Guidance on the production of fully recovered asphalt road planings

QPA Northern Ireland
Providing Essential Materials

NIEA Northern Ireland Environment Agency
www.ni-environment.gov.uk

1. Introduction and summary

The Quarry Products Association (QPA) and the Northern Ireland Environment agency (NIEA) have developed this document to promote the sustainable reuse of asphalt road planings. It provides an agreed methodology for demonstrating when aggregate produced from source segregated asphalt road planings has been fully recovered to the extent that it has ceased to be waste for a particular proposed use. This is for the purpose of encouraging the use of recycled aggregates through clarification of the waste management licensing legislation.

If producers and users of such materials comply with this guidance it is likely that the material they produce will be considered to be a product rather than a waste. Whilst producers and users are not obliged to comply with the guidance, if they do not the processed material will continue to be classified as a waste and thus be subject to the requirements of the waste regulations. This document also sets out the legislative requirements of the waste management licensing regime which are applicable to the processing of asphalt road planings. It is intended for use by both NIEA staff and those involved in the processing of asphalt road planings.

A flowchart is provided in Appendix A which shows a simple summary of this guidance. Whilst it provides an overview of the guidance it is essential that all users read the document in its entirety to ensure clarity.

2. Scope

This guidance applies solely to source segregated asphalt road planings covered by the European Waste Catalogue Code 17 03 02.

This document relates to asphalt road planings which are defined here as a dense mixture of bitumous binder and mineral aggregate. A road planer is a cold milling machine which uses a rotating milling drum to remove asphalt from a defective road and generates asphalt road planings as a result. It is this process that this guidance applies to. There are a variety of other means in which road materials can be removed and a variety of other wastes generated and these are not covered here. For further information about your operation you should contact NIEA.

This document does <u>not</u> cover:

- Tar bound aggregates. Tar pitches are derived from coal and are classed as special/hazardous waste, European Waste Catalogue Code 17 03 03. Where a road has a tar content it is the responsibility of the road owner/operator to identify and quantify this and make arrangements for its treatment/disposal at a suitably licensed facility.
- Asphalt and asphalt road planings contaminated with any other substances including, though not restricted to, plastics, glass, metals, and spilled liquids.
- Asphalt removed/processed by any other method other than by a road planer e.g. via pneumatic or hydraulic breakers.

3. Process Overview

When a road reaches the end of its functional life it must be replaced. There are a number of road failure mechanisms including foundation/structural failure, drainage failure, skid resistance failure, binder-aggregate adhesion failure and surface profile failure. These are generally caused by the number of vehicles that have passed over the road, changes in the drainage of the road or structural failure of the underlying formation. They are not caused by any chemical change in the material itself.

The road to be replaced can be removed in several ways, including the use of pneumatic and hydraulic breakers and road planers. The process of removal using a road planer changes the physical nature of the material from a continuous homogeneous body to a granular material by milling. There is no chemical change to the material when using this process.

When such a milling operation is undertaken on an asphalt road using a road planer it will primarily produce a material that complies with the selected granular material specification 6F3 (Specification for Highway Works (SHW) Volume 1 Series 600 table 6/1). It can also produce material that complies with other relevant specifications from the SHW as detailed in Table 1 (Section 4.2). Material meeting these specifications may be used in a number of different civil engineering applications, this can include: capping, sub base, basic running surfaces and use as a feedstock in the manufacture of new road surfacing materials.

4. When asphalt planings may be considered to be fully recovered

There are a limited number of cases where waste may be considered to be fully recovered and no longer subject to the requirements of waste legislation prior to its final use. When considering the status of asphalt road planings the following points need to be considered.

4.1 Environmental characteristics of bitumous asphalt road planings

The materials used in building a road will depend upon the date of construction and class of road. Bitumen-based surfacing materials predominate in present-day road construction in the UK, but coal-tar pitch based surfaces have been used in the past. Coal-tar pitches (derived from coal) contain a higher proportion of polycyclic aromatic hydrocarbons (PAHs), by several orders of magnitude, than bitumen (derived from crude oil, or occurring naturally). These present a much higher potential for the leaching of these substances.

The production of bitumen by refining crude oil is carried out in carefully temperature controlled conditions which avoids thermal degradation and the possibility of significant PAH formation. Furthermore, as the majority of the compounds have low boiling points and are removed during vacuum distillation in the refining process, PAHs are generally present in more limited amounts in bitumens than in the crude oils from which they are derived.

The environmental risk from PAH leaching from bitumen is extremely small. As such, milled uncontaminated bitumous asphalt road planings, can be used with the same environmental precautions as would be applied for virgin material.

4.2 Establishing the compliance to a recognised specification

In order for materials produced using a road planer to be regarded as having been fully recovered and therefore not subject to waste management legislation, a level of quality control is required. The processed asphalt road planings must be suitable for the proposed use and should be capable of being used in the same manner with the same level of environmental control as the material that it is substituting. Given the environmental information provided in 4.1, the engineering aspect of this requirement is fulfilled by sampling and testing the product (asphalt road planings) to the 6F3 specification. This should be done on a weekly basis, as a minimum, until consistency can be established. Another specification listed in the SHW Volume 1 may be used where appropriate provided that it is included in Table 1.

Table 1 – Specifications from SHW compliant with this guidance.

SHW Table No.	Class (Specification)	Brief description
6/1	1A	Well graded granular material
	1B	Uniformly graded granular material
	1C	Coarse granular material
	2B	Dry cohesive material
	2C	Stony cohesive material
	6B	Selected coarse granular material
	6C	Selected uniformly graded granular material
	6E	Selected granular material
	6F3	Selected granular material
	7A	Selected cohesive material
	7D	Selected stony cohesive material
	7E	Selected cohesive material
	7I	Selected cohesive material
	8	Various from Class 1 and 2

4.3 Establishing the certainty of use for the milled asphalt road planings

It must be demonstrated that the manufactured aggregate (milled asphalt road planings) is certain to be used. Producers and users of recycled road planings should therefore note that, even if recycled asphalt planings have been produced to a relevant specification (see Table 1), it will be waste and subject to regulatory waste controls if it is stored with no identifiable end use or it is discarded after being produced.

Prior to commencement of planing operations the main contractor on the site, or the planing sub-contractor, must establish that there is an identified and certain end-use for the milled asphalt road planings.
Below are a number of examples which are deemed either compliant or non-compliant under this guidance, they should be used as a guide rather than as a definitive list.

Compliant uses

- Recovered asphalt road planings being used as feedstock in the manufacturing of new road surfacing can be stored at the manufacturing site for the new surface material as a non-waste
- Recovered asphalt road planings which are to be used for farm roads will be regarded as a non-waste as long as the use is certain and identified
- Recovered asphalt road planings which are to be used in the construction of roads in accordance with the Specifications for Highway Works will be regarded as non-waste.
- Recovered asphalt road planings being stored in stock for onward sale/use at a permanent site involved in the day to day production/sale/distribution of virgin aggregate such as a quarry or depot is unlikely to be regarded as waste.

Non-compliant uses

- Recovered asphalt road planings being stored at any location without an identified use will be regarded as waste.

- The use of recovered asphalt road planings as infill/restoration material for quarries will require authorisation from NIEA and is not covered by this guidance.

5. Legal compliance

Good Practice – when undertaking large road removal operations, prior to registering an exemption, operators should contact NIEA to ensure local officers are aware of the activity

Where the intention is to process the waste at the site of production through the use of a road planer, as described above, a Paragraph 14 exemption (as described in Schedule 2 part 1 of the Waste Management Licensing Regulations (NI) 2003 and amendments) should be registered with NIEA. This exemption from the requirement to hold a waste management licence covers the activity of manufacturing aggregate and road stone from various wastes.

To comply with the law, exemptions must be registered with NIEA. Exemptions can be registered by submitting an application to NIEA with details of the proposed activity, the location, the timescales involved and the intended use of the processed material. The fee for a Paragraph 14 activity is £730 for three years.

Exemptions must be registered at each site where a waste recovery operation is undertaken prior to the activity taking place. This means that where such an activity is proposed it must be registered at every distinct road removal operation. This is because a registered exemption is for a distinct activity at a distinct location rather than for a particular piece of equipment. In most situations the boundaries of a site will be obvious however, as a rule of thumb, any site will be considered to be an identified phase of road replacement or, in exceptional circumstances, a number of overlapping (both in time and location) phases of road replacement. Whole road systems are not considered to represent one site.

If the material has been fully recovered, there is certainty of use and thus no longer waste, its subsequent movement and use will not be subject to the requirements of the waste regulatory control. As such, the material would not have to be transported by a registered waste carrier or be accompanied by a controlled waste transfer note (CWTN).

Where waste planings have not complied with this guidance and have therefore not ceased to be waste the following will be required:

A CWTN must accompany movements of waste asphalt. Hauliers/carriers must be registered waste carriers. If you need further advice on what a CWTN should include or how to register as a waste carrier please contact the NIEA.

If you are transferring waste asphalt planings to an establishment or undertaking with a relevant registered exemption from waste management licensing or a site holding a Waste Management Licence then it is your legal duty to ensure that the receiving undertaking, establishment or licensed site is permitted to accept such wastes.

Where the intention is to process the waste either at the site of production, though not utilising a road planer, or at any other site a Paragraph 14 exemption should be registered with NIEA.

Should you require further details on the issues above please contact the NIEA. Contact details are provided on the back of this guidance.

6. Documentation

All quality control records relating to the processing of waste asphalt must be maintained and available for inspection by NIEA for at least two years. This should include details of:

- The exemption registration number for the recovery of the asphalt planings.
- The assessment undertaken prior to the commencement of operations relating to the type of material (i.e. bitumous or tar content) and any contamination.
- Material leaving the site. Records must be kept of all aggregate recycled. These records must correspond to the contracts of supply issued to the customer. The following details of the destination of the material must be kept:
    - Date;
    - Quantity of weight/volume;
    - Name and address of receiving business/establishment;
    - Intended end use;
    - Locations of end use;
    - Grading contest test records.

Where a road planning subcontractor is carrying out the above process it is their responsibility to maintain the above paperwork and have it available for inspection by the main contractor or other inspection bodies such as NIEA.

7. References and links

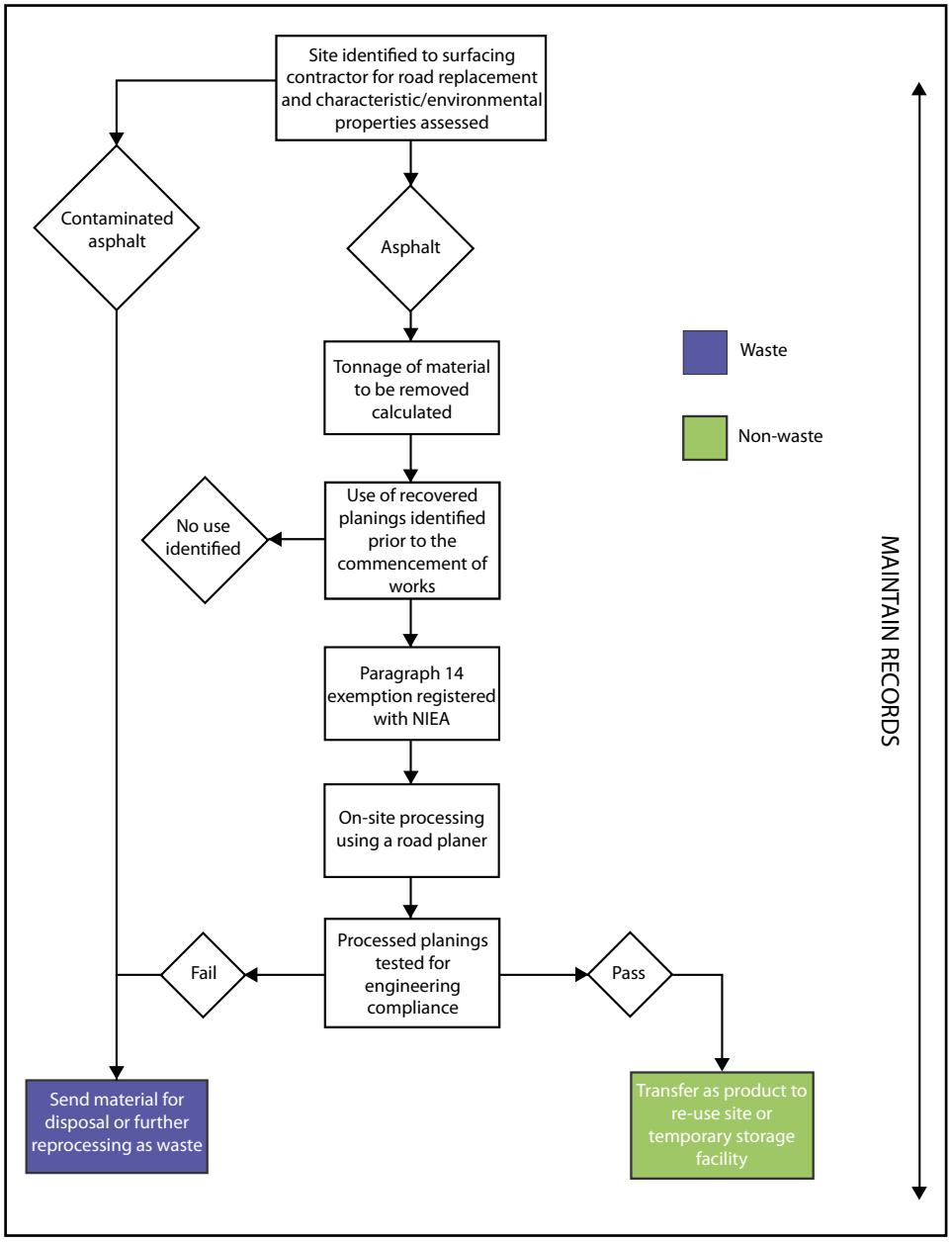
- Quarry Products Association: www.qpa.org
- NIEA website (general information): www.ni-environment.gov.uk/
- Waste management exemptions: www.ni-environment.gov.uk/waste/regulation/exemption.htm
- The Waste Management Licensing Regulations (NI) 2003 and Amendments: www.ni-environment.gov.uk/waste/regulation/license.htm
- Specification for highways work: www.standardsforhighways.co.uk
- Waste and Resources Action Programme: www.wrap.org.uk

8. Contact details

Northern Ireland Environment Agency,
Land and Resource Management,
1st Floor Klondyke Building,
Cromac Avenue,
Lower Ormeau ,
Belfast,
BT7 2JA.

Tel (028) 9056 9371
Fax (028) 9056 9376

Appendix A


Site identified to surfacing contractor for road replacement and characteristic/environmental properties assessed
Contaminated asphalt
Asphalt
Tonnage of material to be removed calculated
Use of recovered planings identified prior to the commencement of works
No use identified
Paragraph 14 exemption registered with NIEA
On-site processing using a road planer
Processed planings tested for engineering compliance
Fail
Pass
Send material for disposal or further reprocessing as waste
Transfer as product to re-use site or temporary storage facility
Waste
Non-waste
MAINTAIN RECORDS

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