



Specific Accreditation Criteria

**ISO/IEC 17025 Application Document
Life Sciences - Annex**

Asbestos identification in bulk samples

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Asbestos identification in bulk samples

This document provides additional interpretative criteria and recommendations for the application of ISO/IEC 17025 for both applicant and accredited facilities conducting the identification of asbestos in bulk samples.

Applicant and accredited facilities must comply with all relevant documents in the NATA Accreditation Criteria (NAC) package for Environment (refer to *NATA Procedures for Accreditation*).

The clause numbers in this section follow those of ISO/IEC 17025 but since not all clauses require interpretation the numbering may not be consecutive.

5 Structural requirements

5.4 NATA must be notified in writing of any field site that operates for longer than two months. NATA reserves the right to assess any long term field laboratory, either as part of the assessment of the base facility or as a separate exercise.

To qualify as a field site, an operation must:

- be established to service one specific project with a finite period of no more than 18 months, not several non-specific ones;
- be on the site of (or in very close proximity to) the project it is servicing; and
- be staffed by asbestos identifiers who work out of the base facility.

If the operation does not meet all of these criteria, a separate accreditation must be obtained.

Each facility must have documented procedures to be applied when setting up a field laboratory.

6 Resource requirements

6.2 Personnel

6.2.5 Facilities must document the approval of appropriate staff authorised to perform asbestos identification. NATA will take a sampling approach to review the competency of asbestos identifiers at assessments.

Evidence of staff competency can include but is not limited to:

- an evaluation of the knowledge of their ability to identify asbestos and the theory upon which this is based;
- results of participation in the facility's quality control program;
- participation in proficiency testing programs.

The system for evaluation and monitoring of staff approved to identify asbestos must include activities for refresher training to be undertaken by staff who have been absent for extended periods, for example 3 months or greater. Such activities may include participation in an internal quality assurance (QA) program and external proficiency testing.

These evaluations must be undertaken by another competent person.

Field sites must be established under the supervision of a person from the base site with approval to release results. Staff from the base site must visit the field site at least once per week if they are not located at the field site for the duration of its operation. Records sufficiently detailed to identify what activities were undertaken must be kept of these visits.

6.2.6 A person approved to release results must be an asbestos identifier or where they hold a more senior position at the facility they must be able to demonstrate extensive experience in identification and be familiar with the day to day operations of the facility.

A list of staff authorised as asbestos identifiers must be maintained.

6.3 Facilities and environmental conditions

6.3.4 Special precautions may need to be taken at field sites to define and control access.

6.4 Equipment

6.4.7 Facilities are responsible for establishing their own equipment assurance program to ensure consistent results are produced. Guidance on equipment assurance and calibration is available in Technical Papers published by the Australian Institute for Occupational Hygiene.

6.4.13 Records must be kept of the location of each microscope used outside the base facility and the dates on which they were at each site.

All microscopes used at field sites must be available for inspection during NATA assessments of the base facility.

7 Process Requirements

7.2 Selection, verification and validation of methods

7.2.1 Selection and verification of methods

7.2.1.1 The test method used must be able to:

- differentiate between asbestos fibres and the non-fibrous parent mineral;
- apply for the analysis of both homogenous and heterogeneous matter;
- unequivocally identify chrysotile, amosite and crocidolite asbestos;
- determine the presence of synthetic mineral fibres (SMF) and organic fibres;
- contain the limits of detection, which have been established as part of method validation.

If a facility does not want to develop its own test method, a suitable method that conforms to the principles described above and, that uses polarised light microscopy with dispersion staining, is given in AS 4964.

If AS 4964 is adopted by a facility, then it must have a supporting work instruction/procedure to ensure consistent application of the Standard. This supporting documentation is to include appropriate definitions of SMF and organic fibres.

The methodology of AS 4964 is based on an implicit, mandatory requirement for non-asbestos and non-mineral fibres such as SMF and organic fibres, if present, to be analysed and identified. Without this, the method is invalid when these types of fibres are present and not able to be formally identified, as is the case for facilities not accredited for this aspect of the analysis.

Therefore, it is a NATA requirement that facilities must analyse and report the presence of SMF and organic fibres when present. In order to gain accreditation, the method must include a definition of these materials and the criteria to be applied for identification of these fibres. It should be noted that SMF and organic materials should only be described in generic terms. This means that the specific types of SMF and organic fibres such as glass fibres, ceramic fibres, wool fibres, cotton fibres and so on, are not to be analysed or reported.

An adequate definition of SMF is any fibre exhibiting isotropic optical characteristics. This group includes glass fibres, glass wool, rock wool, slag wool, ceramic fibres, and 'bio-soluble' fibres of all types now being produced by most SMF manufacturers.

Organic fibres can be defined as fibres which ash at approximately $400\pm 30^{\circ}\text{C}$. These include natural organic fibres such as cellulose, hemp, cotton, flax, jute and wool; man-made organic fibres such as polypropylene, polyester, nylon, kevlar and acrylics.

7.2.2 Validation of methods

If accreditation is sought for the identification of anthophyllite, actinolite and tremolite asbestos, a fully validated method including limits of detection must be available.

Note: AS 4964: *Method for the qualitative identification of asbestos in bulk samples* does not support the analysis of tremolite, actinolite and anthophyllite.

7.3 Sampling

7.3.3 When the facility is responsible for sample collection, the sample must be representative of the larger bulk material, including a full cross section. A complete sample history, as far as possible, must be recorded.

7.4 Handling

7.4.1 In general, a facility should not subsample because of the high probability that small amounts of asbestos materials may be unintentionally omitted due to the sampling process.

Validated methods must be used where subsampling is performed on either homogeneous or non homogeneous samples. These methods must be documented and referenced in the test reports where relevant.

Where subsampling has been conducted, an appropriate qualifying statement is to be included in the test report, advising customers of the potential for invalid results.

7.5 Technical records

7.5.1 Records must include all raw data and observations, so that the conclusions as to the identification can be checked.

7.7 Assuring the validity of results

7.7.1 An adequate quality control program must be in place and include the use of samples covering the three asbestos types, synthetic mineral fibres and organic fibres. This program must cover all identifiers, including those involved at any field sites.

7.7.2 Facilities must participate in a proficiency testing program for asbestos fibre identification. A program must be established to ensure that all asbestos identifiers participate in the proficiency program over a defined period.

7.8 Reporting of results

7.8.2 Common requirements for reports (test, calibration or sampling)

7.8.2.1 Reports, including preliminary reports, must include the name of the identifier and the name of the person authorised to release results.

7.8.3 Specific requirements for test reports

7.8.3.1 Reports must specify the type(s) of asbestos detected i.e. amosite, chrysotile, crocidolite.

Reported details of sample history, including size and/or weight and position in relation to the area from which it was taken, when known, must be such as to provide sufficient information to ensure that results can be correctly interpreted.

If identification is not possible due to adhering resins or cements or because of degradation of the fibres, an explanatory note to that effect must be included on the report.

Quantitative estimates shall not be included in reports.

Facilities must have prepared the slides used to obtain the results included in reports.

The method used must be included in reports. Unless it is an in-house validated method, the method stated must be AS 4964, and any supplementary work instruction used must also be reported to ensure consistent application of AS 4694.

References

This section lists publications referenced in this document. The year of publication is not included as it is expected that only current versions of the references shall be used.

Standards

ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories

AS 4964 Method for the qualitative identification of asbestos in bulk samples

NATA Publications

NATA Accreditation Criteria (NAC) package for Environment

Other Publications

Australian Institute for Occupational Hygiene, Technical Papers
(<https://www.aioh.org.au/resources/technical-papers>)

Amendment Table

The table below provides a summary of changes made to the document with this issue.

Section or Clause	Amendment
Whole document	Clauses have been aligned with ISO/IEC 17025:2017. Any criteria included in the previous issue that are now covered by ISO/IEC 17025:2017 have been removed. No new interpretative criteria or recommendations have been included other than editorial changes. Equipment assurance tables and information deleted. This information is now available from the AIOH (Australian Institute of Occupational Hygienists)