



TYRE-DERIVED RUBBER MATERIALS

End of waste criteria for the production and use of tyre-derived rubber materials (TDRM)







CONTENTS

Foreword	4
1. Introduction	5
2. Producing tyre-derived rubber materials from used tyres	10
3. Providing evidence of compliance with the Quality Protocol	12
4. Storage and use of tyre-derived rubber materials	14
Appendix A Definitions	17
Appendix B Approved material standards and specifications to which this Quality Protocol applies	20
Appendix C Engineering standards to which this Quality Protocol applies	21
Appendix D Good practice for the storage of tyre-derived rubber materials and use in unbound applications	22
Appendix E Role of the Certification Body	23

The original Quality Protocol was funded by Defra and the Welsh Assembly Government (WAG) as a business resource efficiency activity and developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with Defra, WAG, industry and other regulatory stakeholders.

This 2014 update has been undertaken by the Environment Agency England working in conjunction with Abricon Ltd on behalf of the Tyre Recovery Association.

The Quality Protocol is applicable in England, Northern Ireland and Wales. It sets out end of waste criteria for the production and use of tyre-derived rubber materials (TDRM).

Foreword

Background

Uncertainty over the point at which waste has been fully recovered and ceases to be waste within the meaning of Article 3(1) of the EU Waste Framework Directive (2008/98/EC) has inhibited the development and marketing of materials produced from waste which could be used beneficially without damaging human health and the environment. In some cases, this uncertainty has also inhibited the recovery and recycling of waste and its diversion from landfill.

Interpretation of EU legislation is ultimately a matter for the Courts and there is now a substantial body of case law on the interpretation of the definition of waste. Drawing on the principles established in this case law, it is possible to identify the point at which certain wastes cease to be waste and thus when the Waste Framework Directive's waste management controls no longer apply. This identification is the purpose of the Waste Protocols.

You must still apply waste controls (*https://www.gov.uk/managing-your-waste-an-overview*) until the point the material is no longer waste. Make sure you have the correct authorisation (*https://www.gov.uk/environmental-permit-check-if-you-need-one*) in place for the transport, storage, handling and treatment of waste from the relevant environmental regulator.

Environmental regulators:

Environment Agency (England) Email: *enquiries@environment-agency.gov.uk* Phone: 03708 506 506* [Environment Agency website] (*https://www.gov.uk/government/organisations/environment-agency*)

Northern Ireland Environment Agency (NIEA) Email: BetterRegulation@doeni.gov.uk Phone: 028 9056 9443 (http://www.doeni.gov.uk/niea//)

Natural Resources Wales (NRW) Email: enquiries@naturalresourceswales.gov.uk Phone: 0300 065 3000* (http://naturalresourceswales.gov.uk/splash?orig=/)

What is a Quality Protocol?

A Quality Protocol sets out end of waste criteria for the production and use of a product from a specific waste type. Compliance with these criteria may be considered sufficient to ensure that the fully recovered product may be used without undermining the effectiveness of the Waste Framework Directive and therefore without the need for waste management controls.

In addition, the Quality Protocol indicates how compliance may be demonstrated and points to good practice for the storage, handling, application and use of the fully recovered product.

The Quality Protocol further aims to provide increased market confidence in the quality of products made from waste and so encourage greater recovery and recycling.

Introduction

Definitions are provided in Appendix A for terms that appear in italics when they are used

1.1. What is this Quality Protocol?

- 1.1.1 The original Quality Protocol was developed by WRAP (Waste & Resources Action Programme) and the Environment Agency in consultation with industry and other regulatory stakeholders. This 2014 edition updates some of the requirements based on further consultation by the Environment Agency with industry. In particular it includes reference to a best practice industry Certification scheme. It is applicable in England, Northern Ireland and Wales.
- 1.1.2 The Quality Protocol sets out end of waste criteria for the production and use of tyre-derived rubber materials from source-segregated waste tyres destined for use in designated market sectors. It supersedes the TDRM Quality Protocol published in November 2009. If these criteria are met, the resulting outputs will normally be regarded as having been fully recovered and to have ceased to be waste.
- 1.1.3 Producers and users are not obliged to comply with the Quality Protocol. If they do not, the tyre derived rubber materials will normally be considered a waste and waste management controls will apply to their handling, transport and use.
- 1.1.4 Producers of tyre-derived rubber materials should note that this Quality Protocol does not affect the obligation to hold an Environmental Permit or a Waste Exemption, and comply with all of its conditions to store and process waste tyres.
- 1.1.5 This Protocol does not affect permitting or any other legal requirements that do not depend upon the status of the material as waste. Producers of tyre-derived rubber materials should also note that by producing a fully recovered product they may be subject to further legal obligations, e.g. the registration of substances under REACH¹.

1.2. The purpose of the Quality Protocol

- 1.2.1 This Quality Protocol has four main purposes:
 - i. clarifying the point at which tyre-derived rubber materials cease to be waste and waste management controls are no longer required;
 - ii. providing users with confidence that the tyre-derived rubber materials they purchase conform to an approved material standard;
 - iii. providing users with confidence that the tyre-derived rubber materials are suitable for use in designated applications including by conforming with engineering standards where required; and
 - iv. protecting human health and preventing pollution of the environment (including soil).
- 1.2.2 In addition, the Quality Protocol describes acceptable good practice for the use of tyrederived rubber materials (see Appendix C).

¹Waste is exempt from REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) (Regulation (EC) No 1907/2006) as it is covered by separate waste management controls. However, once waste has been fully recovered and ceases to be waste, waste management controls cease to apply and REACH may apply instead at that point. Unless specifically exempt (e.g. because a substance has already been registered), producers may need to register substances recovered from waste and placed back on the market and make available appropriate hazard and safety information, for example a suitable safety data sheet.

1.3 Complying with the Quality Protocol

- 1.3.1 Tyre-derived rubber materials will normally be regarded as having ceased to be waste, and therefore no longer subject to waste management controls, provided they:
 - require no further processing before use, namely:
 - have been produced using only those input materials specified in Section 2, namely source-segregated waste tyres;
 - meet the requirements of an approved material standard or specification (e.g. PAS 107:2012) (see Section 2);
 - meet the requirements of engineering standards if specified for the specific end use (see Section 2);
 - meet any additional requirements specified by the customer;
 - have been produced using either ambient or cryogenic processing technologies; and
 - have been processed to one of the size categories and in accordance with one of the options in Section 2;
 - are destined for use in one of the designated applications within the designated market sectors listed in Section 4.
- 1.3.2 Producers of tyre-derived rubber materials must demonstrate that these criteria have been met. They will do this by demonstrating that they are compliant with an industry approved 'best practice' Certification Scheme and maintaining records (see Section 3).
- 1.3.3 This Quality Protocol does not apply to whole tyres. It applies to size-reduced tyre-derived rubber materials that are intended for use in bound and unbound applications.
- 1.3.4 This Quality Protocol will be adopted as a technical regulation under Technical Standards and Regulations Directive 98/34/EC² as amended. We recognise that there may be codes of practice or standards which apply in European Economic Area (EEA) States other than the UK setting out requirements for the production and use of tyre-derived rubber materials. It is accepted that tyre derived rubber materials may cease to be waste provided they have been produced in compliance with:
 - a relevant standard or code of practice of a national standards body or equivalent body of any EEA State; or
 - any relevant international standard recognised for use in any EEA State; or
 - any relevant technical regulation with mandatory or de facto mandatory application for marketing or use in any EEA State.

These must give levels of product performance and protection of human health and the environment, which are equivalent to those required in this Quality Protocol.

1.3.5 An outline of the main stages and control mechanisms of the Quality Protocol is presented in Figure 1. These are described further in Sections 2 and 3.

Figure 1: Main stages and control mechanisms of the Quality



1.4 When Quality Protocol compliant material may become waste

- 1.4.1 Producers and users of tyre-derived rubber materials should note that, even if the Quality Protocol is complied with, the material will become waste again and subject to waste management controls if it is at any stage:
 - disposed of; or
 - stored indefinitely with little prospect of being used; or
 - under the rules of the industry lead 'best practice' Certification Scheme or the approved standard or for any other reason the material has to be reprocessed or disposed of as waste.
- 1.4.2 In addition, if Quality Protocol compliant materials are mixed with waste materials the resulting mix will be considered to be a waste and subject to waste management controls. However, if Quality Protocol compliant materials are mixed with other non-waste materials the resulting mix will not, as a result of this, be waste.

1.5 Failure to comply with the Quality Protocol

- 1.5.1 Where this Quality Protocol is not complied with, for example the tyre-derived rubber materials do not meet an approved material standard or specification, a specified engineering standard or the producer cannot demonstrate evidence of compliance, the tyre-derived rubber materials may be considered to be waste. In such circumstances, the producer or user must comply with the appropriate waste management controls³ for the transportation, storage and use of the tyre-derived rubber materials and may be committing an offence if they do not do so.
- 1.5.2 Detailed guidance on waste management controls can be obtained from the relevant regional Regulatory Body, refer to the Appendix A: Definitions for contact information.

1.6 Updating the Quality Protocol

- 1.6.1 This document may be subject to change. Triggers for change could include:
 - pollution incidents;
 - a change in the market;
 - a change in legislation or case law;
 - a shift in the chemical composition or physical properties of waste tyres; and more data becoming available on the critical chemical concentrations in waste tyres, such as through REACH analysis undertaken by manufacturers.
- 1.6.2 This Quality Protocol may be withdrawn by the relevant regional Regulatory Body if it becomes apparent that it is generally being misused and/or misapplied.

1.7 Importing and exporting Quality Protocol compliant material

- 1.7.1 Producers intending to export material that complies with this Quality Protocol should be aware that, although the material may cease to be waste locally, the country of destination may take a different view. If the competent authority in the country of destination considers the material to be waste, the shipment will be subject to the controls set out in the Waste Shipment Regulation.
- 1.7.2 Those intending to import Quality Protocol compliant material should be aware that, if the country of dispatch regards the material as waste, the controls set out in the Waste Shipment Regulation will apply to the shipment. This is the case even though the material may be regarded as having ceased to be waste within the England, Northern Ireland and Wales.
- 1.7.3 Before importing or exporting such material it is prudent to check with the competent authority for the country of dispatch or destination. A list of the competent authorities can be found at:

http://ec.europa.eu/environment/waste/shipments/pdf/list_competent_authorities.pdf

Producing tyre-derived rubber materials from used tyres

2.1 Regulating the production process

2.1.1 The process of turning waste tyres into tyre-derived rubber materials is classified as a waste recovery operation and is subject to the waste management controls in the Waste Framework Directive and domestic legislation. This Quality Protocol does not affect the obligation for producers to hold an environmental permit that authorises the storage and processing of waste tyres and to comply with its conditions.

2.2 Criteria for producing tyre-derived rubber materials that have ceased to be waste

2.2.1 To comply with this Quality Protocol the tyre-derived rubber material must require no further processing before use. To do this the criteria outlined in Sections 2.3 to 2.5 must be met. In addition, the producer must demonstrate that they are compliant with an industry lead 'best practice' Certification Scheme as detailed in Section 3 and the material should be destined for use in one or more of the designated applications in the designated market sectors listed in Section 4.

2.3 Input materials

- 2.3.1 Source-segregated waste tyres classified under List of Waste Codes (LoW) code 16 01 03 end-oflife tyres are the only acceptable input materials. Specifically these are waste tyres that have been removed from road vehicles, and off-road vehicles such as agricultural and earth-moving equipment, but excluding aircraft tyres.
- 2.3.2 Whilst tyres which contain small amounts of contamination arising from their use or handling, such as earth and stones, or grease and oils are considered to be acceptable for use, those which have been contaminated with foreign matter or contaminants as a result of being fly-tipped or buried are not acceptable.

2.4 Processed in accordance with the approved material standard

- 2.4.1 Tyre-derived rubber materials can be produced in accordance with this Quality Protocol using either ambient or cryogenic processing technologies.
- 2.4.2 The producer must comply with all the requirements of the approved material standard PAS 107:2012. Additional material standards may subsequently be approved by the relevant regional Regulatory Body for inclusion to this Quality Protocol.

- 2.4.3 The tyre-derived rubber materials resulting from the process must have been processed to, and fall within, one of the size categories stated in PAS 107:2012 'Table 5 Characteristics of all size reduced tyre materials' in order to comply with this Quality Protocol.
- 2.4.4 Producers should be aware that the approved material standard is subject to regular periodic review and Producers should ensure they comply with the latest revision.

2.5 Meets the requirements of specified engineering standards

- 2.5.1 The producer should also comply with all the requirements of the specified engineering standard (where such a standard exists) and should ensure that the intended Designated Applications is within one of the following market sectors (see also Section 4). Appendix B lists engineering standards identified at the time of publishing this Quality Protocol.
 - Construction;
 - Civil Engineering;
 - Landfill Engineering;
 - Landscaping;
 - Horticulture;
 - Equestrian;
 - Play Surfacing;
 - Sports Surfaces;
 - Home Products;
 - Automotive;
 - Industrial; and
 - Transport/Traffic.
- 2.5.2 Producers should be aware that the engineering standards and product standards are subject to regular periodic review and Producers should ensure they comply with the latest revisions.

2.6 Meets any additional customer specification

2.6.1 In addition to the requirements set out in Sections 2.3 to 2.5, a customer may also specify additional requirements for the tyre-derived rubber materials to meet.

Providing evidence of compliance with the Quality Protocol

- 3.1 Producers must be able to demonstrate compliance with the requirements of this Quality Protocol or the TDRM produced may be waste.
- **3.2** Producer compliance must be demonstrated by an independent third-party audit against the requirements of an industry lead 'best practice' Certification Scheme.
- 3.3 The producer will also be expected to keep relevant records to demonstrate compliance to the auditor and it is likely that some records may already be required as part of the producer's Environmental Permit conditions. This Quality Protocol does not affect the obligations on producers to comply with their Environmental Permit conditions. For example, additional records will also need to be made available to the auditor to demonstrate compliance with the Producer's waste management Duty of Care.

3.4 Certification

- 3.4.1 The industry lead 'best practice' Certification Scheme has to be approved by the relevant regional Regulatory Body and the Scheme Owner will also be required to demonstrate their ability to manage the administration of the compliance scheme.
- 3.4.2 The scope and an example of a typical industry led 'best practice' Certification Scheme is set out in Appendix E. Other Schemes may be acceptable but they should contain at least those elements suggested in Appendix E.
- 3.4.3 The Scheme Owner will undertake the role of the approved Certification Body and issue a Certification Body Mark confirming that the producer has successfully been assessed against the requirements of the Quality Protocol and PAS107:2012 by means of an independent third-party audit.
- 3.4.4 The role of the Certification Body is set out in Appendix D.
- 3.4.5 The Certification Body Mark can only used by those TDRM producers who demonstrate full compliance with the Quality Protocol and in addition meet certain minimum operating standards.
- 3.4.6 The results of the audit will be shared with the relevant regional Regulatory Body so that their local Regulatory Officers are aware of the identities of TDRM producers who are manufacturing Certification Body Marked products which have achieved 'end of waste' status. Marked products which have achieved 'end of waste' status.

3.5 Records management

- 3.5.1 Records must be kept of incoming wastes intended for the purpose of producing tyrederived rubber materials. In addition to recording the requirements detailed in PAS 107:2012, it must be noted whether the load was accepted.
- 3.5.2 Records of all inspections and testing carried out for compliance with PAS 107:2012 and any specified engineering standards should be retained.
- 3.5.3 Records must be kept of all tyre-derived rubber materials leaving the production site. In addition to recording the requirements detailed in PAS 107:2012, supply documentation must also be kept. This documentation must include the following elements:
 - date of supply;
 - customer's name, contact details and nature of business;
 - producer's name and contact details (including address of processing site);
 - details of the designated application for which the material is destined (see Section 4);
 - quantity supplied by weight/volume;
 - details of certification including certification number; and
 - a copy of the Quality Statement.
- 3.5.4 The Quality Statement should contain, as a minimum, the following information:
 - the approved material standard to which the tyre-derived rubber materials comply (PAS 107:2012);
 - the engineering standard to which the tyre-derived rubber materials supplied comply (if required, see Paragraph 2.5.1);
 - a statement that the tyre-derived rubber materials supplied were produced in conformance with this Quality Protocol; and
 - information on good practice relating to the storage and use of the tyre-derived rubber materials is contained with PAS 107:2012 Paragraph 7.4 and Annex E respectively.

Storage and use of tyre-derived rubber materials

4.1 Storage of tyre-derived rubber materials

- 4.1.1 Tyre-derived rubber materials produced in accordance with this Quality Protocol, which are therefore regarded as having ceased to be waste, may need to be temporarily stored either in an off-site storage facility before delivery to the customer or at the customer's premises. The materials so stored, will not be waste at that point so waste management controls will not apply.
- 4.1.2 Producers and users should follow the accepted good practice for the storage of both waste tyres and tyre-derived rubber materials. This good practice guidance is given in Appendix C.
- 4.1.3 If it appears that the material is being stored indefinitely with no certainty of use, the material will revert to being a waste and waste management controls will apply, as specified in Section 1.4.

4.2 Designated market sectors

- 4.2.1 To comply with this Quality Protocol, the tyre-derived rubber materials must be destined for use in one of the designated applications listed in bullet points in paragraph 4.2.3 below within the designated market sectors also listed in paragraph 4.2.3 below.
- 4.2.2 As part of WRAP's End Product Marketing Support Programme a report⁴ was published on the end of life tyres sector and this document highlighted various end products made from waste tyre rubber. These are listed as the bullet points in the next paragraph.
- 4.2.3 Within the designated applications below, example final end uses are given. These example end uses are not intended to be exhaustive and other similar final end uses may also be appropriate. However, the suitability of other similar end uses should be confirmed with the Certification Scheme Owner. If the proposed use is different from the uses listed below a formal application to the relevant regional Regulatory Body's End of Waste Panel may be required.
 - Construction
 - Noise insulation/acoustic barrier material;
 - Thermal insulation;
 - Composite boards and sheets; or
 - Rubberised adhesives and mastics.
 - Civil engineering (unbound applications)
 - Replacement aggregate in construction of road infrastructure, as roadbed stabiliser, slope stabiliser, bridge abutments and as an additive for rubberised asphalt (refer to Appendix B: engineering standards);
 - Low-weight soil replacement for embankments over compressive terrain; or

- Loose (unbound) material in surfacing of footpaths, nature trails, cycle paths, bridleways, roads and railways as ballast (refer to Appendix B: engineering standards).
- Civil engineering (bound applications)
 - Replacement aggregate in the construction and building industry, e.g. use in block fabrication;
 - Bound material in surfacing of footpaths, nature trails, cycle paths, bridleways, roads and railways as ballast (refer to Appendix B: engineering standards);
 - Rubber replacement aggregate in concrete for architectural applications;
 - Compressible rubber sheet for alleviation of subterranean ground movement alongside buried structures;
 - Bound rubberised product, e.g. wall and floor boarding, street furniture (e.g. seating and signposts); or
 - Marine reefs.
- Landfill engineering
 - as a replacement aggregate in the construction of landfill sites (e.g. drainage layer) (refer to Appendix B: engineering standards).
- Landscaping
 - Walkways; or
 - Turf/ground reinforcement.
- Equestrian
 - Bedding/floors; or
 - Ménage and gallops.
- Play surfaces
 - Unbound material in sports surfacing, e.g. rubber playground mulch;
 - Unbound material in recreation and safety surfacing, e.g. playground surfaces; or
 - as bound material in safety surface matting.
- Sports surfaces
 - Unbound material in sports surfacing, e.g. artificial turf, racecourses, equestrian surfaces and running tracks;
 - Unbound material in recreation and safety surfacing, e.g. nature trails, bridleways, cycle trails; or
 - Bound material in anti-vibration matting and impact protection barriers.
 - Home Products
 - Footwear;
 - Carpet underlay; or
 - Mouse mats.
- Automotive
 - Vehicle bumpers, floor mats, insulation, vehicle components; or
 - New tyre raw material.
- Industrial
 - Safety surfacing;
 - Belting, matting, Membranes, air-conditioning mats;
 - Sealants; or
 - Adhesives and mastics.
- Transport/traffic

- Asphaltic rubber wearing course road surfacing/Surface Matting;
- Street furniture rubber planters, traffic management barricades; or
- Boat fenders;
- 4.2.4 The relevant regional Regulatory Bodies and WRAP are aware of the emerging nature of the market in the UK for tyre-derived rubber materials. The application of the Quality Protocol to new market sectors and applications should be referred to the Certification Scheme Owner who will then in turn contact the relevant regional Regulatory Body (see Paragraph 4.2.3). If there are significant changes to the market place this will be reviewed according to the review schedule detailed in Section 1.6.

APPENDIX A

Definitions

In this Quality Protocol, the words and phrases below have the following meanings:

Term	Description
Ambient processing	The process of cutting and grinding whole tyres using a mechanical process at room (ambient) temperatures as referred to in British Standards Institution's Publicly Available Specification for the collection, initial storage, production and final storage of size reduced, tyre-derived rubber materials (BSI PAS 107: 2012).
Approved material	The standard PAS 107:2012 and any other standard approved by the relevant
standard	regional Regulatory Body for inclusion in this Quality Protocol.
Bound	Size-reduced tyre-derived rubber material is held by another material, for example within a resin matrix.
Certification	Process of certifying that the independent verification undertaken was valid and proved that the product met the approved standard and the requirements of the Quality Protocol.
Certification Body	A third party, independent of the producer, that operates to rules agreed with the relevant regional Regulatory Bodies and provides independent certification that the product meets the approved standard and the requirements of the Quality Protocol. The same organisation may also undertake independent verification.
Certification Body Mark	This is the element of the mark that will be unique to the Certification Body. It may be their company logo or other logo that they choose to use for Certification.
Cryogenic processing	The process of breaking down tyres into rubber crumb at low temperatures using liquid nitrogen.Cryogenic processing is not currently included in any publicly available standard. However, PAS 107 can still be followed for this type of processing.
	Therefore in order to ensure the tyre-derived rubber material can be considered to be manufactured in accordance with this Quality Protocol, all sections of PAS 107 must be adhered to except those parts of Section 7.3 (production process) which, by their nature, apply only to ambient processing.
	Copies of BSI PAS 107:2012 documentation can be obtained free from: The Tyre Recovery Association (TRA) at http://www.tyrerecovery.org.uk/
Designated applications	Collective term for the final use to which tyre-derived rubber material is put within the designated market sectors as set out in paragraph 4.2.3.
Designated market	The sector(s) listed in Section 4 in which this Quality Protocol sector(s) enables tyre-derived rubber materials to be used.

APPENDIX A

Duty of Care	The Duty of Care is set out in the Environmental Protection Act 1990 (Section 34) and associated regulations. It applies to anyone who is the holder of waste, which will include end-of-life tyres. Persons concerned with waste must ensure that the waste is managed properly, recovered or disposed of safely, does not cause harm to human health or pollution of the environment.
Engineering standards	The standards listed in Appendix B the requirements of which must be met for material destined for end uses in the civil engineering (unbound applications) and landfill engineering market sectors.
Environment Agency	The Environment Agency is the leading public body for protecting and improving the environment in England. Its job is to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world.
	More information can be obtained from the Environment Agency's National Customer Contact Centre on 03708 506 506, or from its website <i>https://www.gov.uk/government/organisations/environment-agency/services-information</i>
Environmental Permit	Environmental permits issued under the Environmental Permitting (England and Wales) Regulations 2010.
European Economic Area (EEA)	The EEA States consist of members of the EU together with Iceland, Liechtenstein and Norway. Switzerland is not part of the EEA but linked through a series of bilateral agreements. Although the Channel Islands and the Isle of Man are part of the UK, they are not part of the EU and businesses registered there are subject to different licensing legislation.
Waste Exemption	Is a waste activity as defined under Regulation 5 of the Environmental Permitting Regulations 2010
List of Wastes (LOW)	List of Wastes (LOW) Regulations 2005 transpose the European Waste Catalogue (EWC) into domestic legislation.
Natural Resources Wales (NRW)	Natural Resources Wales is the leading public body for protecting and improving the environment in Wales. Information can be obtained by calling 0300 065 3000 or from NRW's website at http://naturalresourceswales.gov.uk/how-we-regulate-vou/?lang=en
Northern Ireland Environment Agency (NIEA)	Northern Ireland Environment Agency (NIEA) is the leading public body for protecting and improving the environment in Northern Ireland. Its job is to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world. Information can be obtained by calling 0845 302 0008 or from NIEA's website http://www.ni-environment.gov.uk/waste-home/authorisation.htm
Producer(s)	The operator(s) undertaking used tyre shredding, crumbing and granulating processes.

APPENDIX A

Quality Statement	Documentation accompanying each load or consignment of tyre- derived
	rubber materials supplied.
Regional Regulatory Bodies	The regional Regulatory Bodies that will oversee the application of the Quality
	Protocol are:
	• Environment Agency (EA)
	Northern Ireland Environment Agency (NIEA)
	Natural Resources Wales (NRW)
Scheme Owner	A trade body or similar organisation that sets up and manages an industry
	lead 'best practice' certification scheme
Technical Standards and	Seeks to ensure the transparency of technical regulations and is intended to
Regulations Directive	help avoid the creation of new technical barriers to trade within the European
98/34/EC	Community.
Tyre-derived rubber	For the purposes of this document, tyre-derived rubber material is the size-
materials	reduced rubber fraction of used tyres meeting the requirements of this Quality
	Protocol.
Unbound	Shredded or crumbed material is applied in the form of loose fill.
User(s)	Individuals or organisations that obtain tyre-derived rubber materials from
	a producer or third party with the intention of using those materials for a
	designated application set out in paragraph 4.2.1.
Waste management	Controls under legislation that govern the treatment, handling, containment
controls	and storage of waste. For example, in compliance with Article 11 of the Waste
	Framework Directive the user might need to apply to the relevant regional
	Regulatory Body for a permit.
Waste tyres	End-of-life tyres [List Of Waste Code 16 03 10] that have been removed
	from road vehicles and off-road vehicles such as agricultural and earthmoving
	equipment and accompanied by a waste transfer note or delivery note.
	Excludes used tyres from aircraft. The chain of custody from the point
	of arising to processing, including via used tyre collectors or retread
	manufacturers, must be clearly demonstrated.
WRAP (Waste & Resources	WRAP helps individuals and businesses reduce waste and recycle more,
Action Programme)	making better use of resources and helping to tackle climate change.

APPENDIX B

Engineering standards to which this Quality Protocol applies

In the case of material that is destined for use in either the civil engineering (unbound applications) or landfill engineering market sectors, producers of tyre-derived rubber materials should be able to demonstrate compliance with an appropriate engineering standard to ensure that the material is suitable for use in the designated application.

The following standards are considered relevant to applications in the civil engineering (unbound applications) and landfill engineering market sectors listed in Section 4. Producers of tyre-derived rubber materials should note that this list is not intended to be exhaustive and additional relevant standards may exist. Standards may also be published or withdrawn at any time and you must ensure you are using the most up to date version.

The Producer of the TDRM material will need to present the Designated Application of their product during the Certification process so that it can be assessed whether the engineering standards have been met and remain up to date.

Civil engineering applications of tyre-derived rubber materials

1 BS EN 13043:2002 Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas

Contains detailed quality requirements to be met by aggregates for use in asphalt and other surface treatments.

2 BS EN 13055-2:2004 Lightweight aggregates part 2: lightweight aggregates for bituminous mixtures and surface treatments and for unbound and bound applications materials

Contains detailed quality requirements to be met by lightweight aggregates for use in asphalt and other surface treatments.

3 BS EN 13242:2013 Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction

Contains detailed quality requirements to be met by aggregates for use in unbound and hydraulically bound materials.

4 BS EN 13285:2010 Unbound mixtures. Specifications

Contains detailed quality requirements to be met by unbound aggregate mixtures. Supported by the Quarry Products Association (an information bulletin is available: http://www.qpa.org/downloads/bulletin06.pdf).

5 BS EN 13450:2013 Aggregates for railway ballast

Specifies the properties of aggregates obtained by processing natural or manufactured materials or recycled crushed unbound aggregates for use in construction of railway track.

Landfill engineering applications of tyre-derived rubber materials

6 Guidance on the use of tyres for leachate drainage blankets on landfill sites (Environment Agency, 2008) Interim guidance for the design and construction of leachate drainage blankets including characterisation of size reduced materials.

APPENDIX C

Good practice for the storage of tyrederived rubber materials and use in unbound Applications

Good practice for the storage of tyre-derived rubber materials

Good practice for the storage of tyre-derived rubber materials both on site and at an interim location should be followed; these can be found in Paragraph 7 of PAS 107:2012.

Additional good practice for interim storage is as follows:

- Processors should retain ownership of all tyre-derived rubber materials stored at any location other than the site of manufacture until such time as the materials are delivered to the customer at the site for their final use.
- Tyre-derived rubber materials should only be stored at an interim location for a maximum of 12 months.
- A maximum of 5,000 tonnes of tyre-derived rubber material may be stored at an interim location.
- Stockpiles of tyre-derived rubber materials may be at risk from fire and spontaneous heating. Additional detailed fire safety guidance is available from the Health and Safety Executive (HSE)⁵ and should be followed. Risk of spontaneous heating can be mitigated by, for example:
 - minimising pile size;
 - controlling moisture levels;
 - managing stock to prevent piles being left for long periods;
 - monitoring sub-surface temperature;
 - turning piles at risk of spontaneous heating;
 - minimising external heating e.g. shading from direct sunshine; and
 - controlling ventilation by enclosure if possible.
- Information on fire safety relating to the storage and use of the tyre-derived rubber materials is contained with PAS 107:2012 Annex B.
- The Environment Agency has published various pollution prevention guidance documents for mitigating fire risk:
 - Our Pollution Prevention Pays Getting your site right good practice guidance; (This gives basic advice on pollution prevention);
 - Pollution Prevention Guideline 18 (Further information on how to manage run-off generated in a fire ('firewater'));
 - Pollution Prevention Guideline 21 (Guidance on how to plan a response to a pollution incident);
 - Pollution Prevention Guideline 28 (Controlled Burn);
 - Pollution Prevention Guideline 29 (Safe Storage Combustible materials prevent and control fire); and
 - CIRIA Report 164 (How to deal with major spillages).

APPENDIX D

Role of the Certification Body

The Certification Body will agree the scheme rules with the relevant regional Regulatory Body. The Certification Body will also make available to the relevant regional Regulatory Body at any time the results of any audits undertaken against the Responsible Recycler Scheme, PAS107:2012 and the Quality Protocol. This will allow the regulator to inspect and monitor the third-party assessments of participating organisations that wish to demonstrate that their TDRM product has ceased to be waste (in accordance with this Quality Protocol).

The Certification Body must make provision to ensure that:

- The method of certification demonstrates that users have met both the requirements of PAS 107:2012 and those of the Quality Protocol;
- Compliance with PAS 107:2012 and the Quality Protocol are certified annually by the Certification Body
- The Producer's source documentation, evidence of site management procedures (including compliance with its Quality Management System) and laboratory test results is verified;
- The Certification Body or its authorised contractor carries out at least one site inspection audit per year to verify site documentation and to oversee the sampling of at least one batch of tyre-derived rubber materials;
- The Certification Body or its authorised contractor will assess whether the engineering standards are up to date and have been met by the Producer of the TDRM material.
- A public register of certified companies should be published on the internet and made available to the public;
- The use of the Certification Body Mark is performed correctly and it does not harm the credibility of the TDRM product in the market place;
- The relevant regional Regulatory Body is to be provided with a copy of the Certificate following the Certification assessment so that their staff are aware of the status of the material manufactured by the Producer. In addition they will be provided with details of major non-conformances with respect to the Producer's Environmental Permit, Licence or Exemption and Duty of Care;
- If the Certification Body carries out follow up audits or intermediate inspections of a Producer reveals that the TDRM produced is no longer compliant with PAS107:2012 and this Quality Protocol, the approved use of the Certification Body Mark for their product will be withdrawn. The relevant regional Regulatory Body will be advised that the End of Waste Criteria for the TDRM is no longer being met and the Producer is managing the materials as a waste product subject to his Environmental Permit or Waste Exemption; and
- Certification is overseen by an impartial committee comprising of senior management of the Industry led 'Best Practice' Certification Scheme Owner which adjudicates on any matters of non-compliance.

APPENDIX E

Required scope and typical example of an Industry Led 'Best Practice' Certification Scheme

This Appendix is divided into three parts which explains and demonstrates the operation of an industry lead 'Best Practice' certification scheme. Other schemes may be acceptable but should incorporate the following features including:

- The requirements for Producers seeking Tyre Derived Rubber Material Certification;
- The scope of a typical industry lead 'Best Practice' scheme; and
- The Tyre Industry Federation's Responsible Recycler Scheme

A. Requirements for Producers requiring Tyre Derived Rubber Material Certification;

There are no legal requirements to become certified. Producers are free to operate in the market without Certification, but their production will remain categorised as waste.

Certification requires compliance with:

- PAS 107:2012 Specification for the manufacture and storage of size reduced tyre materials; and
- The Quality Protocol Tyre-derived rubber materials End of waste criteria for the production and use of tyre-derived rubber materials.

Compliance will be assessed by a Certification Body (or its authorised contractor) approved by the relevant regional Regulatory Bodies.

Obtaining Certification

The following bullet-points set out the process by which a TDRM Producer must follow to obtain Certification. This process must be included within a Certification Body's system:

- Identify a suitable Certification Body to which an application will be made for certification;
- The Producer must obtain the following documents:
- PAS 107:2012 Specification for the manufacture and storage of size reduced tyre Materials; and
- The Quality Protocol for Tyre-derived rubber materials End of waste criteria for the production and use of tyre-derived rubber materials.

These documents are the basic technical requirements for certification and along with the rules and requirements of the Certification Body from the TDRM scheme requirements;

APPENDIX E

- The Producer assesses its internal business management systems to ensure they comply with the requirements of PAS 107:2012 and the Quality Protocol e.g. its processes, procedures, operational controls, quality assurance and testing. These systems must include all of the quality assurance testing requirements in the PAS 107 document and the Quality Protocol;
- Then make application to chosen Certification Body, this usually includes providing the Certification Body with various specific items of information regarding the company and its legal status;
- Undergo initial audit product testing with Certification Body;
- Make amendments to processes, systems and procedures etc as necessary to correct any nonconformity identified before certification is granted;
- Accept that the findings of the certification application will be made available to the relevant regional Regulatory Body so that their staff are made aware of the environmental performance of the Producer's site; and
- Payment of the Certification Fee where required by the Certification Body.

Maintaining Certification

The following bullet-points set out the continued commitment by the Producer in order to retain certification once awarded:

- Ongoing maintenance of systems and processes in accordance with requirements verified by a regular audit programme sanctioned by the Certification Body;
- The use of the Certification Body Marks in the prescribed manner; and
- Payment of Renewal of Certification Fees where required by the Certification Body.

B. Scope of a Typical Industry Lead 'Best Practice' Scheme

Scope

The Certification Scheme covers the following:

- a) PAS 107:2012 Specification for the manufacture and storage of size reduced tyre materials; and
- b) Quality Protocol for Tyre-derived rubber materials End of waste criteria for the production and use of tyre-derived rubber materials.

Requirements of Certification Body

In order for a Certification Body to be approved by the relevant regional Regulatory Body to operate the TDRM Certification Scheme it will be required to be:

- a) fully conversant with the requirements of the Certification Scheme
- b) in a position to fully implement all scheme requirements; and
- c) approved by the relevant regional Regulatory Body for the region in which the Producer is based

APPENDIX E

Approval of the Certification Body by the relevant regional Regulatory Body

To apply to operate their Certification Scheme the Certification Body must obtain approval for their scheme from the relevant regional Regulatory Body.

Suspension, and Withdrawal

The relevant regional Regulatory Bodies may, in certain circumstances withdraw a Certification Body's approval to operate the Certification Scheme. In such cases the following procedures will be undertaken in the following order:

- a) Requirement for the Certification Body to undertake and prove corrective action;
- b) Suspension of the Certification Body until such time that the Certification Body can demonstrate that they have taken any required corrective actions; and
- c) Withdrawal (removal) of the Certification Body.

Conditions of use of the Certification Body Mark

The Certification Bodies may allow their certified Producers to use a Certification Body Mark. In all cases Certification Bodies must ensure that all certified clients use the Certification Body Mark and wording in a manner that complies with the requirements below:

- The marks or words used in reference to the Scheme Certification may only be used by companies that are certified by the Certification Body to the requirements of the Certification Scheme.
- Certification Body Marks and wording may only be used on literature relating to the specific TDRM product for which Certification has been granted and that are stated within the scope of Certification on the certificate. Such literature can include, but is not limited to:
 - a) Headed notepaper and compliment slips;
 - b) Websites; and
 - c) Sales brochures.
- The Certification Body Marks may also be used on the certified product, its packaging, and accompanying paperwork, certificates of conformity etc.
- Permission and approval for each use of any Certification Body Mark or wording relating to Scheme Certification must be obtained from the Certification Body.
- Use of Certification Body Marks or wording in relation to products which are not covered by the Scheme Certification is specifically forbidden. Sales literature containing information about non-certified products or other products must make it clear that they are not covered by the Scheme Certification.

The Certification Body Mark

This mark will be unique to the Certification Body. It may be their company logo or other logo that they choose to use for Certification.

Any depiction outside these requirements must be submitted to the Certification Body for interpretation, guidance, or signed approval.

APPENDIX F

Auditing

The Audit Team will develop and implement an audit plan to perform an inspection of the Producer's that aims to determine whether:

- a) information and evidence exists to demonstrate that his organisation's structure, policies, processes, procedures, records and related documents conform to the requirements of PAS 107: 2012 and the Quality Protocol for Tyre-derived Rubber Material;
- b) the internal monitoring, measuring, reporting and reviewing of performance are relevant to the intended scope of Certification;
- c) all elements of legal compliance are understood and implemented;
- d) the operational control processes and procedures are established, implemented and maintained effectively and provide a basis for confidence in the organisation's management system;
- e) internal audits and management reviews are being effectively implemented;
- f) the relevant roles, responsibilities, authorities and accountabilities are defined as applicable; and
- g) links between the requirements of PAS107:2012, the Quality Protocol, company policies, objectives, targets, legal requirements, responsibilities, competence, operations, procedures, and performance data are effective.

C. The Tyre Industry Federation's - Responsible Recycler Scheme.

As part of the Audit Process on behalf of the Tyre Recovery Association (the Scheme Owner and Certification Body) will, by means of independent third-party audit, check that the Producer of the TDRM Product is compliant with PAS 107:2012 and this Quality Protocol

The Responsible Recycler Scheme covers wider issues of best practice in the tyre industry including the following:

- Any actions from previous audits are fully completed;
- Compliance with the Duty of Care Regulations;
- Registered waste carriers are used for all waste transport;
- Operating sites where wastes are managed are appropriately permitted by the EA, SEPA, NIEA or NRW i.e. compliant with their Environmental Permit, Licence or Exemption;
- Operating sites where wastes are managed are well engineered for drainage;
- Staff managing sites are Technically Competent;
- Relevant regional Regulatory Body inspection reports only have positive comments or no comments or have minor criticisms which have been actioned;
- All waste records are reported to the relevant regional Regulatory Body; and
- The Producer is compliant with the Environmental Permits, Licences and Exemptions with respect to the volumes of waste stored on their premises.

Members of the Tyre Recovery Association that have successfully completed the Certification process on payment of their Certification Fee will be issued with a uniquely numbered certificate and will be able to use the Certification Body Marks on their Products and letter heads.

Failure to comply with the requirements of the best practice outlined in the Responsible Recycler Scheme will result in membership of the Tyre Recovery Association being revoked.

Document produced in association with:







