



SUSTAINABLE AGGREGATES

SOUTH AUSTRALIA

Management of chemical contaminants in recycling C&D waste

Environmental Fact Sheet No. 6

Introduction

The purpose of this Fact Sheet is to present information on the processes within the C&D recycling industry to manage the presence of chemical contaminants in all crushed pavement materials (eg. PM1, PM2 and aggregates). The manufacture of other products such as engineering fill materials is not included in this Fact Sheet.

In South Australia all C&D recycling operations are undertaken under strict legislative requirements detailed in EPA "Standard for the Production and use of Waste Derived Fill". In addition the Waste Management Association (WMAA) produced a national guideline for industry entitled "Asbestos Management Guideline for Construction and Demolition Waste Recycling Facilities".

C&D waste

The manufacture of crushed pavement materials and aggregates is limited to processing INERT C&D waste and described as:

The solid inert component of the waste stream arising from the construction, demolition or refurbishment of buildings or infrastructure but does not contain Municipal Solid Waste, Commercial and Industrial Waste, Listed Waste, Hazardous Waste or Radioactive Waste.

The other form of C&D waste that may be received from recycling is classified as MIXED C&D waste described as:

The solid component of waste stream arising from the construction, demolition or refurbishment of buildings or infrastructure which contains some foreign material such as green waste, plastics, electrical wiring, timber, paper, insulation, tins, packaging etc.

This waste stream, if it is to be included in crushed pavement materials and aggregates, requires special treatment prior to inclusion by separation of the inert fractions. Mixed C&D waste can be manufactured into engineering fill materials, provided the end product meets the same EPA requirements as crushed materials.

Chemical contamination

Limiting chemical contamination in recycled materials is based upon protection of health standards as well as protection of the environment. The materials are manufactured to meet relevant health-based and ecological criteria to ensure that they are fit for purpose. To this end, they are recognised by SA EPA as a 'product' as defined in legislation and guidance and are sold commercially for re-use throughout the state.

The potential for chemical contamination to be present in C&D waste associated with manufacture of pavement materials and aggregates is generally associated with:

- Hydrocarbons linked to reclaiming old road pavements, potential contaminants include residuals from bitumen and asphalt.
- Heavy metals linked to demolition of buildings, potential contaminants being cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel and lead.
- Residual chemicals linked to reclamation of soils and rubbles with pesticides and fertilizers, potential contaminants being arsenic, chlordane, cyanide, DDT, aldrin and dieldrin.

Founding Partners:

Industry management

Monitoring of chemical contaminants during receipt of waste, processing and final product must form part of the third party quality assurance accreditation requirements.

Detection of concentrations is undertaken frequently by accredited testing organisations (eg. NATA accreditation) from XRD and leachate analyses (AS44439.2 and 3).

Results

Typical results for all analyses are too complex to include in this document; however, they can be provided by the product supplier.

Concerned?

If you have concerns regarding the potential for asbestos in purchasing PM materials, it is recommend that you:

- a. Request a copy of the manufacturer's EPA license
- b. Request details of third party quality assurance accreditation
- c. Request a copy of the Chemical Contaminant Management Plan associated with product quality control
- d. Request to cite recent chemical contaminant monitoring data pertaining to the product

References

EPA (SA) "Standard for the Production and use of Waste Derived Fill"

ISBN 978-1-921495-07-6 January 2010

Founding Partners: