

# Technical Direction

## Environment

ETD 2015/021

- Coal tar asphalt handling and disposal

Summary:	Audience:
<p>Coal tar is classified within the Australian Hazardous Substances regulatory regime as a Category 1 Carcinogen. Due to its previous use in asphalt on road surfaces it poses a risk to human health and the environment. This directive sets out how coal tar asphalts, when detected, should be handled and disposed of as well as mandating that these types of asphalts must not be re-used to manufacture new asphalt.</p>	<ul style="list-style-type: none"> <li>• Roads and Maritime staff and contractors</li> </ul>

### What is coal tar asphalt?

Coal tar is a by-product of the coal distillation process. Between about 1973 and 1977 coal tar was commonly used as a binder instead of bitumen in asphalt mixes, particularly in the Sydney and Newcastle areas. Coal tar continued to be used in roads in very small quantities up until about 1989 in some asphalt mixes and some pre-coated aggregate for sealing. It has also on occasions been inadvertently used in recycled asphalt mixes.

Coal tar asphalts may still exist as a road surface layer but is more commonly found as a discreet subsurface layer overlaid by more modern bitumen asphalt.

### Why is coal tar an issue?

#### Work Health and Safety

Work health and safety (WHS) concerns exist about coal tar as it is high in a range of chemicals of concern including total polyaromatic hydrocarbons (PAHs), phenols and benzo-a-pyrene (listed as a priority PAH by the United States Environment Protection Agency).

### Approvals:

<b>Owner:</b>	Senior Environmental Specialist (Sustainability)	<b>Review Date:</b>	September 2015
<b>Authorised by:</b>	General Manager Environment	<b>Effective Date:</b>	23 April 2008

Coal tar is classified within the Australian Hazardous Substances regulatory regime as a Category 1 Carcinogen which means there is sufficient evidence to establish a causal association between human exposure to this substance and the development of cancer.

Cancer risk can be managed with appropriate work processes and personal protective equipment. The chemicals that make up coal tar have been found to cause adverse health impacts such as serious skin irritation and photosensitisation (increasing the risk of sunburn) if appropriate personal protective equipment is not used.

## Environmental

A review of the scientific literature has shown some evidence that runoff and leachate from car parks containing coal tar surface coatings has caused adverse ecological impacts on downstream aquatic ecosystems.

## Can I still re-use coal tar asphalt in surface fill?

The maintenance and rehabilitation of roads by Roads and Maritime and its contractors often requires the milling or excavation of the asphalt layer. In the past, when coal tar asphalt has been encountered the excavated or milled coal tar asphalt has often been mixed with other excavated construction materials and re-used as fill in sub-surface road layers.

In 2007 Roads and Maritime's Environment Branch engaged environmental and WH&S specialists to examine the risks associated with the re-use of coal tar asphalt to road workers, the public and ecosystems.

As a result of this risk assessment, the Environment and Work Health and Safety Branches of Roads and Maritime in consultation with relevant Divisions have determined that all future excavated coal tar asphalt must now be disposed of to a licensed landfill and is not to be re-used for any purpose, including reincorporation as fill in subsurface road layers. Under no circumstances should asphalt containing coal tar be re-used to manufacture new asphalt.

The risk assessment found that the health risks to members of the public when coal tar is re-used in road construction and maintenance activities are negligible.

## Where can I dispose of coal tar asphalt and how can I reduce costs?

The Environment Protection Authority (EPA) allows all asphalt waste, including coal tar asphalt from road construction and maintenance activities, to be disposed of at a landfill that is licensed to accept asphalt provided that it is landfilled and not stored on the premises for operational reuse or any other reuse/recycling. Under the NSW waste guidelines asphalt is pre-classified as General Solid Waste (non-putrescible).

To reduce the costs of landfill disposal it is recommended that any coal tar asphalt removed during construction and maintenance works be separated out and not mixed with other construction wastes. This will ensure that any potentially re-usable construction materials are not contaminated with coal tar asphalt.

## How should coal tar be handled?

- Whenever coal tar is identified work should cease immediately and the supervisor notified
- Prior to any further work, any areas of exposed skin should be washed with soap and water and dried well. Barrier cream and SPF 30+ sunscreen should be applied to exposed skin and rubbed in well
- A risk assessment and Safe Work Method Statement (SWMS) for coal tar must be prepared prior to any further work. Guidance on risk assessment is available in Roads and Maritime's' WHS manual

- Overalls (which are to be washed separately after use), impervious gloves, safety glasses and a half face combination dust/organic vapour respirator must be issued and worn by any staff remaining in the area to carry out removal work
- Where practical, coal tar should be removed by non-milling methods including saw cutting the perimeter of the area to be removed and excavating the material to a separate stockpile in a bunded area. The work area should be kept damp. Following the excavation, the exposed area should be cleaned with a suction sweeper using water and brooming. Plant and equipment must be washed down in an approved wash bay with interceptor pits.

## How do I identify coal tar asphalt?

Coal tar asphalts are more likely to be encountered in the Sydney and Newcastle areas and to a lesser extent in the Wollongong region. Unfortunately, there are no comprehensive records showing the location of coal tar asphalts.

The most obvious way most Roads and Maritime workers identify the presence of coal tar asphalt, as distinct from bitumen, is the distinctive odour it gives off when heated. This odour occurs when the coal tar asphalt is milled and the friction heat from the milling machine releases coal tar fumes.

Laboratory analytical tests can also be conducted to determine if asphalt contains coal tar. If testing is required, arrangements should be made with an environmental consultant and/or analytical laboratory for samples of the asphalt to be tested using Roads and Maritime Test Method T542. This test method identifies the presence of phenol which is in coal tar and not in bitumen.

It is important to note that Test Method T542 may not detect the presence of minor trace amounts of coal tar asphalt in bitumen pavements that contain low levels of recycled coal tar asphalt. This Environmental Direction does not apply in these situations.

### Contact Officers:

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#### For WHS Issues:

The WHS Facilitator in your region.