function effectively and do not contribute to humidity buildup.

Common Failures and Issues

Inadequate Ventilation:

One of the most common issues leading to mould is inadequate ventilation, where extract fans are either not powerful enough or completely absent, allowing moisture to accumulate.

Rising and Penetrating Damp:

Structural problems can allow moisture to enter from the ground (rising damp) or through walls (penetrating damp). These issues require structural solutions like damp-proof courses or more extensive waterproofing measures.

Dewpoint Condensation due to Fuel Poverty:

In situations where heating is insufficient due to economic constraints (fuel poverty), cold surfaces become a prime site for condensation. This condensation can then lead to mould growth, particularly in colder months.

Remediation

Simple and Effective Solutions:

Often, the solutions involve improving heating and insulation, installing, or upgrading ventilation systems, and addressing any structural issues that allow moisture ingress.

Managing moisture effectively not only helps in preventing mould but also contributes to a healthier indoor environment and can prevent potential structural damage over time. If you're dealing with a specific situation or need more detailed advice on mould prevention strategies, I'd be happy to delve deeper into those topics!

Tenants' failures

While landlords are invariably the target of court judgement, the tenant has major duties and courts should be informed of these failures, when evidence exists.



Typically, landlords defence of mould growth is the tenant cooked peas and potatoes without a lid on the saucepan. Drying wet clothes on a hot radiator and failure to notify the landlord of visible mould growth are used as defence but none are realistic and of course it's a landlord's duty to inspect the home. These defence issues can be refuted but the liability of landlords can easily be proven if management systems were not employed.

The Medical issues

The WHO have stated mould is the great masquerade of the 21st Century because so many illnesses are misdiagnosed and are likely to be mould related.



These documented health risks include:

- Alzheimer's
- Parkinsons
- Chronic Fatigue Syndrome
- Irritable Bowel Syndrome
- Brain Fog
- Respiratory and skin issues, hair loss
- Gynaecological issues

The deaths of Awaak Ishak and Luke Brooks said to be from mould, showed at Coroners Court to be caused by inflammatory response not the Aspergillus identified on walls.

Inflammatory response is now seen the major health issue, and this emanates from dead mould and hyphal fragments.

While the health risk of mould is a growing concern, bacteria may actually be the greater risk and responsible for many symptoms, which few recognise.

Medical Evidence

The public have since COVID, become self-treating "Google" medical experts and generally turned from conventional medicine to specialist laboratories and functional medicine and toxicologists.



The diagnosis of CIRS (*Chronic Inflammatory Response*) is now relatively easy and can be indicated or confirmed by low-cost blood or urine tests. Exposure to inflammagens is now seen as a major health risk which can be confirmed by both symptoms and evidence of presence using scientific analysis such as PCR-DNA.

Triage in Mould management

Landlords may be inundated with complaints from tenants regarding mould. With limited response capability there is a clear requirement for “triage assessments” where response priority is identified.



An example could be a complaint about mould on a bathroom wall and a complaint from a OAP undergoing long term medical treatment. Landlords cannot make medical judgement but they must prioritise response when faced with limited assets.

Mould Treatments and the challenge

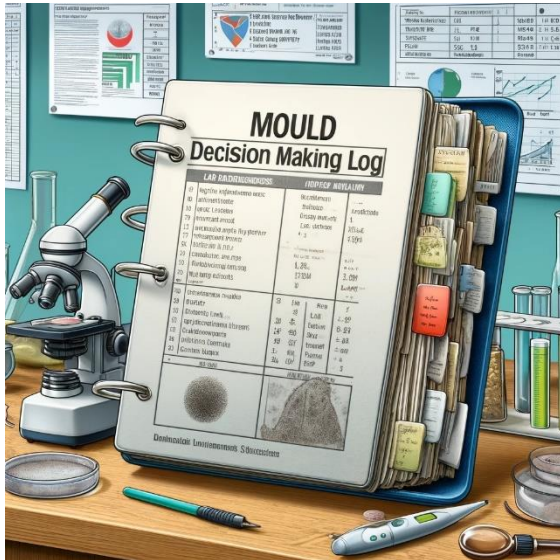


Mould treatments don't work and trying to kill always results in greater health hazards. REF WHO

All chemical and gas treatments increase occupants' health risks, and NONE have any benefits. This is a very big statement from UK's leading expert but is made with supportive data.

Decontaminating and reducing mould risks

Attempting to treat mould is pointless unless remediation has been undertaken to remove or mitigate causation. The survey of an Indoor Environmental Hygienist is the most significant of all actions in mould management. Normal surveys have serious limitations, but the IEH has trained in this specialist field.



Decontamination and risk reduction requires remediation and causation remediated followed by decontamination of both air and surfaces. This could include contents but only investigation and data will provide the scope of works. Without DATA everything is a guess and with legislation and legal ramifications increasingly likely, landlords defence revolving on a guess is unlikely to be accepted in court.

Mould Decontamination Objectives

Possibly one of the least understood issues. Kill or remove mould, decontaminate air, or surfaces from what? There are over 30 significant risks and hazards possibly present which can cause the symptoms many react to. Different risks and hazards may require differing protocols.

Data Driven objectives and verification.

Prior to embarking on a mould remediation project, the following should be considered:

What is the hazard?

What is the risk?

Is it airborne or surface ?

Is it viable or non-viable?

What is the causation?

What is the most economical solution?

What is the data evidence for action?

What is the evidence and data for completion and risk reduction?

The reality is, most just ask cost of works.

Managing tenant Mould Risks from only £1 per day

While landlords have a duty to inspect their property this can be time consuming and unfortunately only reflects environmental conditions on the day and one moment in time.

New cloud technology can provide affordable remote monitoring with automatic alarm and reporting. Monitoring can identify risks and tenant failures and possibly expensive and preventable repairs.



Building Forensics provide consultancy and installation of remote monitoring and perhaps more importantly record pre and post tenancy mould conditions and the possible transfer of responsibility.

Low-cost installation and monitoring form just £1 per day.

Comparison of professionals

This section reviews the different approach to mould surveys between a person who takes a two-day course on HHSRS and a professional Indoor Environmental Hygienist who may take years to qualify.

The HHSRS survey

The HHSRS is 29 specific risks and hazards with training in the assessment usually taking 2 days to cover the regulatory compliance. The HHSRS specifically states its use may require support from professional judgement. The HHSRS also states in its operational guidance Not to be used for biological assessments therefore as biological exposure is the main issue of mould hazard it appears to be worthless, other than an aesthetic assessment.

The HHSRS inspection is purely visual and even when mould is identified the landlord is usually given an improvement notice and 21 days or more to remove the visual damage. There is no measurement, sampling, or scientific assessment regarding this biological hazard. The HHSRS cannot provide an assessment of hazard or exposure routes, or take into account individual risk profiles.

The professional IEH

The IEH will review the health complaints of occupants and identify highest risk areas of exposure. Visual assessment of current and historic water damage. Particle counts and Infra-red scanning, moisture mapping followed if necessary, with biological sampling. The sampling program will follow a hypothesis developed during the survey but will normally assess:

- Airborne risks
- Surface risks
- Viable and Non-viable mould
- Bacteria
- Possible chemical assessment (VOCs)
- A full report with causation identified risk factors and recommendations for remediation.
- Depending on health implications and levels and types of contamination identified a decontamination program may be proposed.

Is the property safe or contaminated?

This section simply reflects on questions that are asked without real understanding of the relevant issues. The answer will depend on who's asking the question. The sample questions indicate some of the issues of general misconception.

The landlord

Does the property have mould?

The Environmental Health Officer

My calculation using HHSRS shows no mould risk

The tenant

I have got sick since moving into the property, is mould the cause?

The doctor

Is mould present that could cause the respiratory issues of my patient?

The defence Solicitor

Is the property compliant to legislative requirements?

The Prosecution Barrister

Can you verify the property is not contaminated and have you evidence in the form of data?

Functional medicine doctors.

Can you identify the contaminants in the home currently present in the blood and urine of my patient.

The toxicologist

Can you identify the presence of DNA associated with bacteria and mould possibly responsible for symptoms?

The professional Indoor Environmental Hygienist

How much do you want to spend on identifying relevant contamination in which areas and to what certainty?

Risk manager!

Do results reflect contamination in the air, or on surfaces?

The Insurance company

Is the contamination identified from current or historic water damage or is it the result of incompetent remediation?

The property owner

Were the people that provided these answers qualified and certified competent?

The Health and Safety Professional

Do the levels of exposure exceed national guidance or recognised standards?

The property owner

Does the managing agent failure put me in court ?

Questions for the reader from the author Jeff Charlton

After reading this paper there may or may not be confusion but a simple question exists. "Who is responsible for the cost or failure" when being the buck stops?

The contractor or the person who should have verified the competence and qualifications prior to issuing the works. This responsibility as the high court has stated falls on the shoulders or guiding influence of the organisation, usually CEO or Managing director.

This action alone is required in law under section 2 & 3 of the Health and Safety at Work Act.

Without data everything else is a guess but unfortunately a bad guess can result in serious health, financial and legal consequences.

While the cost of managing a property properly may seem high it can result in lower running costs in terms of complaint management, remedial actions, quite apart from increasingly likely fines and penalties.

Building Forensics have spent 40 years in the business and have supported parliament, government agencies, insurers, companies, and individuals. Were here to assist and can provide alternatives and answers others have yet to recognise.

End

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