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EnviroNote News

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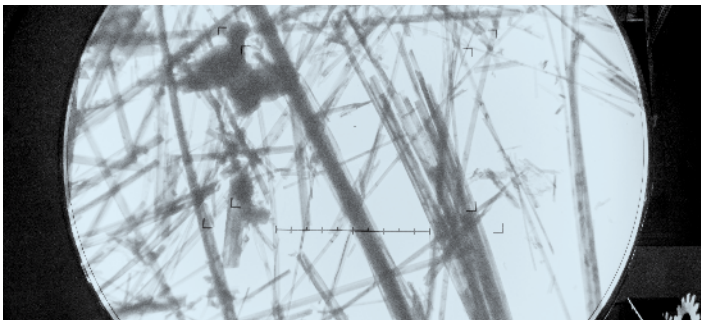
A New Australian Standard for the Analysis of Asbestos in Bulk Materials: An Overview of AS 5370:2024

Introduction

Eurofins Environment Testing Australia is proactively gearing up for the integration of the new Australian Standard AS 5370:2024 for the Analysis of Asbestos in Bulk Materials into our operations. This standard is the international ISO 22262 standard with modifications specifically for Australia. This preparation reflects our commitment to innovation and excellence in asbestos analysis protocols.

On 28 June 2024, Standards Australia published AS 5370:2024, marking an evolution in the approach to identifying asbestos in bulk materials, particularly with enhancements to the polarised light microscopy method previously used in AS 4964:2004, which has been withdrawn. These improvements are designed to harmonise Australian practices with global standards, fostering greater consistency and confidence in asbestos identification and management. Eurofins' robust approach to this transition highlights our focus on staying ahead of regulatory requirements and ensuring our laboratories meet future NATA accreditation requirements.



Key Points to Note about AS 5370:2024:

1. **New Standard Introduction:** AS 5370:2024, titled *"Sampling and qualitative identification of asbestos in bulk materials,"* continues to emphasise the use of polarised light microscopy for the qualitative identification of asbestos in bulk samples and introduces the use of advanced microscopic techniques..
2. **Transition from AS 4964:2004:** Standards Australia has withdrawn the standard previously used, AS 4964:2004, but it is still referenced in many jurisdictions and within the Model Work Health and Safety (WHS) Regulation 149. Until full adoption and legislative updates are made across all jurisdictions, both standards are still used, creating a dual compliance requirement.
3. **Internal Changes for Eurofins:** Eurofins Environment Testing Australia is proactively preparing for the transition to AS 5370:2024 for all of its asbestos laboratories by drafting updates to its in-house NATA-accredited, LTM-ASB-8020, *Method for the Qualitative Identification of Asbestos in Bulk Samples*. These updates are internal for now and will align with the new methodologies outlined by AS 5370:2024.
4. **Accreditation Updates from NATA:** The National Association of Testing Authorities (NATA) has indicated upcoming updates for accredited laboratories to transition to the new standard. Eurofins is still awaiting confirmation on the accreditation schedules for its asbestos testing facilities and plans to finalise its internal testing methods before upcoming audits by the accreditation body.
5. **Asbestos National Strategic Plan 2024–2030:** The Asbestos and Silica Safety and Eradication Agency (ASSEA) has developed a draft of the third-phase Asbestos National Strategic Plan for 2024-2030, which is awaiting agreement from all relevant authorities. This plan may further influence regulatory updates and compliance requirements across jurisdictions. In its Draft National Guide for Asbestos Surveys, September 2024, ASSEA recommends confirmation of asbestiform asbestos according to AS 5370:2024 - *Sampling and qualitative identification of asbestos in bulk materials.*

Moving Forward for Eurofins Environment Testing Australia:

Eurofins is staying abreast of these changes, ensuring all staff are aware of the updates in methodologies, and preparing for changes in compliance and accreditation requirements.

AS 5370:2024, *"Sampling and qualitative identification of asbestos in bulk materials,"* aligns with the ISO 22262 series and focuses on the enhancement of polarised light microscopy (PLM) techniques while also incorporating supplementary methods.

Key Methodological Aspects of AS 5370:2024

1. **Polarised Light Microscopy (PLM) Enhancements:**
   - AS 5370:2024 builds upon the use of Polarised Light Microscopy (PLM) from the previous standard AS 4964:2004. PLM remains the core method for asbestos identification in bulk materials due to its efficiency in detecting asbestos fibres.

- The updated standard expands the criteria for PLM analysis, specifying improved procedures for sample preparation, mounting, and examination. It provides more precise guidelines on identifying asbestos types (e.g., chrysotile, crocidolite, amosite, tremolite, actinolite, anthophyllite) based on their unique optical properties, physical structure and chemical composition, for advanced microscopic techniques.

2. Sampling Requirements: (Laboratory is NOT responsible for sampling)

- The standard emphasises stringent sampling techniques to ensure representative samples are collected for accurate testing. It outlines proper procedures for selecting sampling locations, minimising cross-contamination, and handling different types of bulk materials (e.g., soil, building materials, insulation).
- Detailed protocols for sampling size, volume, and preservation are included, ensuring consistency and repeatability across different laboratories..
- A minimum of 5 g of bulk materials is recommended, while with vinyl materials, the minimum sample size shall be 50 cm^2.

3. Qualitative Identification Process:

AS 5370:2024 provides a structured framework for the qualitative identification of asbestos fibres in bulk samples. It involves a multi-step process:

- **Initial Visual Examination:** To assess the sample matrix and identify potential asbestos content.
- **Microscopic Examination:** Using PLM to identify asbestos based on morphological characteristics, refractive indices, birefringence, and extinction angles.
- **Confirmation Techniques**: If required, additional confirmation methods such as Scanning Electron Microscopy (SEM) or Transmission Electron Microscopy (TEM) with Energy Dispersive X-ray Spectroscopy (EDS) can be employed for more precise identification.

4. Reporting and Interpretation of Results:

- The standard includes clear guidelines for reporting asbestos presence, including the types, in both homogenous and non-homogenous samples.
- The standard introduces the use of the term man made vitreous fibres (MMVF), replacing synthetic mineral fibres (SMF).
- There is a strong emphasis on providing a detailed description of the sample analysis process, potential limitations, and any assumptions made during testing.

5. Quality Control and Assurance:

- AS 5370:2024 maintains a robust quality control measures to ensure consistent and reliable results. It introduces the use of standard reference materials to compliment the proficiency testing undertaken by laboratories, and regular calibration of microscopy equipment.
- The standard mandates documented standard operating procedures (SOPs) for every aspect of sample handling, analysis, and reporting to maintain accuracy and repeatability.

6. Handling of Non-Standard Samples:

- Guidance is provided for handling complex or heterogeneous samples that may contain asbestos fibres mixed with other materials. This includes specific approaches to sample preparation, such as homogenisation or sub-sampling, to avoid bias in results.

7. Health and Safety Protocols:

- AS 5370:2024 incorporates updated health and safety protocols for laboratory personnel handling asbestos samples. This includes the use of appropriate personal protective equipment (PPE), safe sample disposal practices, and measures to prevent cross-contamination between samples.

8. Supplementary Analytical Techniques:

- While PLM remains the primary method, AS 5370:2024 acknowledges the limitations of PLM, particularly in detecting very fine asbestos fibres or distinguishing asbestos from non-asbestos amphiboles. Therefore, supplementary analytical techniques like Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy are included as optional methods for confirming ambiguous results or providing more precise identification in complex matrices.

Conclusion and Implications for Eurofins Environment Testing Australia

Eurofins focus on accuracy, reliability and safety in asbestos identification has it ideally positioned for uptake of changes in AS5370:2024. The internal updates to the LTM-ASB-8020 method will incorporate these new requirements to ensure full compliance and continued accreditation. Coordination with NATA on the accreditation schedules and alignment with the new standard is essential for a smooth transition.

If you would like to know more about the technical changes, please contact your Analytical Service Manager, who can answer your questions or forward them to the Technical Team via EnviroTechnical@eurofinsanz.com.