



New Zealand Standard

Testing and decontamination of methamphetamine-contaminated properties

NZS 8510:2017

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The committee consisted of representatives of the following nominating organisations:

Analytica Laboratories	Insurance Council of New Zealand
Andy Andersons Industrial Services	International Accreditation NZ (IANZ)
Auckland Council	Local Government New Zealand
Cleaning Systems Ltd	MethSolutions Ltd
Contaminated Site Solutions Ltd	Ministry for the Environment
Environmental Science and Research	Ministry of Health
Forensic and Industrial Science Ltd	New Zealand Property Investors' Federation
Hill Laboratories	NZ Decontamination Services T/A Fresh Living
Housing New Zealand Corporation	NZ Remediation Services
Hutt City Council	Real Estate Institute of New Zealand
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Standards New Zealand gratefully acknowledges the contribution of time and expertise from all those involved in developing this standard.

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**Testing and
decontamination of
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contaminated properties**

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NOTES

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REFERENCED DOCUMENTS

Reference is made in this document to the following:

New Zealand standards

NZS ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories¹

Joint Australian/New Zealand standards

AS/NZS 4308:2008 Procedures for specimen collection and the detection and quantitation of drugs of abuse in urine

AS/NZS ISO/IEC 17020:2013 Conformity assessment – Requirements for the operation of various types of bodies performing inspection²

International standard

ISO/IEC 17000:2004 Conformity assessment – Vocabulary and general principles

Other publications

Fowles, J, Deyo, J, and Kester, J. *Review of remediation standards for clandestine methamphetamine laboratories: Risk assessment recommendations for a New Zealand standard*. Wellington: Institute of Environmental Science and Research Ltd (ESR), 2016. Retrieved from www.health.govt.nz/publication/review-remediation-standards-clandestine-methamphetamine-laboratories-risk-assessment (26 June 2017).

Martyny, J W. *Methamphetamine sampling variability on different surfaces using different solvents*. Denver, Colorado: National Jewish Medical and Research Center, 2008.

Ministry of Health. *Guidelines for the remediation of clandestine methamphetamine laboratory sites*. Wellington: Ministry of Health, 2010.

National Institute for Occupational Safety and Health (NIOSH). 'Method No. 9106: Methamphetamine and illicit drugs, precursors, and adulterants on wipes by liquid-liquid extraction.' In *Manual of analytical methods*. 5th ed. Cincinnati, Ohio: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 2016.

National Institute for Occupational Safety and Health (NIOSH). 'Method No. 9109: Methamphetamine and illicit drugs, precursors, and adulterants on wipes by solid phase extraction.' In *Manual of analytical methods*. 5th ed. Cincinnati, Ohio: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 2016.

National Institute for Occupational Safety and Health (NIOSH). 'Method No. 9111: Methamphetamine on wipes by liquid chromatography/mass spectrometry.' In *Manual of analytical methods*. 5th ed. Cincinnati, Ohio: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 2016.

¹ Identical to and reproduced from ISO/IEC 17025:2005

² Identical to and reproduced from ISO/IEC 17020:2012

WorkSafe New Zealand. *Fact sheet: Protecting workers from the dangers of clandestine laboratories*. April 2015. Retrieved from www.worksafe.govt.nz/worksafe/information-guidance/all-guidance-items/clandestine-laboratories/clandestine%20laboratories.pdf (26 June 2017).

New Zealand legislation

Criminal Proceeds (Recovery) Act 2009

Health and Safety at Work Act 2015

Misuse of Drugs Act 1975

Other legislation

Code of Colorado Regulations, 6 CCR 1014-3, 2014, State Board of Health, Colorado

Websites

www.cdc.gov/niosh

www.legislation.govt.nz

www.mfe.govt.nz

RELATED DOCUMENTS

When interpreting this standard it may be helpful to refer to other documents, including but not limited to:

Australian Government. *Clandestine drug laboratory remediation guidelines*. 2011.

Ministry for the Environment. *Contaminated land management guidelines No. 5: Site investigation and analysis of soils*. 2011 revised draft. Wellington: Ministry for the Environment, 2011.

Minnesota Department of Health and Minnesota Pollution Control Agency (USA). *Clandestine drug lab general cleanup guidance*. St. Paul, Minnesota: Minnesota Department of Health, 2010.

Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Virginia Department of Health (USA). *Guidelines for cleanup of residential property used to manufacture methamphetamine*. Richmond, Virginia: Virginia Department of Health, 2013.

LATEST REVISIONS

The users of this standard should ensure that their copies of the above-mentioned New Zealand standards are the latest revisions. Amendments to referenced New Zealand and joint Australian/New Zealand standards can be found on www.standards.govt.nz.

REVIEW OF STANDARDS

Suggestions for improvement of this standard will be welcomed. They should be sent to the Manager, Standards New Zealand, Private Bag 1473, Wellington 6140.

FOREWORD

The illicit manufacture and use of methamphetamine is having a major impact on communities and individuals throughout New Zealand. Methamphetamine production and use can contaminate properties and expose occupants, particularly young children, to potential health risks, and can result in property owners facing significant costs for testing and decontaminating properties, and replacing fixtures, fittings, and materials that cannot be decontaminated.

The purpose of this standard is to provide guidance on reducing people's risks of exposure to harm caused by the presence of unacceptable levels of methamphetamine contamination in properties including vehicles and caravans. It establishes decontamination levels to guide the decontamination of affected properties. It also sets out procedures for testing properties for contamination and the steps needed to decontaminate properties and dispose of any contaminated waste. Reference to this standard may be helpful in situations such as change of ownership or tenancy of properties, particularly properties where contamination by methamphetamine is known or suspected.

The standard addresses all sources of methamphetamine contamination, and aims to ensure consistency, reliability, and competency in activities including screening, sampling, testing, and, where necessary, decontaminating properties and disposing of contaminated materials.

This standard is intended to assist a wide range of stakeholders, and has been prepared with input from sampling and testing operators, decontamination contractors, property investment and property management interests, the insurance sector, local authorities, public health authorities, and laboratories. It identifies current good practice on activities, such as sampling, testing, and decontamination, and is a basis for reducing risks of harm from methamphetamine contamination.

After seeking expert advice on exposure risk from Environmental Science and Research Ltd (ESR) and the Ministry of Health, and reviewing a large number of public comments on a draft of this standard, the committee has decided to set the maximum acceptable level of methamphetamine in an affected property at $1.5 \mu\text{g}/100 \text{ cm}^2$ after decontamination. While this level is greater than the Ministry of Health 2010 guideline value of $0.5 \mu\text{g}/100 \text{ cm}^2$ for properties used as clandestine laboratories, there are a number of reasons why the committee decided to adopt the single value of $1.5 \mu\text{g}/100 \text{ cm}^2$ in this standard:

- (a) Other than by expert scientific opinion, it is currently not possible to determine whether or not a property has been used as a clandestine laboratory, based solely on the results of surface sampling;
- (b) What constitutes evidence of a clandestine laboratory may change as production techniques change;
- (c) Evidence of previous production may not be apparent except for the results of surface sampling, which alone cannot be used to determine if production occurred;
- (d) A level of $2.0 \mu\text{g}/100 \text{ cm}^2$ was not considered conservative enough by the authors of the ESR review for a clandestine laboratory site, and it was likely that some properties would be decontaminated to this level when in fact production of methamphetamine did occur but there was no clear evidence of production remaining on the property;

- (e) Carpets and soft furnishings can absorb and retain significant amounts of methamphetamine compared to other surfaces in a typical house;
- (f) For carpet and soft furnishings to be effectively sampled the process could be destructive and therefore likely to result in disposal of these items regardless;
- (g) No acceptable level for methamphetamine in carpet and soft furnishings is available, and these items pose an exposure risk to young children in particular;
- (h) ESR and the Ministry of Health acknowledge that a post-decontamination level of 1.5 µg/100 cm² or less is appropriate to minimise exposure risk to occupants including young children, because of safety factors already built into the ESR's October 2016 risk assessment and recommendations;
- (i) Any hazards from other contaminants resulting from processes used for producing methamphetamine on a property should be assessed separately, and any treatment of those hazards should be based on contaminant-specific guidelines.

NOTE – The single-level approach to decontamination replaces a three-level approach presented as an option in a draft of this standard that was released for public comment in December 2016. The committee considered that if three decontamination levels applied:

- (a) It would be unclear who would be responsible for determining which level should be used for a particular property and therefore hold the liability;
- (b) If left to individual companies to decide which clean-up level should be used, an inappropriate level could be applied due to inexperience and insufficient knowledge of the operator, and could be contested;
- (c) If left to individual property owners or stakeholders to decide which level should apply, economic considerations could result in an inappropriate level being adopted, and could be contested;
- (d) Having more than one decontamination level for a property that has not been a clandestine laboratory would be difficult to implement in practice as the level being referenced would continually change for a property as carpets and soft furnishings are removed and replaced.

During the development of this standard, the committee acknowledged that there are some provisions that will require a lead-in time to implement after this standard is published. Requirements such as accreditation of those who carry out sampling for detailed assessments, or recognised training courses for screening samplers or decontamination operators, may require some time to set up and implement. The committee recognises that there needs to be a transition phase to allow such arrangements to be put in place. However, the committee decided that it was important to clearly signal in this standard the committee's intention to ensure that those who work in the areas of methamphetamine testing and decontamination should have the necessary skills and experience to undertake the work and provide the level of service required by owners or managers of affected properties. Such improvements will help to increase confidence that both testing and decontamination of methamphetamine-contaminated properties meet the objectives of this standard.

In common with other standards, this standard will be reviewed from time to time to ensure that it remains relevant and meets its objectives. For example, if further research or developments reveal that changes are needed to address risks of exposure to methamphetamine contamination, or to acknowledge other methods of testing or decontamination of properties, then the standard could be reviewed and updated where necessary to reflect such changes.

Standards New Zealand appreciates the efforts of all those involved in developing this standard in a relatively short period of time in response to a strong demand for such guidance.

Initial funding to scope this project was provided by the Hutt City Council, and funding to develop the standard was granted later in 2015 under the Criminal Proceeds (Recovery) Act.

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New Zealand Standard

Testing and decontamination of methamphetamine-contaminated properties

1 GENERAL

1.1 Scope

This standard covers the screening, sampling, testing, and decontamination of properties that might have been contaminated as a result of the use or production of methamphetamine.

The standard includes:

- (a) Guidance on methods of screening, sampling, and testing of properties to assess the extent of methamphetamine contamination, ensuring that sampling is representative, that testing methods produce reliable and repeatable results, within known limits, whether using qualitative or quantitative methods, and that there is a consistent approach to reporting test results;
- (b) Measures to manage risks to health, well-being, safety, and the environment from methamphetamine-contaminated material and chemicals used to manufacture methamphetamine;
- (c) Good practice procedures and criteria for decontaminating methamphetamine-contaminated properties and their contents, and methods of disposing of materials that cannot be decontaminated;
- (d) Guidance on post-decontamination actions, including sampling and testing for the purpose of verifying whether decontamination of properties has been achieved and meets the appropriate limits in this standard;
- (e) Reporting and documentation requirements to confirm the decontamination of a property;
- (f) Information and certification that supports processes, such as validation or auditing, which provide assurance that screening, sampling, testing, risk assessment, decontamination of properties, and disposal of contaminated materials have been effective, and comply with this standard and any relevant local authority requirements.

NOTE – In some cases, a property owner may decide to demolish rather than decontaminate a property due to the extent of methamphetamine-related contamination and the costs of decontamination. This standard focuses on decontamination of affected properties and does not include criteria for deciding whether action other than decontamination is necessary.

1.2 Objectives

The objectives of this standard are to provide guidance on methodologies, procedures, and performance criteria aimed at ensuring the methods of testing properties provide reliable results, and the decontamination of contaminated properties is effective, reduces harm, and enables properties to be safely reoccupied. The standard will contribute to the reduction of risks to the health and safety of occupants and others who may be exposed to methamphetamine contamination. Application of the standard will provide assurance that activities such as screening, sampling, testing, assessing, and decontamination of contaminated properties, and treatment or disposal of their contents, are carried out in accordance with good practice.

1.3 Interpretation

For the purposes of this standard, the word 'shall' refers to requirements that are essential for compliance with the standard, while the word 'should' refers to practices that are advised or recommended.

The terms 'normative' and 'informative' have been used in this standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a standard while an 'informative' appendix is for information and guidance only.

1.4 Definitions

For the purposes of this standard the following definitions shall apply:

Accreditation	Formal confirmation, following assessment by a Government-recognised accreditation body, of the competence of an organisation to perform specific tasks
Accredited sampler	A person who is considered competent and is authorised to take samples for detailed assessments and post-decontamination reports on behalf of an AS/NZS ISO/IEC 17020 or NZS ISO/IEC 17025 accredited body
Chain of custody	A series of procedures to account for the integrity of each sample by tracking its handling and storage from the point of sample collection to final disposal at the laboratory
Clandestine lab	A property used for the illicit manufacture of methamphetamine
Clearance report and certificate	A report and certification by a decontamination contractor, including confirmation by an accredited sampler, that a property has been decontaminated to the levels specified in this standard
Contamination-level assessment	The process to determine the presence or absence of methamphetamine, or the extent and magnitude of methamphetamine contamination if present in a property

Decontamination	The process of reducing the level of methamphetamine contamination in a property by cleaning the property and its contents, or removing methamphetamine-contaminated materials from the property, or both
Decontamination contractor	A competent person or company contracted to decontaminate a methamphetamine-contaminated property
Decontamination scope of work	A detailed plan that sets out how a property is proposed to be decontaminated, including the methods and cleaning agents to be used
Detailed assessment	An assessment by an accredited sampler to determine the extent and magnitude of methamphetamine contamination in a property
Discrete wipe sample	A single sample taken from an area of 100 cm ² using a technique as outlined in one of the appropriate NIOSH standard methods or validated equivalent method
Encapsulation	Applying a surface sealant to create a physical barrier for the purpose of decreasing or eliminating potential exposure to any residual contaminants that may remain following decontamination. Encapsulation is not a substitute for cleaning
Exposure	Contact with, or close proximity to, a substance by swallowing, breathing, or direct contact with the skin or eyes. Exposure may be short term – acute – or long term – chronic
Exposure risk	The likelihood of exposure to contaminants and their effects on people
Field blank	A swab that is handled by the sampler in the same way as a real sample but shall not contact any potential contaminated surface and is then analysed
Field composite sample	A sample comprised of multiple discrete wipe samples collected from separate locations but analysed as a single sample. A field composite sample result represents a sum or accumulation of each of the individual wipes
High-use area	An area in a property that can be easily accessed and is regularly used by adults and children
Independent	The absence of any relationship that could threaten the impartiality of the person or organisation based on ownership, governance, management, personnel, shared resources, finances, contracts, marketing (including branding), and payment of a sales commission or other inducement for the referral of new clients



Laboratory composite	The process by which discrete wipe samples are composited in the laboratory to produce an averaged result
Limited-use area	An area that is likely to be accessed only by adults and for short periods of time. This includes crawl spaces and wall cavities not used as duct runs that are unlikely to be renovated
Methamphetamine	An amphetamine type stimulant that is highly addictive. Methamphetamine is a controlled substance, classified as a Class A (very high risk) drug under the Misuse of Drugs Act
Methamphetamine contamination	A property or part of a property where the level of methamphetamine has been tested in accordance with this standard and found to exceed 1.5 µg/100 cm ²
Methamphetamine production	The manufacture of methamphetamine, including processing, packaging, and storage of methamphetamine and associated chemicals
Personal possessions	Items in a property that belong to the occupier but are not considered part of the property's fixtures and fittings
Post-decontamination assessment	Sampling and assessment by an accredited sampler following decontamination in order to determine whether the decontamination process has been effective and the property meets the limits in this standard
Precursor	A substance from which another substance is formed. In the context of this standard, it is a chemical (or one of several) used to create methamphetamine, and includes compounds or mixtures containing ephedrine or pseudoephedrine
Property	Any property or building where people may from time to time be present, including but not limited to dwellings (including ancillary buildings such as sheds and garages), vehicles, boats, caravans, mobile homes, and other structures where people may be present for extended periods of time, such as workplaces, hotels, motels, and storage facilities
Sampler	See definitions for accredited sampler and screening sampler
Sampling plan	A plan detailing the type and number of samples to be taken, and the location where samples are to be taken
Screening	The process, using a screening test, of identifying the presence or absence of methamphetamine or other contaminants in a property within stated detection and confidence levels
Screening assessment	An assessment by a screening sampler to determine whether or not methamphetamine is present

Screening sampler	A person who has successfully completed an approved course of instruction for sample collection and uses screening technology to test for the presence or absence of methamphetamine and who has received a statement of attainment in accordance with the New Zealand Qualifications Authority
Screening technology	A general term to describe various types of screening test equipment and methods used to detect the presence of methamphetamine within specified limits
Screening test	A test, within the field or a laboratory-based test, using validated equipment and methodology that establishes, within known limits, whether a specific substance is or is not present
Site inspection	The act of implementing formally approved methods or procedures for determining the nature, extent, and levels of methamphetamine-related contamination present on a site and the potential risk posed to human and environmental health
Testing laboratory	A laboratory that is NZS ISO/IEC 17025 accredited to test samples to determine the level of methamphetamine present
Validation	Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

1.5 Abbreviations

Abbreviations have the following meanings:

ESR	Environmental Science and Research Ltd, a New Zealand Crown Research Institute
HEPA	High-efficiency particulate air
HVAC	Heating, ventilation, and air conditioning
NIOSH	National Institute for Occupational Safety and Health (USA)
PPE	Personal protective equipment

1.6 Notation

This standard uses the following notation:

$\mu\text{g}/100\text{ cm}^2$	Micrograms (one millionth of a gram) per 100 square centimetres
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2 OVERVIEW

2.1 Decontamination levels

2.1.1 High-use and limited-use areas

This standard prescribes a single level for decontamination of all high-use areas of a property where there is significant risk of exposure to methamphetamine contamination due to either producing methamphetamine or using it on the property. It also prescribes a less stringent level for the decontamination of limited-use areas of a property where the risk of exposure is less, but decontamination is still necessary.

2.1.2 Decontamination level – high-use areas

Individual high-use areas of a property that have been tested according to methods in this standard and shown to have methamphetamine present at levels exceeding $1.5 \mu\text{g}/100 \text{ cm}^2$ shall be regarded as contaminated. These areas shall be decontaminated by cleaning or removing contaminated materials, or both, and tested to verify that decontamination has been effective. If a property has one or more high-use areas that are contaminated (exceed $1.5 \mu\text{g}/100 \text{ cm}^2$), but the property contains carpet in other high-use areas that are not contaminated (at or below $1.5 \mu\text{g}/100 \text{ cm}^2$), the carpets in high-use areas that are not contaminated shall at least be cleaned to reduce the risk of any future exposure to occupants. After decontamination, a clearance certificate shall only be issued if the level of methamphetamine, in high-use areas previously contaminated, is $1.5 \mu\text{g}/100 \text{ cm}^2$ or less.

NOTE – This standard adopts an area-by-area approach to decontaminating a property, rather than an overall average approach, which the ESR toxicological model is based on. This is due to both the practical problems of allowing individual areas to remain above $1.5 \mu\text{g}/100 \text{ cm}^2$ (due to averaging), as well as the significant costs of decontaminating a property in its entirety when only a small portion (for example, a single room) is found to be contaminated.

2.1.3 Decontamination level – limited-use areas

Limited-use areas of a property that is being decontaminated in accordance with 2.1.2 shall be decontaminated to a level of $3.8 \mu\text{g}/100 \text{ cm}^2$ or less. This is because access is likely to be infrequent and restricted to adults, and so there is a reduced risk of exposure to methamphetamine contamination. Limited-use areas shall be decontaminated by cleaning or removing contaminated materials, or both, and tested to verify that decontamination has been effective. After decontamination, a clearance certificate shall only be issued if the level of methamphetamine, in low-use areas previously contaminated, is $3.8 \mu\text{g}/100 \text{ cm}^2$ or less on a space-by-space basis.

NOTE – The level of $3.8 \mu\text{g}/100 \text{ cm}^2$ is based on the Code of Colorado Regulations for clean-up, and the ESR 2016 review, which calculated an adult maximum exposure level, using New Zealand data, of $3.8 \mu\text{g}/100 \text{ cm}^2$.

2.2 Key steps to determine the presence of methamphetamine contamination and the need for decontamination

2.2.1 Health and safety

During the initial stages of assessing a property for methamphetamine contamination all personnel who enter a property suspected of being contaminated shall take all practicable

steps to minimise their exposure to contamination by methamphetamine or other hazardous substances that may be present. Proper safety measures shall continue to be taken during decontamination and until clean-up is completed and the property is cleared as safe to reoccupy (see 4.2 and the requirements of the Health and Safety at Work Act).

NOTE – If other hazardous substances are present, advice on dealing with those substances should be obtained from the relevant territorial authority or regional council.

2.2.2 Screening assessment and detailed assessment of property for methamphetamine contamination

Screening assessment (see 3.2) or detailed assessment (see 3.3) of a property for possible methamphetamine contamination could be undertaken if there is evidence or suspicion of methamphetamine production or use likely to lead to contamination that creates a health risk for occupants, particularly young children.

Table 1 outlines the methods to determine methamphetamine contamination in a property.

Figure 1 outlines the actions to determine methamphetamine contamination in a property, which are as follows:

- (a) When undertaking a contamination-level assessment (see section 3) using the sampling and testing methodology in Appendix A, there are two courses of action:
 - (i) Option 1 is where a screening assessment (see 3.2) is undertaken by a screening sampler based on screening technology (validated in accordance with Appendix B) or laboratory-based screening protocols as an initial step to confirm if there is methamphetamine contamination, before determining the need for any further sampling and testing to quantify the level of methamphetamine present
 - (ii) Option 2 is where a detailed assessment (see 3.3) is undertaken by an accredited sampler, based on sampling and NIOSH testing methodology (Appendix A), to determine the extent and magnitude of any methamphetamine contamination;
- (b) Where a screening assessment is carried out (see 3.2.5) and results show that the property is not contaminated by methamphetamine, a screening assessment report (see 3.2.6) should be issued stating that this is the case;
- (c) If the screening assessment produces a positive result indicating the presence of methamphetamine, a detailed assessment shall be carried out in accordance with 3.3 and Appendix A to determine how much methamphetamine is present and where;
- (d) If the detailed assessment shows that the level of methamphetamine present in the property is below the relevant decontamination level (see 2.1), a detailed assessment report (see 3.3.6) can be issued stating that this is the case.

2.2.3 Decontamination, post-decontamination, and clearance requirements

Where a detailed assessment shows that a property is contaminated above the limits in this standard (see 2.1), it shall undergo decontamination as outlined in section 4. On completion of the decontamination works by the decontamination contractor the following actions shall be completed:

- (a) An accredited sampler shall carry out post-decontamination sampling and testing to determine whether decontamination has been effective in reducing levels of methamphetamine (see 5.2);



- (b) The accredited sampler shall record details of sampling in a sampling plan (see 5.4);
- (c) If post-decontamination sampling shows that the property has been decontaminated to 1.5 µg/100 cm² or less (or 3.8 µg/100 cm² or less in the case of limited-use areas), the accredited sampler shall confirm this and record it in a post-decontamination report (see 5.5);
- (d) If the property has not been decontaminated successfully, it shall undergo further decontamination and testing;
- (e) If sampling and tests undertaken by an accredited sampler confirm that the level in the samples taken are within the limits in this standard (see 2.1), the accredited sampler shall advise the decontamination contractor who can then issue a clearance report and certificate (see 5.6) to the property owner or manager;
- (f) All reports on screening, sampling, testing, and decontamination of a property shall be attached to, and form part of, any clearance report and certificate (see 5.6).

Table 1 – Sampling methodologies approved for assessment type

Sampling method	Screening assessment (see 3.2)	Detailed assessment (see 3.3)	Post-decontamination assessment (see 5.5)	Determining if the property is contaminated	When will decontamination be required? ^a	When will a clearance certificate be issued?
NIOSH discrete wipe sample (A2.1)	✓ ^b	✓	✓	See 3.3.5	See 3.3.8	See 5.6.2
NIOSH field composite (A2.2)	✓	×	×	See 3.2.5	N/A	N/A
NIOSH laboratory composite (A2.3)	✓	× ^c	✓	See 3.2.5	N/A	See 5.6.2
Other approved screening tests (A2.6)	✓	×	×	See 3.2.5	N/A	N/A
N/A This assessment cannot be determined using this method						
✓ This method is approved for this assessment						
× This method is not approved for this assessment						
^a Subsequent phases of decontamination may be triggered based on assessments other than a detailed assessment, such as a failed post-decontamination assessment (see 2.2.3).						
^b The discrete wipe sample results may be utilised to either determine if the property is contaminated above the limits in this standard in the initial phase of an investigation, or to clarify whether a detailed assessment is required following a positive in-field result, or a positive but low field-composite result. Using the discrete wipe sample technique in the initial phase of an investigation, however, is likely to incur a greater expense compared to other screening assessment methods, and is therefore not recommended.						
^c A laboratory composite may be 'de-composited' and the individual sample results utilised to either determine if the property is contaminated above the limits in this standard, or to support further detailed assessment sampling.						

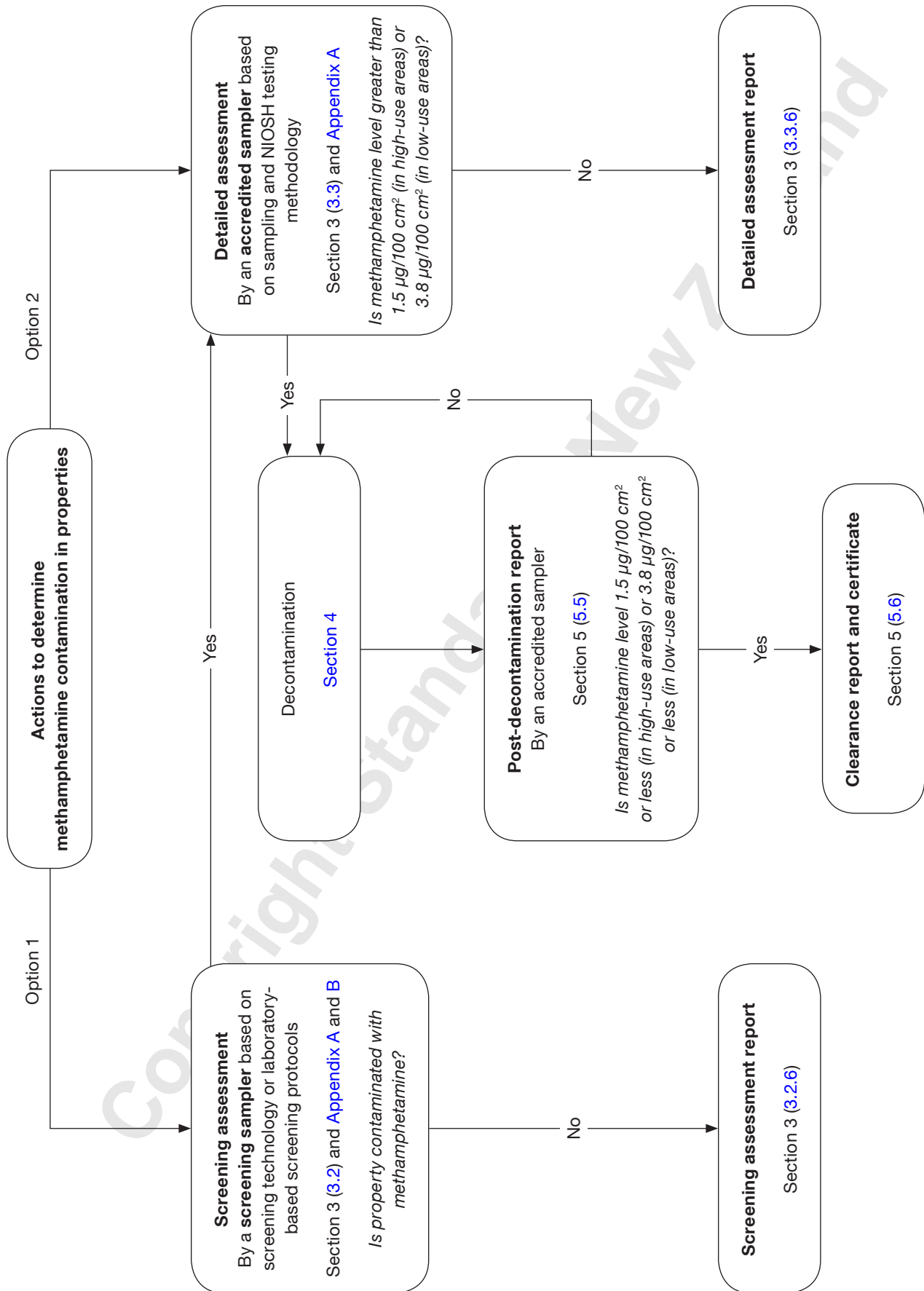


Figure 1 – Actions to determine methamphetamine contamination in properties

3 CONTAMINATION-LEVEL ASSESSMENT

3.1 Overview of contamination-level assessment

3.1.1 Three phases

This section provides guidance on undertaking a contamination-level assessment of a known or suspected methamphetamine-contaminated property. A contamination-level assessment consists of three phases that aim to:

- (a) Determine the presence or absence of methamphetamine contamination;
- (b) Determine the extent and magnitude of any methamphetamine contamination (if present);
- (c) Provide input to the design of any decontamination works and waste disposal plan (if required).

3.1.2 Contamination-level assessment purpose

The purpose of a contamination-level assessment is to support a decision-making process about whether decontamination of a property is required and, if so, the extent and level of decontamination required.

The outcomes and conclusions that can and cannot be made at the end of each phase shall be communicated to the client prior to undertaking the work.

NOTE – Clearly communicating the limitations of the proposed testing to the property owner or manager before undertaking the work helps ensure that the property owner or manager receives the information and service they need.

3.1.3 Contamination-level assessment phases

A contamination-level assessment should be implemented in phases to ensure that costs associated with the assessment are proportional to the risk of exposure to methamphetamine contamination that the property presents. Different terminology is used to describe these phases, but what is more important are the underlying concepts.

- (a) The first phase is referred to as a screening assessment to determine the presence or absence of methamphetamine contamination (see 3.2). The screening phase can be skipped where there is sufficient evidence to indicate that methamphetamine contamination is more likely than not to be present, for example, where a police investigation has uncovered methamphetamine manufacture at the property;
- (b) The second phase is a detailed assessment to establish the extent and magnitude of any methamphetamine contamination present and determining whether the property requires decontamination (see 3.3);
- (c) The third phase is the development of a decontamination scope of work. This is completed as needed and informs the design of any decontamination works including a waste disposal plan (see 4.3.2).

To provide assurance of independence, an accredited organisation undertaking a contamination-level assessment shall meet the independence and impartiality requirements of their accreditation.

NOTE –

- (1) Guidance on undertaking decontamination of a methamphetamine-contaminated property is provided in [section 4](#).
- (2) Guidance on completing post-decontamination sampling is provided in [section 5](#).
- (3) Guidance on sampling and testing protocols is provided in [Appendix A](#).

3.2 Screening assessment

3.2.1 Screening assessment purpose

The purpose of a screening assessment is to identify the presence or absence of methamphetamine contamination in a property using validated screening tests (see [Appendix B](#)).

This assessment shall be carried out by a trained screening sampler.

Screening samplers shall be independent from decontamination contractors, and avoid any other potential conflicts of interest.

Most in-field screening tests only indicate the presence or absence of methamphetamine. Some in-field screening tests and lab-based screening protocols can return a quantitative result. A positive result using these techniques that shows methamphetamine levels above the limits in this standard shall require a detailed assessment to be carried out by an accredited sampler (see [3.3](#)). See [Appendix A](#) for instructions on interpreting both field and laboratory composite results.

The following sections outline the recommended steps in a screening assessment.

3.2.2 Background information

The purpose of the background information stage of a screening assessment is to gather enough information to develop a sampling strategy, to estimate the number and location of samples that need to be collected, and to generate a project health and safety plan.

The following information should be obtained from the property owner, manager, or occupier (as appropriate):

- (a) Copies of any reports relevant to this standard on previous inspections that have been conducted;
- (b) The number and location of high-use areas and low-use areas in the property;
- (c) If the property has a forced-air heating or cooling system and, if so, the location of the intakes;
- (d) The number and location of exhaust fans from the property;
- (e) If any renovations or extensive cleaning has occurred;
- (f) If the occupier has been notified that testing is to occur; and
- (g) The presence of other occupants or pets that may be present at the property.

Guidance on health and safety precautions is provided in [4.2](#).

3.2.3 Site inspection and sampling

3.2.3.1

The purpose of the site inspection stage of a screening assessment is to indicate the presence or absence of methamphetamine in the property. Therefore, samples are collected from locations that are most likely to have elevated levels of methamphetamine contamination on them. These include:

- (a) The intake points of forced-air heating or cooling systems;
- (b) The intake points of exhaust fans;
- (c) Stained materials or surfaces;
- (d) Near fuse boxes and power points;
- (e) Timber finished with stain, varnish, or polyurethane; and
- (f) Areas of high airflow.

An assessment of factors, such as surfaces recently cleaned, renovated, or painted, that can reduce the presence of methamphetamine on surfaces available to be sampled shall be undertaken, and a record made of sample sites selected.

NOTE – Professional judgement and experience will be needed to determine appropriate sampling locations. The practice of sampling locations that are most likely to have elevated levels of methamphetamine contamination is appropriate for indicating the presence or absence of methamphetamine during a screening assessment. However, if undertaken in isolation from a detailed assessment (see 3.3), the practice alone is not suitable for determining the need for decontamination action.

3.2.3.2

Sampling shall be conducted using the approved techniques specified in [Table 1](#) (see [2.2](#)). The sampling technique shall be consistently applied throughout the property.

Where the nature of the surface being sampled means a 10 × 10 cm template cannot be used for taking a sample, the area sampled shall be recorded. This should be as close to an area of 100 cm² as the surface being sampled will allow.

3.2.3.3

A minimum of one sample shall be taken from every high-use area. However, where not all high-use areas are able to be sampled, the screening assessment report shall document those areas where sampling did not occur, and the rationale for not doing so. For the purposes of a screening assessment, samples collected from multiple high-use areas may be composited together.

Any additional samples collected by the screening sampler shall be done in consultation with the property owner or manager.

3.2.3.4

The limits in this standard are not applicable to personal possessions, but where sampling of personal possessions is conducted, with the approval of the possessions owner, it shall be completed in a manner that means the results from the personal possessions are clearly differentiated from the property in which the possessions are located.

3.2.3.5

Sampling locations shall be accurately recorded using one or a combination of the following methods:

- (a) Written description of sample location;
- (b) Offset measurements from a fixed point (for example, a doorway);
- (c) Photographs;
- (d) A floor plan; or
- (e) Video recordings.

As a minimum, sample location records shall include the type of area (high-use or low-use), the type of surface (such as tiles, coated or uncoated timber, concrete), and the location within the area where the sample was taken.

3.2.4 Testing of samples and field blanks

3.2.4.1

Screening assessment sample test results shall be examined to determine the presence or absence of methamphetamine contamination and the need for a detailed assessment.

A photograph of the screening test result shall be taken and included as part of the screening assessment report. The photograph shall include a date and sample identification reference.

Screening test methods shall be validated according to [Appendix B](#).

Samples taken for laboratory analysis shall be analysed by the laboratory using the approved methods listed in [Appendix A](#). Where samples are analysed by a laboratory, the resulting laboratory report shall be included in the screening assessment report.

3.2.4.2

The objective of the field blank is to ensure that consumables used for sampling remain free of contamination and to demonstrate that cross-contamination has not occurred.

A screening sampler shall complete at least one field blank during their first assessment and then field blanks at a ratio of 1 per 20 sample results.

The results of the field blank(s) shall be held as a quality assurance record for individual screening samplers, and made available to clients, tenants, property owners, and regulators upon request.

The results of the field blank(s) shall include the date and batch details of each.

The field blank shall be performed by swabbing a clean surface material (for example, ceramic tile) taken into the field location, or by removing the swab and wiping the surface of gloves being used.

NOTE –

- (1) A field composite made up of multiple primary samples is considered a single sample result.
- (2) A laboratory composite made up of multiple primary samples is considered a single sample result.

3.2.5 Determining if the property is contaminated by methamphetamine based on screening assessment

For the purpose of this standard, a property will be determined to be contaminated with methamphetamine based on a screening assessment if:

- (a) The screening assessment undertaken complies with 3.2.3 and 3.2.4; and
- (b) A positive indication of methamphetamine presence is detected by an Appendix B approved screening methodology; or
- (c) The laboratory results of a field composite that is made up of individual samples:
 - (i) Collected in both high-use and limited-use areas, are above the 2.1.2 decontamination level; and no adjustment of the laboratory result or guideline value has been completed, and
 - (ii) Collected only from high-use areas, are above the 2.1.2 decontamination level; and no adjustment of the laboratory result or guideline value has been completed, and
 - (iii) Collected only from limited-use areas, are above the 2.1.3 decontamination level; and no adjustment of the laboratory result or guideline value has been completed; or
- (d) The laboratory results of a lab composite that is made up of individual samples:
 - (i) Collected in both high-use and limited-use areas, are above the 2.1.2 decontamination level; following adjustment of the laboratory result (see A2.5.2), and
 - (ii) Collected only from high-use areas, are above the 2.1.2 decontamination level; following adjustment of the laboratory result, and
 - (iii) Collected only from limited-use areas, are above the 2.1.3 decontamination level; following adjustment of the laboratory result.

3.2.6 Reporting

A screening assessment report shall include:

- (a) The date of the screening assessment;
- (b) The address or description of the property or asset;
- (c) The screening sampler who conducted the screening assessment, including their qualifications, a statement of any interest the screening sampler has in the property or asset, for example as the property owner, landlord, purchaser, tenant, vendor, or manager;
- (d) A description of the property layout that describes the sampling locations;
- (e) The method used to collect samples;
- (f) The methodology employed to analyse the samples;
- (g) The limitations of the sampling and testing methodology employed, including but not limited to: areas not sampled and the rationale for this; and factors which may influence the outcome of the test result, such as prior cleaning or renovation of surfaces;
- (h) The results of the sampling, including photographs of screening tests, or copies of any laboratory analytical report (if relied upon);

- (i) A conclusion confirming the presence or absence of methamphetamine contamination at the property based on the requirements in 3.2.5.

NOTE – Recommendations on next steps could include undertaking a detailed assessment (see 3.3).

3.3 Detailed assessment

3.3.1 Detailed assessment purpose

The purpose of a detailed assessment is to determine the extent and magnitude of any methamphetamine contamination and inform the design of any decontamination works and waste disposal plan (if required). A detailed assessment may follow a positive screening assessment or bypass such a test if contamination is already suspected or known to exist. A detailed assessment shall be carried out by an accredited sampler.

An accredited sampler or organisation undertaking a detailed assessment shall meet the independence and impartiality requirements of their accreditation.

The detailed assessment includes comparing the results of the laboratory analysis with the limits in this standard to determine whether the property requires decontamination.

3.3.2 Background information

The purpose of the background information stage of a detailed assessment is to gather enough information to develop a sampling strategy in order to estimate the number and location of samples that need to be collected, and to generate a project health and safety plan.

The following information should be obtained from the property owner, property manager, or occupier (as appropriate):

- (a) Copies of any reports on previous inspections that have been conducted;
- (b) Copies of any available reports or correspondence that identify whether a property has been contaminated by methamphetamine;
- (c) Information that would indicate soil contamination;
- (d) The number and location of high-use and low-use areas in the property;
- (e) If the property has a forced-air heating or cooling system and, if so, the location of the intakes;
- (f) If any recent renovations or extensive cleaning has occurred;
- (g) The number and location of exhaust fans within the property;
- (h) If the site has an on-site waste water system;
- (i) If occupant consent has been given for testing to occur;
- (j) The presence of other occupants or pets at the property.

Guidance on health and safety precautions is provided in 4.2.

NOTE – For properties found to have high levels of contamination before decontamination, or that were clandestine labs, it may be appropriate to sample and test for contaminants other than methamphetamine. For properties that have been contaminated by other chemicals used in the manufacture of methamphetamine that are not covered in this standard, advice should be obtained from the relevant territorial authority (council) on any further testing or decontamination that may be required.

3.3.3 Site inspection and sampling

3.3.3.1

Factors to consider when determining appropriate sample locations and numbers include:

- (a) Subject to 3.3.3.4, at least one sample shall be taken from every high-use area in the property;
- (b) Any area separated from another area by a door shall be considered a separate area;
- (c) Limited-use areas may be suitable for sampling if, as a result of extensive redecoration or renovation elsewhere in the property, such areas provide insight into the history of methamphetamine contamination in the property;
- (d) For high-use areas greater than 10 m² of floor space an additional surface shall be sampled for each additional 10 m² or fraction thereof;
- (e) For structures that have no defined high or low-use areas (for example, open-plan areas), a surface shall be sampled for every 10 m² of floor space;
- (f) If surfaces are sampled that are likely to give low swabbing recovery, such as unpainted wallpaper, bare plasterboard, concrete, and bare timber, an additional surface in the high-use area shall be sampled; and
- (g) If surfaces that are likely to give high swabbing recovery are sampled, such as varnished or stained timber, heat pumps, vents, and heat-transfer systems, an additional surface in the high-use area shall be sampled.

3.3.3.2

Detailed assessment sampling shall be conducted using the techniques specified in Table 1 (see 2.2). The sampling technique shall be consistently applied throughout the property.

Any additional samples collected by the accredited sampler should be done so in consultation with the property owner or manager.

When determining sample site selection the following shall be considered:

- (a) The range of material types (for example, painted plasterboard, painted or varnished timber, or concrete) – this is important as methamphetamine retention varies with different materials and coating types;
- (b) The texture of proposed sampling locations. Greater recovery rates of methamphetamine are more likely on smooth, non-porous surfaces when using surface wipe sampling (Martyny 2008);
- (c) Locations on large surface areas (for example, walls and ceilings) that are likely to show relatively high contamination levels; and
- (d) Surfaces that can be difficult to decontaminate, for example bare concrete, timber framing, certain types of tiles, and powder-coated metals.

3.3.3.3

An assessment of factors, such as recent cleaning or renovation and painting, that may reduce or temporarily mask the presence of methamphetamine on the surfaces available to be sampled shall be undertaken, a record made, and sample site selection influenced accordingly.

If background information indicates that a property has been recently renovated, sample collection shall target surfaces that have not been recently painted or were present before or at the time the contamination event or events are thought to have occurred.

To determine which surfaces to target in a recently painted or renovated area, background information should first be obtained on when and where painting and renovations have occurred (for example, walls in high-use areas may have been painted but not the insides of cupboards or wardrobes).

As methamphetamine can migrate between paint layers, if sanding back layers of paint or conducting 'double swabbing' (where a second swab sample is taken in the same spot), care shall be taken when interpreting results due to the risk of recovering elevated levels.

3.3.3.4

Where not all high-use areas are able to be sampled (such as inaccessible areas), the report shall document those spaces where sampling did not occur, and the rationale why those spaces were not sampled.

3.3.3.5

The limits in this standard are not applicable to personal possessions, but where sampling of personal possessions is conducted, with the approval of the possessions' owner, it shall be completed in a manner that means the results from the personal possessions are clearly differentiated from the property in which the possessions are located.

3.3.3.6

At least one field blank sample shall be taken at each site. After that, field blank samples shall be taken at a ratio of 1:20 discrete wipe samples.

The field blank shall be performed by swabbing a clean surface material (for example, ceramic tile) taken into the field location, or by removing the swab and wiping the surface of the gloves being used.

3.3.3.7

Sampling locations shall be accurately recorded using one or a combination of the following methods:

- (a) A written description of the sample location;
- (b) Offset measurements from a fixed point (for example, a doorway);
- (c) Photographs;
- (d) A floor plan; or
- (e) Video recordings.

As a minimum, sample location records shall include the type of area (high-use or low-use), the type of surface (such as tiles, coated or uncoated timber, concrete), and the location within the area where the sample was taken.

3.3.3.8

A visual inspection of the grounds shall be conducted to identify potential soil contamination issues such as burn pits and chemical containers being stored outdoors.

Photographs and notes shall be taken to record any observations that could indicate the manufacture of methamphetamine has occurred. Site information relevant to subsequent stages of work (for example, decontamination) shall be recorded including (as appropriate):

- (a) Stained or varnished timber;
- (b) Areas where hazardous materials have been stored;
- (c) The presence of odours;
- (d) If the property has an on-site waste water system;
- (e) The presence and location of ventilation system components and exhaust fans;
- (f) Structural features that may indicate separate functional spaces, such as attics, false ceilings and crawl spaces, basements, closets, and cabinets; and
- (g) Burn pits, outside disposal areas (such as drains), and outside storage areas.

These are recorded to assist in determining the likelihood of soil contamination.

3.3.4 Testing of samples

Samples for laboratory analysis shall be analysed by an NZS ISO/IEC 17025 accredited laboratory using the approved methods listed in [Appendix A](#).

3.3.5 Determining if the property is contaminated by methamphetamine based on detailed assessment

For the purpose of this standard, a property is determined to be contaminated by methamphetamine based on a detailed assessment if:

- (a) The detailed assessment complies with [3.3.3](#) and [3.3.4](#); and
- (b) The laboratory result of a single discrete wipe sample is reported above the relevant decontamination level in [2.1](#).

3.3.6 Reporting

A detailed assessment report shall include:

- (a) The date of the detailed assessment;
- (b) The address or description of the property or asset;
- (c) The accredited sampler who conducted the detailed assessment;
- (d) A description of the property layout that describes the sampling locations;
- (e) Dimensions of areas sampled, to demonstrate compliance with 3.3.3.1. These may be approximated;
- (f) The location of the sampling points and the rationale for selecting the locations (see 3.3.3);
- (g) The method used to collect samples;
- (h) The analysis methodology employed;
- (i) The limitations of the sampling and testing methodology employed, including but not limited to: areas not sampled and the rationale why they were not sampled; and factors which can influence the outcome of the test result, such as recent cleaning and renovation;
- (j) The results of the sampling including copies of the laboratory analytical report;
- (k) A conclusion confirming the extent and magnitude of methamphetamine contamination at the property based on the requirements in 3.3.5;
- (l) The accreditation body endorsement related to the organisation responsible for the detailed assessment report.

NOTE – Additional information in a detailed assessment report could also include:

- (a) Details of building materials, electrical fittings, and chattels present;
- (b) Identifying areas where recent redecoration works have occurred (painting and so on);
- (c) Recommendations on next steps (if required); and
- (d) Site information relevant to subsequent stages of investigation and decontamination (if required).

3.3.7 Recommendations on next steps

Recommendations on next steps may include:

- (a) Details of decontamination required;
- (b) A decontamination scope of work (see 4.3.2); and
- (c) Vacating the property during decontamination, for health and safety reasons.

3.3.8 Decontamination recommendations

3.3.8.1

The purpose of decontamination recommendations is to provide input to the design of any decontamination works and waste disposal recommendations (see [section 4](#)).

Decontamination recommendations are made after a detailed assessment has identified the extent and magnitude of methamphetamine contamination.

3.3.8.2

Decontamination recommendations shall:

- (a) Be included in the detailed assessment report when a surface concentration result for methamphetamine is greater than the limits in this standard;
- (b) Identify specific areas and materials that require decontamination;
- (c) Be based on evidence, published research, and good practice;
- (d) Be used to guide decontamination; and
- (e) Cover:
 - (i) Removal and disposal of refuse and possessions
 - (ii) Removal and disposal of soft furnishings, such as carpet and curtains
 - (iii) Removal and disposal of appliances used for food storage and preparation
 - (iv) Removal and disposal of insulating materials if there is potential for exposure via an internal access hatch or vent, or if ceiling linings are to be removed
 - (v) Application of cleaning products, sanding or grinding, or removal of materials in specific areas, such as timber flooring, window sills, surrounds, architraves, doors, door frames, and concrete floors.

The final scope of work shall be confirmed by the decontamination contractor after consultation with the property owner or manager (see [4.3.2](#)).

3.3.8.3

The limits in this standard are not applicable to soil contamination, but if potential soil concerns (for example, burn pits and vegetation anomalies) are identified and the production of methamphetamine is suspected, a suitably qualified and experienced contaminated-land assessor should be contacted. Soil assessments are beyond the scope of this standard.

4 DECONTAMINATION

4.1 Objective of decontamination

The objective of decontamination is to reduce the methamphetamine contamination levels in a property so that they do not exceed the limits in this standard (see 2.1).

4.2 Hazards and contaminants

Adequate safety precautions shall be taken by everyone who enters a contaminated property before decontamination is completed. For further information on safety measures refer to the WorkSafe New Zealand factsheet *Protecting workers from the dangers of clandestine laboratories* (2015).

All persons who enter a former clandestine lab or a property suspected or known to be contaminated with methamphetamine shall be trained in health and safety measures, and shall wear appropriate personal protective equipment (PPE), based on site-specific conditions, to minimise exposure to methamphetamine and other harmful chemicals. PPE should include protective clothing, gloves, eye protection, and respiratory protection.

All persons undertaking decontamination activities shall assess whether additional hazards exist in the property.

NOTE – Additional hazards include asbestos and lead that can be present, particularly in older properties. In properties that are suspected of being used as a clandestine lab, additional hazards could include heavy metals, organic solvents, and other chemicals. Decontamination contractors should consult with appropriate professionals and local councils who can determine the risks and advise property owners or managers and contractors on how to deal with additional hazards.

4.3 Decontamination process

4.3.1 Decontamination process steps

Steps in the decontamination process typically include but are not limited to:

- (a) Developing a scope of work based on the detailed assessment report;
- (b) Ventilate all areas, where practicable;
- (c) Decontaminate or remove and dispose of contents;
- (d) Check ventilation systems and heat pumps;
- (e) Vacuum interior surfaces using a high-efficiency particulate air (HEPA) filter vacuum, as required;
- (f) Clean all interior surfaces using a three-stage process (see 4.3.7.3);
- (g) Flush plumbing traps;
- (h) Encapsulate structural surfaces after first attempting to decontaminate such surfaces;
- (i) Dispose of waste at a contaminated waste disposal site; and
- (j) Prepare a decontamination report on completion of the process.

4.3.2 Develop a scope of work based on the detailed assessment report

The scope of work shall reference the test results and other information obtained during the detailed assessment, describe health and safety measures to be taken, and describe the decontamination methods that are proposed.

The description of the cleaning methods shall, where relevant, include:

- (a) Area(s) to be decontaminated;
- (b) Target cleaning level;
- (c) A list of the items to be removed from the property;
- (d) Items to be cleaned on-site and off-site;
- (e) Location, layout, and procedures for on-site decontamination;
- (f) A list of the surfaces to be cleaned on-site;
- (g) Cleaning materials and procedures;
- (h) Validation documentation for cleaning products to be used;
- (i) Areas to be encapsulated after cleaning, and the methods and materials of encapsulation;
- (j) The need for any signage in limited-use areas, if required (see 4.3.4.4);
- (k) Methods of ventilation, and steps to secure the property and protect against adverse weather conditions during ventilation;
- (l) Methods to be used to prevent off-site contamination; and
- (m) Methods of disposal of contaminated material.

Carpets shall be removed from areas of the property that are contaminated above the limits in this standard. Carpets in other areas of the property that are below the limits in this standard shall, as a minimum, be vacuumed with a HEPA-filter vacuum cleaner and then steam cleaned.

Where the nature of the surfaces of key structural components cannot be adequately decontaminated, removed or replaced, and despite repeated decontamination attempts they fail to meet the limits in this standard, such surfaces shall be encapsulated. The methods and materials of encapsulation of such structural components shall be detailed on any clearance report.

4.3.3 Ventilate all areas

The property shall be thoroughly ventilated before, during, and after decontamination activities, where practicable. Open all doors and windows and use fans, blowers, or a negative air machine equipped with a HEPA filter. Any heating, ventilation, and air-conditioning (HVAC) system, if fitted for ventilation, shall not be used as doing so could spread contamination to previously uncontaminated or decontaminated areas of the property. Take precautions to avoid discharging exhaust air to air intakes of adjacent structures.

After the initial airing, ventilation shall continue throughout the decontamination activity.

The property shall be protected from adverse weather effects during decontamination.

Recommended ventilation steps include:

- (a) Pre-decontamination ventilation: The property shall be ventilated prior to commencement of decontamination activities. Ventilation shall be performed for a minimum of 24 hours and preferably 48 hours prior to undertaking further decontamination activities;
- (b) Continued ventilation: Ventilation shall be continued throughout the decontamination process. To protect testing or decontamination operators and to limit cross-contamination, leave windows open or install a negative air unit with a HEPA filtration system during decontamination. A negative air unit equipped with a HEPA filtration system will limit or prevent the transfer of airborne contamination from contaminated areas to clean areas; and
- (c) Post-decontamination ventilation: The property shall be ventilated for a minimum of 2 days after decontamination is completed. After cleaning and ventilating the property, recheck for new staining and odour (the presence of which would indicate that additional cleaning is necessary).

NOTE – When ventilating a property, especially over extended periods, it is advisable to consider measures to secure the property and protect it from the effects of adverse weather conditions.

4.3.4 Decontamination of contents

4.3.4.1 Avoiding recontamination

To avoid recontamination of cleaned areas and items:

- (a) Items that are cleaned on-site shall be bagged or wrapped in plastic after they have been cleaned, or removed and cleaned and stored off-site;
- (b) Removed items shall not be returned until the items have been tested and shown to be decontaminated; and
- (c) Items shall not be returned to the property until the property has received a clearance certificate.

4.3.4.2 Removal and disposal

Items to be removed and properly disposed of at an approved facility include:

- (a) Materials that are visibly stained, emitting odour, damaged, or likely to have been used in methamphetamine production processes, such as a refrigerator used for storing precursor chemicals;
- (b) Materials that are absorbent and difficult to clean, including carpeting, wallpaper, soft board and plasterboard building materials, paper materials (books, documents), and soft furnishings such as couches, mattresses, and thermal-backed curtains; and
- (c) Items with a high potential for human contact and not able to be readily decontaminated, such as children's toys, bottles and food-preparation surfaces and items.

All contaminated items to be disposed of shall be made unusable so they cannot be recycled or reused.

If an item is of significant sentimental, monetary, or legal value, the owner shall be consulted on whether to discard the item or attempt to decontaminate it.

4.3.4.3 Removal of insulation

The following criteria shall apply when deciding whether the removal of insulation is required:

- (a) If the ceiling or wall linings are not removed, insulation stays *in situ*;
- (b) Areas where the ceiling has been penetrated, such as by vents and hatches, should be retested following the procedures outlined in [section 3](#);
- (c) If the ceiling of a high-use area has been partially removed, only the insulation in that area shall be removed.
- (d) Where loose-fill insulation, mineral wool insulation or chopped glass wool insulation is present it shall be removed from the ceiling space.

NOTE – A ceiling space is considered a limited-use area.

4.3.4.4 Precautions – limited-use areas

When contamination levels in limited-use areas are $3.8 \mu\text{g}/100 \text{ cm}^2$ or less, but above $1.5 \mu\text{g}/100 \text{ cm}^2$, or limited-use areas have been decontaminated to $3.8 \mu\text{g}/100 \text{ cm}^2$ or less, but above $1.5 \mu\text{g}/100 \text{ cm}^2$, the following shall be performed:

- (a) The decontamination contractor shall prepare signage, including the contractor's contact details, which shall be prominently displayed within the affected area advising that at a specified date, testing has determined that methamphetamine contamination is at a level of $3.8 \mu\text{g}/100 \text{ cm}^2$ or less, but above $1.5 \mu\text{g}/100 \text{ cm}^2$, and that precautionary actions should be taken when accessing the limited-use area; and
- (b) Tenants shall be made aware, for example in the tenancy agreement, of the potential risks in the ceiling space and that they should not use the space as storage.

NOTE – These precautions are required if contaminated insulation is to be retained as the rate of re-emission of methamphetamine from insulation and diffusion back into other high-use areas is currently unknown.

4.3.5 Check ventilation systems and heat pumps

Some forced-air system ducts cannot be decontaminated because of the nature of the material they are lined with, such as fibreglass. In addition, flexible ducting often contains a porous inner surface, which in most cases means that decontamination is not feasible. For this reason the ducting should be discarded and replaced after the forced-air system has been decontaminated.

NOTE – Adequate cleaning of forced-air system can require specialist training and tools.

Where dwellings have heat pumps, the decontamination of these appliances shall be assessed on a case-by-case basis with a focus on their proximity to contaminated areas.

In respect of any goods including heat pumps supplied under a contract, it is the owner's responsibility for the correct operation and regular maintenance of the equipment listed on a warranty. Before any decontamination is carried out on a heat pump appliance, the owner should consult the manufacturer about any proposed decontamination.

Where the risk of contamination from a heat pump is low and removal of the entire unit is not cost-effective, replacing the indoor unit may be considered.

NOTE – The advice of the heat pump manufacturer or installer should be obtained on whether the unit can be decontaminated or should be replaced.

4.3.6 Vacuum interior surfaces using a high-efficiency particulate air (HEPA) filter vacuum

After removing contaminated materials to be permanently discarded, thoroughly vacuum all surfaces with a vacuum equipped with a HEPA filter. Vacuuming with a HEPA filter effectively removes particulate contamination as well as dust and cobwebs that may interfere with washing. HEPA vacuuming alone is not sufficient to decontaminate most surfaces.

NOTE – Household vacuums are not recommended since they lack adequate filtration and can further spread contaminants.

4.3.7 Clean all interior surfaces

4.3.7.1 Decontamination or removal of building materials

Depending on the level of contamination, the decontamination contractor shall consult with the property owner or agent and decide whether decontamination or removal of building materials is required. This decision will be based on a number of considerations, including cost and whether it is cheaper to remove rather than decontaminate the material, and whether the surface is a critical part of the structure that cannot be removed.

NOTE – It is important that appropriate professional advice is obtained on whether it is safe to remove any material that is likely to be a critical part of the property's structure and may require a building consent.

4.3.7.2 Cleaning products

Cleaning products shall:

- (a) Be safe to use;
- (b) Be used in accordance with manufacturers' specifications and instructions;
- (c) Be effective for removing methamphetamine to the limits in this standard;
- (d) Have no long-term adverse effects;
- (e) Not contain ammonia or strong oxidising agents that may give rise to any harmful reaction products or reversion to methamphetamine.

4.3.7.3 Cleaning process

If a surface is to be cleaned, the entire surface, and not just spots, shall be covered by the cleaning step(s). The typical procedure is to start with the ceiling, then from the top to the bottom of the walls and finally the floor. Follow the wash with a thorough rinse using clean water and clean rags. Change the wash solution, the rinse solution and rags frequently. Allow the surfaces to thoroughly dry and then repeat the wash and rinse steps at least two additional times.

4.3.7.4 Disposal of contaminated water

Wash and rinse water typically shall be disposed of via the property's drainage system, provided that it is connected to a public sewer. The concentration of cleaning solutions can affect the functioning of an on-site waste water system (septic tank). If the property is not served by public sewerage, the wash and rinse water shall be collected for proper off-site disposal. Another option is to arrange for a sewage pumping operator to empty the septic tank before decontamination begins to provide storage capacity in the tank for wash and rinse water, and then empty the tank again before the liquid reaches the effluent outlet on the tank.

4.3.8 Flush plumbing traps

Plumbing fixtures and fittings with visible signs of contamination such as etching or staining shall be removed and permanently discarded as they will be difficult to clean. Porcelain and stainless steel fixtures in which the surface is not pitted or damaged shall be cleaned using the procedures outlined in 4.3.7.3. When staining is noted around plumbing fixtures or if a strong chemical odour is emitted by the plumbing system, the drain system shall be flushed using a generous amount of water. The entire plumbing system shall be flushed at the same time.

Different steps may be required for the plumbing system of a property served by an on-site sewage disposal system than for one served by a public sewerage system as outlined in 4.3.7.4. Plumbing systems shall be checked to ensure that there are no illegal discharges of sewage to the ground, to surface water, or to storm-water systems.

In instances where the property is served by an on-site sewage disposal system or an illegal discharge system is encountered, the appropriate authorities (district or city council) shall be contacted for instructions prior to flushing traps or disposing of any liquid into the drainage system.

Additionally, if the wash and rinse water from the decontamination process is disposed of via the property's drainage system, flushing the system should be delayed until that part of the decontamination is completed.

4.3.9 Encapsulate structural surfaces

Encapsulation after decontamination is only recommended for structural elements, such as supporting columns that are not safe to remove from the property or asset. Encapsulation shall only be attempted after post-decontamination testing shows that cleaning or coating removal attempts have been effectively exhausted, and levels of contamination cannot be significantly reduced by further cleaning.

Encapsulation of surfaces with primers, paint, and other sealants provides additional protection against the migration of contaminants to the surface of the material.

Oil-based or epoxy coatings, or other materials that have demonstrated ability to act as an effective barrier against the solvent effect of methamphetamine, shall be used to encapsulate surfaces. A minimum of two coats is necessary.

Surfaces shall be primed with a high quality, oil-based primer that will be durable over time and meets the recommendations of the finish-coat manufacturer. The manufacturer's recommendations for application methods, thickness, and drying or curing time between coats shall be followed. Complete coverage of the surface is important and may require multiple applications of finish.

Spray application can provide more thorough coverage than hand-rolling and is therefore recommended in many decontamination guidelines, particularly for textured plaster and plasterboard surfaces that could be damaged by hand rolling.

NOTE – Encapsulation is not a substitute for decontamination.

4.3.10 Dispose of waste

In addition to clause 4.3.4.2, the following shall be performed when disposing of waste:

- (a) Waste bins shall be lined and covered with a minimum of 200 micron polythene before removal of waste;
- (b) All materials removed from a meth-contaminated site shall be treated in accordance with the appropriate local authority requirements as contaminated waste;
- (c) Evidence of appropriate waste disposal shall be obtained from the waste remover and submitted to the decontamination contractor;
- (d) The evidence shall be made available to the property owner or manager as part of the clearance report and certificate.

NOTE – Where appropriate, a ‘crush and bury’ certificate should be obtained from the waste disposal operator to certify that the contaminated material has been properly disposed of.

4.3.11 Prepare a decontamination report on completion of the process

After decontamination has been completed, the following items shall be included in a post-decontamination report on the property:

- (a) The physical address of the property and a description of the layout of the property;
- (b) A summary of the scope of works, including any known information about chemicals that were present and removed from the site both before and during the decontamination process;
- (c) Variations from the original scope of work and decontamination recommendations, such as the removal of other contaminants (for example, asbestos) discovered during decontamination;
- (d) The names and qualifications of the decontamination contractors and technicians;
- (e) Confirmation that the decontamination was completed, including a description (with photographs) of the areas that were decontaminated and the methods used;
- (f) The waste management procedures, including handling and final disposal of waste;
- (g) Details of the location and extent of any encapsulated elements of the property, including the nature of the encapsulation and a warning that future disturbance of these areas could result in exposure to methamphetamine contamination.

5 POST-DECONTAMINATION ACTIONS

5.1 Post-decontamination objective

The objective of post-decontamination actions is to gather impartial, reliable information on the decontamination of a property and, if decontamination has been effective, to certify that methamphetamine levels do not exceed the limits in this standard.

5.2 Post-decontamination sampling and testing

When the agreed decontamination work on a property, including the removal of contaminated material, has been completed by the decontamination contractor, the property owner or manager shall request an accredited sampler to carry out sampling and testing to determine the effectiveness of the decontamination work and prepare a post-decontamination report (see 5.5).

If sampling and testing results indicate that contamination is still present above the levels specified in this standard, a clearance report and certificate (see 5.6) shall not be issued. In this case, the property owner or manager will have to decide on future actions after seeking advice from relevant professionals.

Effective measures shall be taken to prevent recontamination of the property after decontamination work is completed. Sampling and testing shall take place as soon as practicable following the completion of the decontamination work.

NOTE – Failure to prevent recontamination could invalidate all previous decontamination, sampling, and testing, and prevent or delay a clearance certificate being issued.

5.3 Sampler accreditation

Irrespective of the party that commissions the sampling and testing, the provider of these services shall be accredited to NZS ISO/IEC 17025 or AS/NZS ISO/IEC 17020, as applicable, with a scope of accreditation that includes the requested work. Providers of inspection, sampling, and testing services shall be independent of persons and organisations that perform decontamination on the same property. Accredited organisations providing sampling and testing services shall meet the specific independence and impartiality requirements specified by the accreditation body for this area of work.

To provide confidence in inspection, sampling, and testing, on which a clearance certificate may be based, reports and certificates for inspection, sampling, and testing shall be endorsed by their accreditation body.

5.4 Sampling plan and requirements

5.4.1 Sampling plan

A draft sampling plan shall be drawn up by an accredited sampler. The sampling plan shall be based on appropriate, documented sampling methods and procedures (see [Appendix A](#)) to provide representative results for specific spaces within the property. The draft sampling plan shall be discussed and agreed between the accredited sampler and the property owner or manager. The accredited sampler shall be satisfied that the plan is capable of providing a representative result on which a clearance certificate can be based. Sampling shall not commence until both parties have approved the sampling plan.

The post-decontamination sampling plan shall take into account at least the following factors:

- (a) The size and layout (complexity) of the property;
- (b) The possible influence of adjoining properties and tenancies;
- (c) Details of the contamination-level assessment sampling plan (see [3.2.3](#) and [3.3.3](#));
- (d) The location, level, and nature of contamination prior to decontamination;
- (e) The nature and location of materials present in the property that have been decontaminated;
- (f) Encapsulated areas, but this should only be considered for structural elements where all reasonably practicable steps to decontaminate have failed to lower methamphetamine contamination levels to the limits in this standard.

The sampling plan shall include the location of samples, the material(s) to be sampled, and the tests to be performed on each sample. The sampling plan shall be designed to confirm the effectiveness of decontamination identified in the detailed assessment.

Sampling sites may be amended from those in the sampling plan based on site observations. A typical reason for amending sampling sites is that areas appear to be dirty or dusty or both. If site observations suggest significant changes to the approved sampling plan are needed, these changes shall be discussed with and approved by the property owner or manager before the amended sampling plan is implemented.

Reporting and interpretation of results shall be in the form of a report endorsed by a laboratory's or accredited sampler's accreditation body.

If laboratory composite sampling is agreed, details of the component samples shall be recorded and retained for at least 30 days following receipt by the laboratory.

5.4.2 Post-decontamination sampling requirements

When completing a post-decontamination assessment:

- (a) Sampling shall be conducted using the approved techniques specified in [Table 1](#) (see [2.2](#)). The sampling technique selected shall be consistently applied throughout the property;
- (b) Field blanks shall be taken as specified in [3.3.3.6](#);
- (c) When using the laboratory composite method, the individual samples which make up the composite sample shall be collected from within an individual area (for example, a single room);
- (d) At least one sample shall be taken from every surface that previously tested above the limits in this standard;
- (e) At least one sample shall be taken from areas where there is a risk of cross-contamination as a result of decontamination activity, where that area previously tested was within the limits in this standard:
- (f) For living spaces greater than 10 m² of floor space an additional surface shall be sampled for each additional 10 m² or fraction thereof;
- (g) For structures that have no living spaces or discrete areas, a surface shall be sampled for every 10 m² of floor space;
- (h) If surfaces are sampled that are likely to give low swabbing recovery, such as bare plasterboard, building paper, concrete, and bare timber, an additional surface in the living space should be sampled;
- (i) If surfaces that are likely to give high swabbing recovery are sampled, such as varnished or stained timber, heat pumps, vents, and heat-transfer systems, an additional surface in the living space should be sampled.

Additional samples shall be collected at the sampler's discretion and processed following consultation with the property owner or manager.

5.4.3 Additional sampling requirements where encapsulation has occurred

Where encapsulation (see [4.3.9](#)) has occurred, representative samples shall be collected to determine the efficacy of the encapsulation work. This sampling is in addition to the sampling requirements outlined in [5.4.2](#).

5.5 Post-decontamination report

When the results of analysis of the samples taken are received from the accredited testing laboratory, the accredited sampler shall produce a post-decontamination report with the accreditation body endorsement. The post-decontamination report shall include, as a minimum:

- (a) The purpose of the decontamination work that was undertaken;
- (b) The sampling plan and rationale;
- (c) Details of the sample test results (including the accredited laboratory's test report);
- (d) Interpretation of the test results.

It is important to attach the accredited laboratory's test report in full to the post-decontamination report. Selected extracts are not acceptable.

5.6 Clearance report and clearance certificate

5.6.1 General

After receiving a post-decontamination report from an accredited sampler stating that decontamination has reduced methamphetamine in the property to a level at or below the limits in this standard, the decontamination contractor shall issue a clearance report and a clearance certificate.

A decontamination contractor shall not issue a clearance certificate unless it is accompanied by a post-decontamination report from an accredited sampler verifying that the property has been decontaminated and that the levels of methamphetamine do not exceed the limits in this standard.

A clearance certificate shall specify the area(s) in the property, covered in the post-decontamination report, that have been decontaminated to the limits in this standard.

5.6.2 Requirements for issuing a clearance certificate

A clearance certificate shall only be issued for a property where:

- (a) The assessment complies with 5.4; and
- (b) Where the NIOSH discrete sample method has been utilised (see A2.1), all laboratory results are below the relevant decontamination level (see 2.1) and no adjustment of laboratory result or guideline value has been completed; or
- (c) Where the NIOSH laboratory composite method has been utilised (see A2.3), all theoretical maximum concentrations of individual samples which comprise the laboratory result (see A2.5.2) are below the relevant decontamination level and no adjustment of guideline value has been completed.

5.6.3 Clearance report contents

A clearance report shall contain at least the following information and documentation:

- (a) The name and contact details of the decontamination contractor that issued the clearance report;
- (b) A unique identification code or number for traceability;
- (c) The date of completion of decontamination works;
- (d) Details of the accredited sampler and the date when samples were taken;
- (e) The address of the property to which the report relates, including unit details for multiple tenancy properties;
- (f) The decontamination scope of work;
- (g) Complete copies of the post-decontamination report that includes sampling and test results with an accreditation body endorsement;
- (h) Evidence of appropriate waste disposal;
- (i) Rationale to support encapsulation and details of encapsulated elements, including precise locations and extent, and a warning that any future work on encapsulated areas could result in exposure to methamphetamine or other chemicals;
- (j) Photographs showing locations where samples were taken for testing, and where decontamination, encapsulation, or any other remedial work took place;
- (k) A statement that the decontamination of the property meets the requirements of this standard.

5.6.4 Clearance certificate contents

A clearance certificate shall contain at least the following information (see example certificate in [Appendix C](#)):

- (a) The name and contact details of the decontamination contractor that issued the clearance certificate;
- (b) The property owner or manager who has requested the certificate;
- (c) A unique identification code or job reference for traceability;
- (d) The address of the property to which the certificate relates, including unit details for multiple tenancy properties;
- (e) The date of completion of decontamination;
- (f) The name or unique traceable identification of accredited sampler(s);
- (g) The date when the samples were taken;
- (h) A statement that the property or any specified part of the property meets the requirements of this standard;
- (i) A reference to areas of encapsulation (if any);
- (j) The post-decontamination report on which the clearance certificate is based, and which should be attached to the clearance certificate, verifying that methamphetamine levels meet the limits in this standard.

6 REPORTING AND DOCUMENTATION

6.1 Reporting and documentation objective

This section summarises requirements of this standard for reports and relevant documents relating to the assessment, decontamination, and clearance of properties affected by levels of methamphetamine above the limits in this standard.

6.2 Reports on stages in the process

Reports to be prepared at each of the assessment, decontamination, and clearance stages include:

- (a) A contamination-level assessment ([section 3](#)):
 - (i) A screening assessment by a screening sampler (see [3.2](#)) to determine the presence or absence of methamphetamine contamination
 - (ii) A detailed assessment by an accredited sampler (see [3.3](#)) to determine the extent and magnitude of methamphetamine contamination;
- (b) A decontamination scope of work by the decontamination contractor (see [4.3.2](#));
- (c) A decontamination report by the decontamination contractor (see [4.3.11](#));
- (d) A post-decontamination report by an accredited sampler on completion of decontamination (see [5.5](#));
- (e) A clearance report and certificate by the decontamination contractor (see [5.6](#) and [Appendix C](#)).

NOTE – In practice, reports mentioned in [6.2 \(a\)\(ii\), \(b\), \(c\), and \(d\)](#) would be attached to and form part of the clearance report and certificate.

6.3 Report recipients

Copies of reports referred to in 6.2 shall be given to those listed under each of the stages in Table 2.

Table 2 – Distribution of reports and recipients

Report	Property owner or manager (commissioner of the report)	Property occupier (tenant)	Decontamination contractor	Accredited sampler
Screening assessment by screening sampler	✓	✓	✓	✓
Detailed assessment ^a by accredited sampler	✓	✓	✓	–
Decontamination scope of work ^a by the decontamination contractor	✓	✓	–	✓
Decontamination report ^a by the decontamination contractor	✓	✓	–	✓
Post-decontamination report ^a by the accredited sampler	✓	✓	✓	–
Clearance report and clearance certificate by the decontamination contractor	✓	✓	–	✓

^a These reports may be combined to form part of a clearance report and certificate.

7 COMPETENCIES

7.1 Competency of screening samplers undertaking screening assessment

A screening sampler undertaking screening assessments (see 3.2) shall have successfully completed a registered NZQA unit standard to demonstrate competence in carrying out validated screening test methods.

NOTE – It is envisaged that in due course NZQA-approved training courses will become available for screening samplers on the correct use of validated screening tests and selection of appropriate sampling locations.

7.2 Competency of accredited samplers undertaking detailed assessments and post-decontamination reports

An accredited sampler undertaking detailed assessments (see 3.3) shall be a suitably qualified and experienced person who is, or is employed by, or authorised to work on behalf of, an AS/NZS ISO/IEC 17020 accredited inspection body or an NZS ISO/IEC 17025 accredited laboratory.

7.3 Competency of testing laboratories undertaking contamination level analysis

A testing laboratory shall be NZS ISO/IEC 17025 accredited, with a scope of accreditation that includes undertaking analysis of samples in accordance with the methods specified in this standard.

7.4 Competency of decontamination contractors

A decontaminating contractor shall demonstrate competence in decontaminating methamphetamine-contaminated properties. Examples of demonstrating competence include:

- (a) Having completed a recognised industry training organisation programme;
- (b) Producing evidence of appropriate knowledge and experience in decontamination work, or supervision of such work;
- (c) Being a member of an appropriate industry association that has a code of ethics relating to decontamination work; or
- (d) Being accredited to undertake decontamination work.

APPENDIX A – SAMPLING AND TESTING METHODOLOGY FOR METHAMPHETAMINE

(Normative)

A1 General requirements

A1.1 Accredited sampler

Those who carry out sampling for methamphetamine, except for screening samplers, shall be an accredited sampler (see 1.4) or authorised to sample on behalf of an accredited body with methamphetamine sampling in their scope of accreditation.

A1.2 Independence from decontamination contractor

To prevent any real or potential conflicts of interest, an accredited sampler who conducts a detailed assessment in accordance with 3.3 of this standard shall be able to demonstrate independence from any decontamination contractor employed to decontaminate the property being assessed, and shall have no personal or financial interest in the assessed property.

A1.3 Testing laboratory accreditation

Testing laboratories shall be accredited under NZS ISO/IEC 17025 for NIOSH methods 9106, 9109, or 9111.

A1.4 Validated screening technologies

Screening technologies shall be validated in accordance with Appendix B. Screening technologies that are not validated shall not be used in carrying out screening assessments under 3.2.

A2 Sampling methodology, in accordance with NIOSH standard analytical methods, or formally validated equivalents

A2.1 Discrete wipe sample collection procedures

A discrete wipe sample shall be taken from a measured area, typically 100 cm², using a technique as outlined in one of the appropriate NIOSH standard methods or a formally validated equivalent method.

A2.2 Field compositing

A2.2.1

Field compositing is the process of combining multiple wipes collected from separate locations within a single room or designated space into one container. The field compositing technique is employed to maximise sampling coverage while reducing the laboratory analysis costs during the screening assessments.

Field compositing shall only be used in screening assessments.

A2.2.2

No more than five discrete wipe samples should be combined in a single field composite sample. The laboratory analysing field composite samples shall adjust the ratio of extractant to wipes (refer to section 14c of NIOSH 9106 and section D3 of NIOSH 9109).

A2.2.3

Each discrete wipe sample shall constitute a single 100 cm² sampling area using a sampling method specified by one of the NIOSH standard methods, or validated equivalent method.

A2.2.4

A field composite sample result represents a sum or accumulation of each of the individual discrete wipe samples. The result also represents the maximum level in any one of the wipes if all the contamination present was contained in one wipe.

If multiple discrete wipe samples are combined in one sample container as a single field composite and the result is at or below the decontamination levels in 2.1.2 or 2.2.2 then none of the areas tested are above the limits in this standard.

If multiple discrete wipe samples are combined in one sample container as a single field composite and the result is above the decontamination levels in 2.1.2 or 2.2.2 then it is possible that one of the areas tested is above the limits in this standard.

See 3.2.5 for evaluating results of a screening assessment against the decontamination levels in 2.1.2 or 2.1.3.

A2.2.5

To interpret a field composite result ($\mu\text{g}/\text{sample}$) as a means of assessing contamination less than the limits in this standard, across a number of living spaces or defined areas, the result of the field composite should be compared directly with the acceptable level in this standard (see 3.2.5). This process assumes the worst case scenario that there may be one sample in the composite exceeding the limits in this standard while all other samples have no contamination. If the field composite result in $\mu\text{g}/\text{sample}$ results is higher than the acceptable level in this standard, then more detailed discrete analyses will be required as there may or may not be any areas exceeding the limits in this standard.

A2.3 Laboratory compositing

A2.3.1

Laboratory compositing is the process of taking multiple discrete wipe samples collected from separate locations in a property according to the procedures outlined in NIOSH methods 9106, 9109, and 9111, and sending them to the laboratory for compositing. The lab extracts discrete wipe samples then combines equal portions of the extracts together to form a new sample called a laboratory composite. A laboratory composite sample result represents an average of each of the individual wipes. The laboratory retains the individual samples for a period of time (usually one month) and can analyse the individuals at a later date to provide discrete wipe sample results.

The laboratory compositing technique is employed:

- (a) To maximise sampling coverage while reducing the laboratory analysis costs during the preliminary sampling and assessment of the property; or
- (b) To obtain better overall average results for a room or defined area.

A2.3.2

No more than 10 discrete wipe samples shall be composited by the laboratory.

For the purposes of a screening assessment it is acceptable to combine discrete wipe samples from multiple areas or rooms into a single laboratory composite. See 3.2 for the requirements of screening assessment sampling.

For the purposes of a post-decontamination assessment it is not appropriate to combine discrete wipe samples from multiple areas or rooms into a single laboratory composite. See 5.4.2 for the requirements of post-decontamination assessment sampling.

A2.3.3

When using a laboratory composite for a screening assessment, see 3.2.5 for evaluating results against the 2.1.2 or 2.1.3 decontamination levels.

When using a laboratory composite for a post-decontamination assessment, see 5.6.2 for evaluating results against the decontamination levels in 2.1.2 and 2.1.3.

A2.4 Chain of custody records

A2.4.1

Maintain either a physical or electronic chain-of-custody record covering the time of sample collection through to delivery to the laboratory and reporting results.

A2.4.2

Document sample(s) collected from a single methamphetamine-affected property on one chain-of-custody record.

A2.4.3

Samples shall be sealed, labelled, and secured. All collected samples shall be transported directly to the laboratory. Shipping samples overnight is considered direct transport, and the shipping label or courier ticket number shall be considered part of the chain-of-custody record. Retain all sample documents for the project record and include them in the project reports.

A2.4.4

At a minimum, the chain-of-custody record shall include the following:

- (a) Subject property address or unique property identifier;
- (b) Sampler name and contact information;
- (c) Unique sample identification;
- (d) Sample collection time and date;
- (e) Requested analysis.

Laboratories accredited under AS/NZS ISO/IEC 17020 that are involved in sampling shall also record the sample area (for example, 100 cm²) and the sampled material (for example, painted wall).

A2.5 Analytical methods for methamphetamine analysis

A2.5.1

Only NIOSH methods 9106, 9109, 9111, or validated equivalents are recognised as the standard analytical methods for the quantitative analysis of methamphetamine from wipe samples taken according to this appendix.

A2.5.2

Laboratory test reports shall comply with NZS ISO/IEC 17025 reporting requirements. It is the responsibility of the accredited sampler to interpret the results with regard to how they carried out their sampling.

Results shall be reported by the laboratory in the appropriate units as $\mu\text{g}/100\text{ cm}^2$ or $\mu\text{g}/\text{sample}$.

Where a laboratory composite has been analysed, the laboratory will report both the results of the analysis and the theoretical maximum concentration of the individual results. The theoretical maximum concentration shall be determined by multiplying the laboratory result by the number of discrete wipe samples that comprise the laboratory composite.

The following are examples of how to calculate the theoretical maximum concentration of an individual sample within a laboratory composite:

- (a) Laboratory composite 1 comprises five discrete wipe samples from bedroom 1 and the laboratory result for laboratory composite 1 is reported as $1\ \mu\text{g}/\text{sample}$. Therefore to compare laboratory composite 1 to the decontamination levels in 2.1.2 and 2.1.3, the laboratory result ($1\ \mu\text{g}/\text{sample}$) is multiplied by 5 (the number of discrete wipe samples) resulting in a concentration of $5\ \mu\text{g}/100\text{ cm}^2$, which is then compared to the decontamination levels ($1.5\ \mu\text{g}/100\text{ cm}^2$ or $3.8\ \mu\text{g}/100\text{ cm}^2$);
- (b) Laboratory composite 2 comprises three discrete wipe samples from bedroom 2 and the laboratory result for laboratory composite 2 is reported as $0.4\ \mu\text{g}/\text{sample}$. Therefore to compare laboratory composite 2 to the decontamination levels in 2.1.2 and 2.1.3, the laboratory result ($0.4\ \mu\text{g}/\text{sample}$) is multiplied by 3 (the number of discrete wipe samples) resulting in a concentration of $1.2\ \mu\text{g}/100\text{ cm}^2$, which is then compared to the decontamination levels ($1.5\ \mu\text{g}/100\text{ cm}^2$ or $3.8\ \mu\text{g}/100\text{ cm}^2$).

A2.5.3

Laboratory quality assurance procedures and results shall be readily available and able to be reported to customers should it be required, in accordance with the requirements of NZS ISO/IEC 17025.

A2.6 Screening technologies for methamphetamine

A2.6.1

Screening technologies are largely designed to screen for the presence or absence of methamphetamine in wipe samples at a targeted level, such as 1.5 µg/100 cm². They can provide a rapid and affordable means to assess whether an asset or surface is contaminated.

A2.6.2

Only screening technologies that have been successfully validated in accordance with the criteria in [Appendix B](#) shall be used.

A2.6.3

A positive result arising from screening indicates the need for further sampling and analysis in accordance with NIOSH standard analytical methods, or validated equivalent method, to determine the level of methamphetamine contamination.

APPENDIX B – VALIDATION OF SCREENING TEST METHODOLOGY FOR METHAMPHETAMINE CONTAMINATION

(Normative)

B1 Screening technologies

B1.1

Screening technologies shall only be used during the screening assessment process, or during the decontamination phase to direct cleaning efforts. They shall not be used for the detailed assessment to evaluate the extent and magnitude of contamination, or the post-decontamination assessment process.

B1.2

Screening technologies shall be independently validated by an organisation accredited to NZS ISO/IEC 17025, with validation of methamphetamine screening technologies in their scope of accreditation, and who are not involved in the commercial analysis of methamphetamine in wipes. Screening technologies shall be able to detect levels at the acceptable decontamination level and 70% the acceptable decontamination level set in this standard from multiple common household surfaces. The operating instructions of the device shall be reviewed as part of the validation process.

B1.3

Any organisation validating screening test methodologies for the purpose of this standard shall:

- (a) Maintain a publicly available list of all the screening test methodologies they have validated; and
- (b) Make publicly available a report that demonstrates the screening test methodology meets all the requirements of this appendix.

B2 Validation process

B2.1

To be eligible for inclusion in the list of approved field screening methodologies a product shall have the following attributes periodically confirmed by independent validation:

- (a) The name of the product;
- (b) The name of the manufacturer;
- (c) The name and contact details of the New Zealand importer or distributor;
- (d) That it reliably detects methamphetamine present on a surface at a level of 1.5 µg/100 cm²;
- (e) That it reliably provides negative indication when methamphetamine is absent or less than 1.05 µg/100 cm² (70% of 1.5);
- (f) Its susceptibility to poor sampling technique (for example, the effect of over-swabbing or under-swabbing, poor swab handling, and so on);
- (g) Its susceptibility to the presence of other likely substances (interference and masking effects);

- (h) That it has instructions for use, in English, that are suitable for minimally trained individuals;
- (i) That it has a documented estimation of false positive and negative rates taking into account:
 - (i) Measured limits of detection
 - (ii) Susceptibility to interference
 - (iii) Measured repeatability
 - (iv) Measured reproducibility
 - (v) Variability due to sampling technique;
- (j) The nature of quality control employed by the manufacturer, if any.

Listing of an approved field-testing product will be valid, in the first instance, for 12 months. The number of units to be submitted for validation will be determined by the validation protocol. Validation shall be the responsibility of and at the cost of the manufacturer or distributor or both. Products shall be revalidated at 12-monthly intervals (see also [B2.9](#)).

B2.2

The validation procedure shall involve analysing both unspiked (negative) and spiked common household surfaces at the limit(s) in this standard, and 70% of the limit(s) in this standard, as in [Table B1](#).

Table B1 – Spike levels for the validation procedure

Spike level	Methamphetamine concentration
Unspiked	0 µg/100 cm ²
Spike 1 (70% of the limit(s) in this standard)	1.05 µg/100 cm ²
Spike 2 (the limit(s) in this standard)	1.5 µg/100 cm ²

B2.3

The common surface types to be tested shall include, as a minimum, glazed ceramic tiles, painted wood, painted plasterboard, polyurethane-coated wood, and concrete.

B2.4

Validation shall involve a minimum of one unspiked and two spiked analyses on each surface as detailed in [B2.2](#). A positive result from an unspiked surface will constitute a false positive, and a negative result from a spiked surface will constitute a false negative. No more than 10% failures are permitted (for example, 2 out of 20 determinations). Failures are defined as false positives or false negatives. If the number of failures exceeds 10%, the technology shall not be permitted to be used under this standard.

B2.5

Validation shall be obtained whereby the screening technology is compared in parallel with the NIOSH standard sampling and analytical method. The acceptance criteria for the screening technology results are detailed in [Table B2](#).

No more than 10% failures are permitted (for example, 2 out of 20 determinations). Failures are defined as unacceptable screening technology results. If the number of failures exceeds 10%, the technology shall not be permitted to be used under this standard.

Table B2 – Acceptance criteria for screening technology results

NIOSH method result	Acceptable screening technology result	Notes
0 – 0.02 µg/100 cm ²	100% negative on all surface types tested	Levels are so low that they cannot be detected.
≥1.05 and ≤1.50 µg/100 cm ² (equal to or greater than 70% of the limit in this standard, but less than or equal to the limit in this standard)	Positive or negative on all surface types tested	Methamphetamine is present at a level up to, but not above, the acceptable limit defined in this standard. At this critical level up to 50% of positive or negative readings may be false.
>1.5 µg/100 cm ² (greater than the limit in this standard)	90% positive on all surface types tested	Methamphetamine present at levels above the acceptable level defined in this standard. Up to 1 in 10 negative indications may falsely indicate the absence of methamphetamine at this level.
Other criteria		
Susceptibility to interference	90% agreement with NIOSH reference result for each interfering substance tested	Up to 1 in 10 positive and negative indications may be false if there are chemicals other than methamphetamine on the sampled surfaces that interfere with the screening technology.
Susceptibility to sampling technique variations	<5% negative or positive indications at variance with NIOSH reference results on each surface type tested	Up to 1 in 20 positive or negative indications may be false due to inappropriate sampling technique.
Repeatability (multiple tests by the same person in the same conditions)	90% agreement of results	
Reproducibility (multiple tests by different people of similar competence levels using the same conditions)	90% agreement of results	

B2.6

A review of the operating instructions shall be carried out to ensure that they are clear, unambiguous, and capable of providing reproducible and repeatable results when followed by both scientific and non-scientific operators.

B2.7

The results of the validation shall be documented in a formal report and be available to be peer reviewed.

B2.8

The report shall be made available to the requesting authority, accrediting agency, and the wider industry to provide assurance that only currently validated technologies are being used.

A list of validated technologies shall be maintained and made publicly available.

B2.9

In addition to products being revalidated at 12-monthly intervals (see [B2.1](#)), it is recommended that revalidation is carried out under the following situations:

- (a) Where there is a change to the limit(s) in this standard;
- (b) If the integrity of the device is suspected to have been compromised (for example, water damage or physical damage);
- (c) Where there is a change to the device technology that alters its performance capability.

Listing may be revoked at any time if there is credible evidence that the validation of the device is no longer valid.

APPENDIX C – EXAMPLE CLEARANCE CERTIFICATE

(Informative)

DECONTAMINATION CONTRACTOR CLEARANCE CERTIFICATE	
Issued by:	<i>(Decontamination contractor and contact details)</i>
Issued to:	<i>(Client)</i>
Job reference:	
Site address:	
Decontamination completion date:	
Accredited sampler:	
Final sampling date:	
<p>This certificate confirms that [decontamination contractor] has successfully completed the decontamination of the property situated at:</p> <p>Site address: _____</p> <p>in accordance with NZS 8510:2017 <i>Testing and decontamination of methamphetamine-contaminated properties</i> and as per the scope of work outlined in:</p> <p>Job reference: _____</p> <p>Please find attached copies of the analysis reports supplied by [laboratory] confirming that the final samples taken from the property</p> <p>by accredited sampler: _____</p> <p>are now recording levels of methamphetamine at or below the limits specified in NZS 8510:2017 <i>Testing and decontamination of methamphetamine-contaminated properties</i>. Please also find attached information on the scope of work, information on encapsulated areas, evidence of appropriate waste disposal, and photographs of sampling and remediation locations.</p> <p>This clearance certificate is valid for samples taken by the aforementioned accredited sampler as at the final sampling date.</p>	
Signed on behalf of:	<i>(Decontamination contractor)</i>
Name:	
Date:	
Company position:	

NOTE – This form is an example only, but provides a guide for decontamination contractors to design their own clearance certificate and add any additional information that they consider relevant and necessary. Additional information on the specific decontamination work completed and the results of sampling may be included in other reports that are attached to a clearance certificate.

NOTES

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STANDARDS EXECUTIVE**

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