



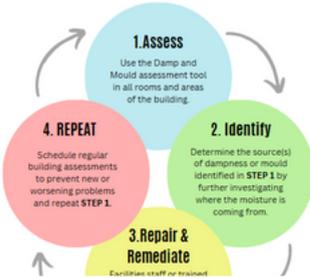
IAQ SAMPLING INFORMATION BOOKLET



Introduction

Damp and mould assessment tool

Assessment cycle



Air sampling is essential for monitoring indoor air quality. It involves collecting air samples to test for pollutants, allergens, and contaminants. The samples are analysed in a lab to identify potential health risks and ensure compliance with regulatory standards.





INDEX

Table of Content

01

HHABIAQ Surface Dust
Analysis via Tape Life

03

qPCR Mould DNA
Analysis

05

IAQ home air check -
TMVOC/TVOC

07

Air-O-Cell Mould Spore
Cassette and Analysis

08

Smart HVAC IAQ
Monitor

09

What are the costs?

11

Conclusion

Surface Dust Analysis via Tape lift



Surface dust analysis via tape lift is a straightforward and effective method for collecting and analysing settled dust from various surfaces like furniture, floors, walls, and carpets

This comprehensive analysis helps in understanding the composition of dust in an environment, which can be useful for health assessments, cleaning protocols, and identifying potential sources of contamination.



What does a Surface Dust Analysis identify?

1. Mould Spores: Different types of mould spores can be detected, which is crucial for assessing indoor air quality and potential health risks.
2. Fibres: These can include synthetic fibres from carpets and clothing, as well as natural fibres like cotton or wool.
3. Biological Materials: Pollen, skin cells, and insect parts are commonly found in dust samples.
4. Inorganic Particles: This category includes dust from construction materials, soil, and other inorganic sources.
5. Combustion Residue: Particles from smoke, soot, and other combustion processes can be identified.
6. Insects and Arthropods: Fragments of insects and other small arthropods are often present in dust

ENVIRONMENTAL ANALYSIS ASSOCIATES, INC. - 306 5th Street, Suite 2A - Bay City, MI									
SURFACE MOLD & DUST ANALYSIS									
(Mold and Dust Comparison Summary - Cts/mm ²)									
Client Name : Enthality Analytical									
Project # : 116834									
Project description : Not Specified									
Requested by : Not Specified									
EAA Project# : 24-2771									
Mold					Fibrous Dust				
Spores + Total	Aspergillus / Penicillium	Chromi W.I. Fungi	Outdoor Spores	Hyphae Fragments	Pollen	Skin cell Fragments	Min. wool / Fiberglass	Cellulose / Synthetic	
41.7			41.7			282.0		24.5	
21.8			21.8			210.0		41.8	

Values are rounded to 3 significant figures. As a result, individually summed mold categories may appear slightly different than the "Total" value. W.I., include the genera Chaetomium, Stachybotrys, Ulocladium, and Trichoderma. The hyphae fragments category includes hyphae (mycelium) for clarity, cells where the particle category was not detected are intentionally left blank.

Analyses by EAA and shall not be reproduced except in full without the written approval of EAA. The sample descriptions and volumetric data are provided by the client. The dust particle count (Cts/mm²) measured by EAA is over 750 commercial and residential comparison with levels measured on your project. The laboratory test results are reviewed by a qualified environmental professional. The local backgrounds and site specific options or conclusions as to whether or not the concentrations measured by EAA are within acceptable limits are provided by EAA.

- health risks associated with dust particles:
- Respiratory Issues: Dust can trigger asthma, COPD, and silicosis.
 - Cardiovascular Problems: Fine dust particles can increase the risk of heart disease and stroke.
 - Allergic Reactions: Dust mites and pollen can cause allergies.
 - Lung Cancer: Prolonged exposure to certain dust types, like asbestos, can lead to lung cancer.
 - Airway Irritation: Dust can cause coughing and breathing difficulties.

Minimizing dust exposure is important, especially for vulnerable individuals.

qPCR Mould DNA Analysis



Quantitative Polymerase Chain Reaction (qPCR) mould DNA analysis is a molecular technique used to detect and quantify specific mold species by amplifying their DNA.

qPCR is used in environmental monitoring, indoor air quality assessments, and health risk evaluations. It helps in identifying mould contamination and assessing its potential impact on health

This method is highly sensitive and specific, making it a valuable tool for mould analysis



What types of mould can be identified with qPCR



qPCR (Quantitative Polymerase Chain Reaction) can identify a wide range of mould species with high specificity and sensitivity. Some of the common moulds that can be detected include:

- Aspergillus species:
 - Aspergillus fumigatus
 - Aspergillus niger
 - Aspergillus versicolor
- Penicillium species:
 - Penicillium chrysogenum
 - Penicillium brevicompactum

Stachybotrys chartarum: Often referred to as "black mould," it is known for its potential health risks.

Chaetomium globosum: Commonly found in water-damaged buildings.

Cladosporium species: Includes Cladosporium cladosporioides and Cladosporium herbarum.

Alternaria alternata: A common allergenic mold.

Wallemia sebi: Often found in indoor environments

These are just a few examples, and qPCR can be tailored to detect many other mould species

This method is highly effective for environmental monitoring and assessing indoor air quality.

Address tested: [Redacted] 2024

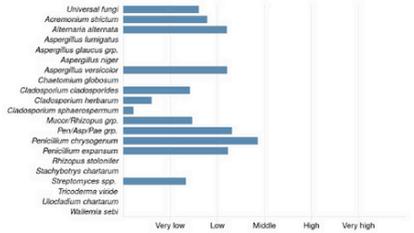
HHB 001 Void between upper and lower bathrooms



B Our analysis shows that there are slightly elevated levels of some species of mould in the sample. However, there are low levels of mould species that typically grow in damp indoor environments. This means that the fungal material found in the sample is likely to have accumulated in the building's dust having come into the building from outside. The indoor air quality of the building is therefore unlikely to be affected by hidden mould growth.

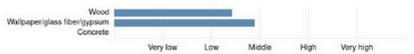
Weighted distribution

Profile of the sample analysed. Values are normalised against a database of mould levels found in samples taken both from sound buildings and buildings with known moisture damage.



Materials

Different mould species have different preferences with regards to habitat. The species composition of a sample can therefore indicate which materials the mould is likely to be growing on.



HHABIAQ IAQ Home Air Check – TMVOC/TVOC



A specialised air sampling pump and a sorbent tube are used to collect air samples. The pump draws air through the sorbent tube for a specified period of time to ensure a representative sample of the indoor air. The volume of air sampled is measured and recorded. After the sampling period, the sorbent tube is sealed and sent to a laboratory for analysis.

The IAQ Home Air Check Survey can detect a variety of contaminants, including:

Volatile Organic Compounds (VOCs): These are chemicals emitted from products like paints, cleaning supplies, and building materials.

Mould VOCs: Specific compounds produced by actively growing mold.

Formaldehyde: A common indoor pollutant from building materials and household products.

Tobacco Smoke: Residue from smoking can be detected if this option is selected.



What are the Health Effects?



Health effects of the contaminants detected by the IAQ Home Air Check Survey:

Volatile Organic Compounds (VOCs):

Short-term: Eye, nose, and throat irritation; headaches; dizziness; nausea

Long-term: Damage to the liver, kidneys, and central nervous system; some VOCs are linked to cancer

Mould VOCs:

Short-term: Respiratory issues, allergic reactions, and asthma exacerbation

Long-term: Chronic respiratory conditions and potential immune system effect

Formaldehyde:

Short-term: Irritation of the eyes, nose, and throat; coughing; skin irritation.

Long-term: Increased risk of cancer, particularly nasopharyngeal cancer.

Tobacco Smoke:

Short-term: Respiratory irritation, reduced lung function, and exacerbation of asthma.

Long-term: Increased risk of lung cancer, heart disease, and chronic obstructive pulmonary disease (COPD).

Minimizing exposure to these contaminants is crucial for maintaining good indoor air quality and protecting health.



Client Sample ID: Master Bedroom
Laboratory ID: 116834-2



Client Sample ID: Master Bedroom
Sample Volume (L): 24.0
Date Sampled: 05/11/2024
Sample Type: TDF A3315 Temp: 16.7°C Humidity: 57.4%

Receive Date: 03/12/2024
Approve Date: 04/12/2024
Scan Date: 04/12/2024
Report Date: 05/12/2024

IAQ Home Survey™ is one of the most advanced, trusted air testing products on the market today for identifying chemical sources and active mould growth in a home. Many indoor air quality (IAQ) issues identified by IAQ Home Survey can be easily remediated or eliminated. This test is an invaluable tool for homebuyers, homeowners, and renters because it provides important information on potential contamination issues in the home that cannot be detected by a visual inspection alone. Acting upon the information in this report will enable you to dramatically improve the air quality in your home, creating a healthier environment for your family.

our Indoor Air Quality Report Summary

our Indoor Air Quality Report has several sections describing different aspects of your home's air quality. A summary of this data is provided below, additional information and descriptions are included in the full report.

total Volatile Organic Compounds (TVOC) Level

TVOC is a general indicator of the IAQ in your home (see page 2). Total VOCs 640 µg/m³

total Mould Volatile Organic Compounds (TMVOC) Level

TMVOC is an assessment of the actively growing mould in your home (see page 3). Total MWOCS 8 µg/m³

contamination Index (CI) Level

The CI shows the types of air-contaminating products and materials that are present in your home (see pages 7, 8, and 9). These results are estimates based on common home products and activities.

Identifying Related Sources	Mixed Building and Lifestyle Sources	Lifestyle Related Sources
See page 7 for more detail.	See page 8 for more detail.	See page 9 for more detail.
Coatings (Paints, Varnishes, etc.)	Building Materials-Toluene Based	Personal Care Products
PVC Cement	Gasoline	Alcohol Products
HFCA and CPFA (FreonTM)	Fuel Oil, Diesel Fuel, Kerosene	Odorants and Fragrances
	Moth Balls (Naphthalene Based)	Dry Cleaning Solvents
	Moth Crystals (p-Dichlorobenzene Based)	Medicinals
	Light Hydrocarbons	
	Light Solvents	
	Methylene Chloride	

Note: Severity levels begin at Normal or Minimal and progress through Moderate, Elevated, High and/or Severe. The color progression from green to red indicates results that are increasingly atypical and suggest potentially higher risk.

Green Moderate Elevated High Severe

Enthalpy Analytical, LLC (MTP), the creator of IAQ Home Survey, has been performing air quality assessments to industry and environmental markets since 1995. Enthalpy Analytical, LLC (MTP) (ID: 116527) is accredited by the AIAA Laboratory Accreditation Program (ALAA-LAP), LLC the Industrial Hygiene Accreditation Program for GC-MS Field of Testing as documented by the Scope of Accreditation Certificate and associated scope. This analysis references methods EPA TO-17 and ISO 16000-4, which fall within the Scope of Accreditation.

Air-O-Cell Mould Spore Cassette and Analysis



The Air-O-Cell is a specialised sampling cassette used for collecting and analysing airborne particles. It can capture both viable and non-viable particulates, including:

- Mould Spores
- Pollen
- Insect Parts
- Skin Cell Fragments
- Fibres (e.g., asbestos, fiberglass, cellulose)
- Inorganic Particles

This tool is valuable for assessing indoor air quality and identifying potential contaminants in various

The Air-O-Cell offers several advantages:

Excellent Detection Limits:
Superior to conventional filter sampling using 25 mm or 37 mm diameter filter cassettes.

Convenience: No need for direct handling or preparation of collection media or microscope slides in the field.

Reduced Cross-Contamination:
Minimizes the risk of cross-contamination between samples and during shipping compared to other devices.

These features make it a reliable and efficient tool for air quality assessments.



FOR CIRS - ERM1 & HERTSMI-2



ERMI is the Environmental Relative Mouldiness Index. Based on leading scientific technology, Quantitative Polymerase Chain Reaction (MSQPCR), the ERMI has brought to light the darkness of indoor mold testing.

ERMI is an objective, standardised DNA based method of testing that will identify and quantify moulds. ERMI uses the analysis of settled dust in homes and buildings to determine the concentrations of the DNA of the different species of moulds. Thirty-six species were divided into 26 species/clusters of moulds associated with WDB (Group 1) and 10 common species/clusters not associated with WDB.

HERTSMI-2 is a mold test that analyses the dust sample provided for 5 moulds. These moulds are known as the "Big 5". HERTSMI-2 is an acronym for Health Effects Roster of Type-Specific Formers of Mycotoxins and Inflammagens - 2nd Version. How does HERTSMI-2 Differ from ERMI Testing? HERTSMI-2 differs from ERMI Testing in a few ways; HERTSMI-2 Testing looks at 5 moulds, ERMI looks at 36 mould species.

The ERMI gives the result as an easy to understand comparison to an established database of water-damaged buildings and non-water damaged buildings.

Which Mould Species are identified in HERTSMI-2

Aspergillus penicillioides

Aspergillus Versicolor

Chaetomium Globosum

Stachybotrys Chartarum

Wallemia Sebi

How Can the HERTSMI-2 Score be used

A HERTSMI-2 score <10 is indicative that the building is safe for re-occupancy.

The mould index is the difference between Group 1 and Group 2 found in a building. The computer ERMI values are graphed from lowest to highest. The scale ranges from -10 up to 20. The percentages of buildings that fall into different ERMI percentages is shown. For example, an ERMI of 14 is in the top 25% of homes for relative mould burden.

The automated analysis provides for rapid, reproducible results that can be reliably interpreted. For patients, prospective home-buyers, industrial hygienists and remediators alike, ERMI shows great promise for the future.



Smart HVAC Indoor Air Quality Monitor

The smartHVAC monitor by AceTel can be highly beneficial for domestic use to improve Indoor Air Quality (IAQ).

It continuously tracks air quality parameters such as temperature, humidity, VOCs, and particulate matter, providing instant feedback on indoor condition

Detects a wide range of pollutants, including carbon monoxide, formaldehyde, and other harmful gases, ensuring a comprehensive assessment of indoor air quality

Provides easy-to-read reports and real-time alerts through a mobile app or web interface, allowing homeowners to monitor and manage air quality from anywhere

Enhance Your Home's Air Quality with Our SmartHVAC Monitor Subscription Package!

Breathe easier with our comprehensive subscription package for the AceTel smartHVAC monitor, designed specifically for home use. Our service includes:

Real-Time Monitoring: Keep track of your home's air quality 24/7 with advanced sensors detecting pollutants like VOCs, carbon monoxide, and particulate matter.

Automated Control: Seamlessly integrate with your home HVAC system to automatically adjust settings for optimal indoor conditions.

Health Benefits: Maintain a healthier living environment by reducing the risk of respiratory issues and allergies.

Subscribe now and ensure your home is always a safe and comfortable place to live.





ALL COSTS LISTED BELOW ARE ESTIMATED COSTS AND DO NOT INCLUDE TRAVEL COSTS OR COSTS FOR ACCOMMODATION.

FUEL COSTS ARE CHARGED AT RECOMMENDED GOVERNMENT RATE OF 45P PER MILE

INSPECTION COSTS

- Thorough inspection of the external from ground level,
- External Hygrometer Readings for comparison
- Borescope Inspection if applicable
- Thorough inspection to internal (highlighted areas/whole house) as discussed on initial consultation.
- Indicator measurements to indicate how the building is performing at time of inspection
- Full report of findings, including further investigation/action plan for remediation within 15 working days of inspection.

FROM

£795

Prices dependent on size of property

SURFACE DUST ANALYSIS

- This comprehensive analysis helps in understanding the composition of dust in an environment, which can be useful for health assessments, cleaning protocols, and identifying potential sources of contamination.
- x2 IAQ Dust Survey Microscopy analysis for mould spores, fibres, particles, and pollen from tape lift.
- Additional Media Per Slide

£395.00

£195.00

Prices include lab fees and delivery charges and lab report

qPCR MOULD DNA ANALYSIS

- qPCR is used in environmental monitoring, indoor air quality assessments, and health risk evaluations. It helps in identifying mould contamination and assessing its potential impact on health
- x2 qPCR Mould DNA Analysis Swab - Highly accurate at identifying exact species of mould in a building,
- Additional Media - Per Swab

£795.00

£350.00

Prices include lab fees and delivery charges and lab report

HHABIAQ HOME AIR CHECK

- A specialised air sampling pump and a sorbent tube are used to collect air samples
- the pump draws air through the tube for a specified time to ensure a representative sample of the indoor air.
- x1 IAQ Home Survey™ Predict A2-IAQHSP TVOC & TMVOC scan, Home Contamination Index™, and Significant VOCs. - up to 200 Square Metres.

£495.00

Prices include lab fees and delivery charges and lab report



ALL COSTS LISTED BELOW ARE ESTIMATED COSTS AND DO NOT INCLUDE TRAVEL COSTS OR COSTS FOR ACCOMMODATION.

FUEL COSTS ARE CHARGED AT RECOMMENDED GOVERNMENT RATE OF 0.45P PER MILE

AIR-O-CELL MOULD SPORE CASSETTE AND ANALYSIS

- The Air-O-Cell is a specialised sampling cassette used for collecting and analysing airborne particles. It can capture both viable and non-viable particulates
- x5 Air-o-cell cassettes – x1 for external sample
- x1 additional Air-o-cell cassette

£595.00

£195.00

Prices include lab fees, analysis of data, delivery charges and lab report

ERMI+HERTMI-2

- The ERMI+ Swiffer test is a DNA-based mold detection method that collects dust using a Swiffer cloth to identify and measure mold species in homes, especially those without carpets. It's ideal for detecting hidden mold and assessing indoor air quality, particularly for people with mold sensitivities or after water damage
- x2 Swiffer Microscopy analysis for mould.
- Additional Swiffer

£260.00

£200.00

Prices include lab fees, analysis of data, delivery charges and lab report

SMART HVAC IAQ MONITOR

- Detects a wide range of pollutants, including carbon monoxide, formaldehyde, and other harmful gases, ensuring a comprehensive assessment of indoor air quality
- Building performance monitoring – 4 weeks – to include data analysis and report
- Ongoing subscription

295.00

CONTACT FOR MORE INFORMATION

CONSULTATIONS

- Initial Assessment Consultation – first contact
- 15 minute telephone/teams consult – brief discussion of issues being experienced.
- Assessment Information Consultation
- 60 minute telephone/teams consult – discuss assessment packages
- Report Consultation
- 30 minute telephone/teams consult – discuss report/next steps

FREE

£125.00

£75.00

additional charges apply per 15 minutes additional time
£25.00 per additional 15 minutes

Conclusion



Conducting IAQ assessments and sampling can be quite challenging due to the complexity of indoor environments, the presence of multiple pollutants, and the variability in pollutant levels over time. These challenges mean that assessments and sampling may not always provide a complete picture of the air quality issues.

However, at Healthy Homes and Beyond IAQ, we are dedicated to identifying the root causes of poor indoor air quality. By going beyond standard assessments, we aim to address the underlying issues that contribute to poor air quality, ultimately improving the quality of life for our clients. Our comprehensive approach ensures that clients receive effective solutions tailored to their specific needs.

We also strive to manage expectations by clearly communicating the potential challenges and limitations of IAQ assessments. This helps our clients understand the process and the steps we are taking to achieve the best possible outcomes for their indoor air quality.



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