# Management of asbestos in recovered fines and recovered materials for beneficial reuse in NSW

**Discussion Paper – Submission Form**

## Submitter Details

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**If this is a confidential submission, please tick here**: ☐

## Responses to questions

You can respond to any questions that are relevant to you. If you only want to submit data or any other relevant information, please email them to asbestosreview@chiefscientist.nsw.gov.au.

## Thresholds and screening levels

**Question 1:** What factors should be considered when deriving a threshold or screening level for asbestos in recovered fines and material for beneficial reuse?

The primary factor has to be the objects of the Protection of the Environment Operations Act 1997 (Section 3), which is the primary piece of legislation applicable to operational aspects of waste management and resource recovery. Any relaxation of the existing thresholds would appear to be at odds with the objects of this Act, specifically:

- s.3(a) - to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development,
- s.3(d) to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the following—

  (i) pollution prevention and cleaner production,

  (ii) the reduction to harmless levels of the discharge of substances likely to cause harm to the environment,

  (iia) the elimination of harmful wastes,

  (iv) the making of progressive environmental improvements, including the reduction of pollution at source,

  (vi) the proper environmental management of chemicals throughout their whole lifecycle,

Any moves to alter the existing thresholds (i.e. zero) would be inconsistent with these current objects and potentially make them subject to legal challenges.

Any relaxation of current thresholds would also be in direct conflict with Clauses 419 and 420 of the Work Health and Safety Regulation 2017 relating to the prohibition of workers carrying out work with asbestos and eliminating asbestos exposure as far as reasonably practicable.

Aside from the legislative considerations, the question of asbestos in materials recovered for beneficial reuse needs to be considered from a risk based perspective. Asbestos is a **known** human carcinogen. Any relaxation of the current threshold will be an implicit acknowledgement that more people will become sick and die from asbestos relates diseases. This seems fundamentally wrong from a moral and ethics perspective, and could also expose government to legal liability in cases where the exposure source of an individual affected by asbestos related disease cannot be definitively determined.

## Asbestos waste management at recycling facilities

**Question 2**: Can you provide any data on annual volumes of C&D waste being recycled or alternatively sent to landfill? Data on rejected loads due to asbestos presence and any other data related to all TOR items is welcomed.

Please email data together with this form to asbestosreview@chiefscientist.nsw.gov.au

**Question 3**: Can you provide any other information on the potential presence of asbestos in recycled C&D material?

i. Information on the methods of separating and removing asbestos from waste that can inform alternative approaches?

ii. What reuse scenarios are there for recycled waste, including end-products and their use?

It is an exercise in futility to attempt to separate and remove asbestos already dispersed in mixed wastes. Every piece of bonded asbestos containing materials (if recognised in the first place) will never be able to be identified and removed from a mixed waste stream. Further, contamination with free asbestos fibres would, unless in the most extreme cases, would be invisible to the naked eye. There is equipment commercially available that purportedly can field test for the presence of asbestos, but the accuracy of these devices is lacking.

Any asbestos contamination that passes through the screening and inspection process is then subject to various mechanical actions (moving, crushing, shredding, screening, etc) which are near perfect mechanisms to liberate fibres from bonded materials and distribute free fibres through a larger volume of processed waste.

The only truly effective option to prevent asbestos contamination of wastes and subsequent recovered resources is identification and segregation at the source. This prevents the asbestos containing materials from entering mixed waste streams and enables them to be aggregated and managed in accordance with the existing regulatory requirements for asbestos waste.

When considering end use scenarios for potentially or actually asbestos contaminated materials, there should only be two:

- For confirmed asbestos contaminated materials – landfill disposal in accordance with the regulatory requirements.
- For materials at high likelihood of being contaminated with asbestos – cover material on a solid waste landfill site.

Society generally does not tolerate being put at risk by commercially available products. Recovered resources should be no different and be free of harmful contaminants, including asbestos.

**Question 4**: While this section focuses on C&D waste, are there other waste types which are suitable for beneficial reuse which have the potential to be contaminated with asbestos?

There are two main areas that have the potential to be contaminated with asbestos:

1. Any waste that has the potential to come in contact with mixed construction and demolition waste. Waste facilities typically process more than one type of waste at a given site. If the wastes processed at the a given site includes mixed construction and demolition waste, then ALL waste processed at that site has the potential to be contaminated. Plant and equipment are not decontaminated between handling, processing and transporting different waste types, raising the likelihood of unintended cross contamination.
2. Any waste picked up as part of a bin service – Asbestos waste has previously been found in kerbside red, yellow and green bins, as well as commercially serviced bins. The collection, transport, and processing of waste that contains even a small amount of asbestos containing materials has the potential to contaminate large quantities of materials recovered for beneficial reuse.

## Management of asbestos in soil

**Question 5**: Is it appropriate for the health screening levels for asbestos in soils to apply to asbestos in waste? Note that the threshold level in this instance refers to a level where further action is required.

i. Why or why not?

This would depend on if the asbestos impacted soil is from a legacy bonded asbestos contamination and intended to remain in-situ. If the legacy bonded asbestos impacted soil were to remain undisturbed while taking other actions to limit exposure risk, then I would consider that a higher threshold would be appropriate. However, once this soil is excavated and transported, it has been subjected to similar mechanical actions was experienced in waste processing. This is likely to increase the risk by fragmenting the bonded materials into smaller pieces and liberate free fibres.

**Question 6:** Health screening levels are not the only tool used for managing asbestos in soils. If threshold levels in soils were to be applied to asbestos in **waste for beneficial reuse**,

i. what other tools can support managing asbestos in waste for beneficial reuse?
ii. what would be the limitations, costs or feasibility of safely removing asbestos in waste?
iii. are there certain scenarios where recycled C&D material should not be reused?
iv. are there certain scenarios where reuse of recycled C&D material could result in land legacy issues?

i. If industry performance over the last decade is any indicator, there are no tools left to manage asbestos waste at the point of disposal. The focus needs to be driven further up the waste chain.

ii. The costs would be exorbitant and there would be intractable WHS risks. Even if you overcame these two issues, there are no guarantees of the validity of laboratory analysis of samples.
iii. Any mixed waste from renovation / demolition sites of structures built before 1 January 2004 must not be permitted to enter resource recovery processes unless the removal of all asbestos from the source structure has been signed off by an accredited asbestos assessor.
iv. Absolutely! We've already seen how it can happen (and probably is happening without broader knowledge) with a single reprocessed product line, that on the surface is completely unrelated to asbestos wastes.

## Standards and guidelines for asbestos in waste

**Question 7**: Are there other standards or guidelines that would be applicable for managing asbestos in waste for beneficial reuse that can be provided?

Nil

**Question 8:** Should the approach in the WA guideline (*Managing asbestos at construction and demolition waste recycling facilities*), be implemented in NSW and if so, why or why not?

i. Are there other factors that should be considered if the WA Guideline is to be implemented?
ii. Is there an alternative approach that could be considered?

See the answer to Question 1

## Sampling and analysis

**Question 9**: Apart from AS4964 and ASC NEPM, are there other sampling and analysis methods for detecting and quantifying asbestos in waste materials or recycled products that are being received and processed at recycling facilities?

i. Are you aware of any other methods/processes for sampling and analysis of asbestos that the Review should consider? If so, please provide details and basis for their relevance to this Review.
ii. How reliable and accurate are these methods in ensuring that recycled waste is not contaminated?

i. There are the only two commonly available methods available at commercial laboratories that I am aware of.
ii. The reliability of test methods for asbestos is questionable. First, it depends on a collection of a representative sample. This in itself is essentially impossible for highly heterogeneous and temporally variable materials like recovered fines. There is also the issue that this representative has to be captured in less than a few hundred grams of sample. The extrapolate a single positive or negative result or attempt any quantification of the amount of asbestos contamination to several hundred tonnes of recovered materials is prone to significant error.

## Risk-based approaches for managing asbestos in waste

**Question 10:** Would a through-chain approach to managing asbestos in waste, where each business looks to minimise or eliminate the risk from asbestos in waste for beneficial reuse, work?

i. What elements would be part of the system/approach?
ii. What would be the advantages/disadvantages of such a system?

Asbestos containing materials MUST be identified and segregated at their source. This is consistent with accepted models of risk management hierarchies and exemplary practice in waste management. As mentioned earlier in my submission, an essential control is for mixed waste from demolition sites of structures built before 1 January 2004 not to be permitted to enter resource recovery processes unless the removal of all asbestos from the source structure has been signed off by an accredited asbestos assessor.

This will require the renovation / demolition of all structures built prior to 1 January 2004 to have a pre work survey undertaken by a licensed asbestos assessor to identify and catalogue any actual / suspected asbestos containing materials. This should be the start of a regulatory process where:

i. All, actual / suspected asbestos containing materials are removed from the structure, prior to any other work being undertaken.
ii. This actual suspected asbestos containing material is tracked to a lawful disposal location and disposed of in accordance with the legislative requirements.
iii. The removal works are signed off by a licensed asbestos assessor different to the one that undertook the initial assessment.

The advantages would be the elimination of asbestos containing materials as far as reasonably practicable for material received at waste and resource recovery facilities and making any arguments around “acceptable” thresholds redundant. The efficiency and safety of the processing of recovered materials would increase as there would be no further need for detailed screening at multiple points of the process and workers would not need to expose themselves to unnecessary risks in the retrieval of actual or suspected asbestos containing materials.

The disadvantage (from a building industry perspective) would be additional cost in undertaking renovation / demolition work. However, when looking at a whole of environment cost, these arguments dissipate significantly, especially when considering the direct and indirect costs of asbestos related disease in 2015 was over $0.5 billion.

**Question 11:** Are there other risk-based approaches to managing asbestos in waste for beneficial reuse?

Source identification, segregation and management is the only practical and cost effective risk management option for beneficial reuse. The construction and waste industries have repeatedly demonstrated their inability and/or unwillingness to put robust systems in place to manage the end use of recovered materials.

## General

**Question 12:** Is there any further information you would like to provide the Review to assist us with in responding to the Terms of Reference?

My business in the process of preparing a report of outcomes from a Waste 2024 conference workshop on the management of asbestos waste. The intent of this report is to be available to decision makers and help inform decisions regarding the regulation and management of asbestos wastes. Once finalised, a copy of this report can also be provided to the OCSE if you believe it helpful in informing the outcomes of this review.

**Email the completed form and attach any relevant data and information to asbestosreview@chiefscientist.nsw.gov.au by 31 July 2024.**