



ALS Asbestos Reporting Protocols

Background

Under the various guidelines that relate to asbestos in Australian State and Federal legislation there are numerous requirements, implicit and explicit, for laboratories reporting the results of asbestos testing. The meaning of terms like 'friable' and requirements relating to reporting limits vary between jurisdictions and applications, depending on whether the legislation relates to testing driven by Occupational Health, Waste Classification and Disposal, Contaminated Site Assessment or other guidelines.

The Australian Standard method AS4964 is promulgated as the reference method for Asbestos testing in all jurisdictions, for both the intended application of asbestos identification and as the base method for Asbestos quantitation, most notably under the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) ("the NEPM"). Although never intended as a quantitative method, under the NEPM, laboratories are routinely requested to apply AS4964 to quantitation of asbestos in soils.

'Friable' Asbestos

In the context of applying a Health Screening Level (HSL) to "Asbestos Fines" (AF) and "Fibrous Asbestos" (FA), the NEPM refers to the sum of FA and AF as "(friable asbestos)", although it is noted that this HSL does not apply to 'free fibres'.

In the NEPM, AF is defined by size (i.e. asbestos materials that pass through a 7x7mm sieve), whereas FA is defined by its degree of degradation or condition. In practice, these categories often overlap. In discussion of the definitions of FA and AF, the NEPM adds the following:

From a risk to human health perspective, FA and AF are considered to be equivalent to 'friable' asbestos in Safe Work Australia (2011), which is defined therein as 'material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos'
NEPM Schedule B1 p27-28

It has become evident that the purported equivalence of these terms under the NEPM as implied in Table 6 of the NEPM is not necessarily generally accepted, particularly outside the environmental sector. The exclusion of 'free' fibres, generally taken to mean the respirable ('trace') fibres which represent the greatest health risk, highlights this difference in definitions.

Under asbestos removal, waste classification and disposal and Occupational Health regulations, any reported detection of 'friable' asbestos implies the potential presence of respirable fibres. As a result, the use of this term can invoke rigorous dust controls and dramatically increase waste disposal and other costs for stakeholders. There is no explicit requirement in AS4964 to use the term 'friable' when describing asbestos found in samples for analysis. For homogenous samples, the laboratory is only required to describe the 'entire sample, or sub-sample, or both'. The Standard does, however, suggest by example that the 'form' of asbestos fibres found should also be reported for non-homogenous samples.

Table 6: Equivalency of terms used in the NEPM, WA DoH (2009) and Work Health and Safety Legislation guidelines

NEPM terminology (based on WA DoH 2009)	Work Health and Safety terminology
Bonded asbestos-containing-material or 'bonded ACM' (referred to as ACM in WA DoH 2009)	Bonded asbestos/non-friable asbestos
Fibrous asbestos, FA	Non-bonded/friable asbestos
Asbestos fines, AF	

Clearly, accurate reporting of asbestos test results demands careful use of terminology to avoid unintended misinterpretations and increased costs for industries involved in asbestos related works.

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Asbestos Analytes and Descriptions

In order to allow direct comparisons between analysis results and the NEPM HSL, ALS previously used the NEPM interpretation of 'friable asbestos' when reporting asbestos quantitation results for environmental samples. Following extensive consultation with regulators, auditors and consultants, ALS is updating reporting categories to those shown in the following table.

EA200: AS4964-2004 Identification by AS4964 (NATA accredited)			
	Result	LOR	Units
Asbestos Detected	Yes/No	0.1	g/kg
Asbestos Type	Mineral		—
Sample weight (dry)	Weight	0.01	g
Asbestos (Trace)	Yes/No	5	Fibres
Description	Text*	—	—
APPROVED IDENTIFIER	Name	—	—
* The 'Description' reported under AS4964 is intended to give context to the form or condition of any asbestos found in the sample. The form is described in objective terms, with the term 'friable' only used when the asbestos is actually assessed by crushing as described by <i>Safe Work Australia</i> .			
EA200N: Asbestos Quantification under the ACS NEPM 2013 (non-NATA)			
	Result	LOR	Units
Asbestos (Fines and Fibrous <7mm)	Dry Weight	0.0005	g
Fibrous Asbestos >7mm	Dry Weight	0.1	g
Asbestos (Fines and Fibrous FA+AF)	Percentage	0.001	% (w/w)
Asbestos Containing Material	Dry Weight	0.1	g
Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	Percentage	0.01	% (w/w)
Weight Used for % Calculation	Soil Weight	0.0001	kg

Results below the AS4964 Limit of Reporting

When reporting NATA accredited asbestos analysis results, ALS must comply with NATA and AS4964 requirements, as well as the requirements of regulatory bodies. In some jurisdictions, there is an obligation on laboratories to report the presence of all asbestos found, even when estimated to be below the AS4964 Limit of Reporting (LOR). Consequently, when asbestos is found, but estimated to be below the AS4964 reporting limit, ALS will report a qualified No*. The "No*" will be accompanied in the report by an explanatory comment stating that "Asbestos was found at levels estimated to be below the reporting limit of 0.1g/Kg". The asbestos type and description will also be reported.

For further information please contact your local ALS Client Services team.

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