QUALITY PROTOCOL

End of waste criteria for the production and use of products from fully processed waste derived wood

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This Quality Protocol was funded by Defra, the Welsh Assembly Government (WAG), the Northern Ireland Environment Agency (NIEA) and the European Regional Development Fund (ERDF*) as a business resource efficiency activity. It was developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with Defra, WAG, industry and other regulatory stakeholders as part of the South East England Development Agency ERDF funded Pathway to Zero Waste programme. The Quality Protocol is applicable in England, Wales and Northern Ireland. It sets out the end of waste criteria for the production and use of products from fully processed waste derived wood.

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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 otherwise 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 Court of Justice of the European Union 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 can be regarded as having ceased to be waste and thus when the Directive's waste management controls should no longer apply. This identification is the purpose of the Waste Protocols Project.

More specifically, depending on the circumstances of the waste stream concerned, the project seeks to achieve one of the following outcomes:

- to produce a Quality Protocol identifying the point at which waste, having been fully recovered, may be regarded as a non-waste product that can be either reused by business or industry, or supplied into other markets, enabling it to be used without the need for waste management controls; and

- to produce a statement that confirms to the business community what legal obligations they must comply with to use the treated waste material.

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 is 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 where appropriate points to good practice for the 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.

1. Introduction

Definitions of terms that appear in *italics* when they are first used in this *Quality Protocol* are given in Appendix A.

1.1 What is this Quality Protocol?

1.1.1 This Quality Protocol has been developed by the *Environment Agency*, the *Northern Ireland Environment Agency (NIEA)*, *WRAP (Waste & Resources Action Programme)* and the European Regional Development Fund, in consultation with industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.

1.1.2 The Quality Protocol sets out end of waste criteria for the production and use of products from *fully processed waste derived wood*, where the *clean waste wood* subject to processing is non-virgin wood from *post-consumer* and post-industrial sources. 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 *end users* are not obliged to comply with the Quality Protocol. If they do not, *waste wood* they process or use will normally be considered to be waste and *waste management controls* will apply to its handling, transport and application.

1.1.4 This Quality Protocol does not affect the obligation of producers to hold an *environmental permit* (in Northern Ireland a *waste management licence* or a *Pollution Prevention and Control (PPC)* permit is required) and to comply with its conditions when *processing* and storing waste.

1.1.5 Producers should note that producing a fully recovered product may mean they must meet further legal obligations, e.g. *REACH* registration.[1]

1.2 The purpose of the Quality Protocol

1.2.1 The Quality Protocol has four main purposes:

i. clarifying the point at which waste management controls are no longer required;

[1] Waste has a general exemption 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 the general exemption in REACH no longer applies. Unless specifically exempted (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 (e.g. a suitable safety data sheet). Further information on REACH is available from the REACH UK Competent Authority website www.hse.gov.uk/reach or Helpdesk on 0845 408 9575 or email ukreachca@hse.gsi.gov.uk

ii. providing users with confidence that the fully processed waste derived wood they purchase conforms to the appropriate *approved industry standard(s)*;

iii. providing users with confidence that the fully processed waste derived wood is suitable for use in *designated market sector(s)* including by conforming with the appropriate approved industry *standard(s)* and environmental standard where relevant; and

iv. protecting human health and the environment (including soil).

In addition, the Quality Protocol describes good practice for the use of fully processed waste derived wood destined for use as *landscape material*.

1.3 Complying with the Quality Protocol

1.3.1 Fully processed waste derived wood will normally be regarded as having ceased to be waste, and therefore no longer subject to waste management controls provided:

- where destined for use in *panelboard manufacture*, it:
  - has been produced using only those input materials specified in Section 2;
  - meets the requirements of the relevant approved industry standards or specifications (currently PAS 111: 2011 and PAS 104: 2004) for the designated market;
  - meets any additional requirements specified by the customer; and
  - is used to manufacture *particleboard* or medium density fibreboard (MDF) only; and

- where destined for use as landscape material, it:
  - has been produced using only those input materials specified in Section 2;
  - meets the requirements of the environmental standard specified in Section 2 for its designated use within this market;
  - meets the requirements of the relevant approved industry standard or specification (currently PAS111: 2011); and
  - meets any additional requirements specified by the customer.

1.3.2 Producers must demonstrate that these criteria have been met. They should do this in the ways set out in Section 3.

1.3.3 This Quality Protocol will be adopted as a technical regulation under the *Technical Standards and Regulations Directive (98/34/EC)* as amended.[2] We recognise that there may be codes of practice or standards which apply in the *European Economic Area (EEA)* States other than the UK setting out requirements for the production and use of processed waste

[2] The Technical Standards and Regulations Directive 98/34/EC seeks to ensure the transparency of technical regulations and is intended to help avoid the creation of new technical barriers to trade within the European Union.

wood. We accept that processed waste wood may cease to be waste provided it has 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 by this Quality Protocol.

1.3.4 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.

1.4 When Quality Protocol compliant material may become waste

1.4.1 Producers and users of fully processed waste derived wood should note that, even if they comply with the Quality Protocol, 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.

1.4.2 In addition, if Quality Protocol compliant material is mixed with waste materials, the resulting mix will be considered to be a waste and subject to waste management controls. If Quality Protocol compliant material is mixed with 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 processed waste wood does not meet the requirements of the industry standard or the producer cannot demonstrate evidence of compliance, the material produced will normally be considered to be waste. In such circumstances, the producer or user must comply with the appropriate waste management controls[3] for the transportation, storage and use of the waste wood 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 Environment Agency's National Customer Contact Centre on 08708 506 506, from its website (www.environment-

[3] For example, in compliance with Article 23 of the Waste Framework Directive, the user might need to obtain a permit from the Environment Agency (or in Northern Ireland a waste management licence or PPC permit from NIEA).

agency.gov.uk/subjects/waste/) or NetRegs (www.netregs.gov.uk/). In Northern Ireland guidance can be obtained from NIEA's website (www.ni-environment.gov.uk/waste-home/authorisation.htm).

1.6 Updating the Quality Protocol

1.6.1 We plan to review and update this document every two years from the date of its final publication.

1.6.2 However, this document may be subject to change before these review dates. Triggers for such a change could include:

- pollution incidents;
- development in scientific understanding;
- a change in the market;
- a change in legislation or case law;
- a change to the agreed industry standards; and
- a shift in the chemical composition or physical properties of waste wood.

1.6.3 This Quality Protocol may be withdrawn if it becomes apparent that it is generally being misapplied and/or misused.

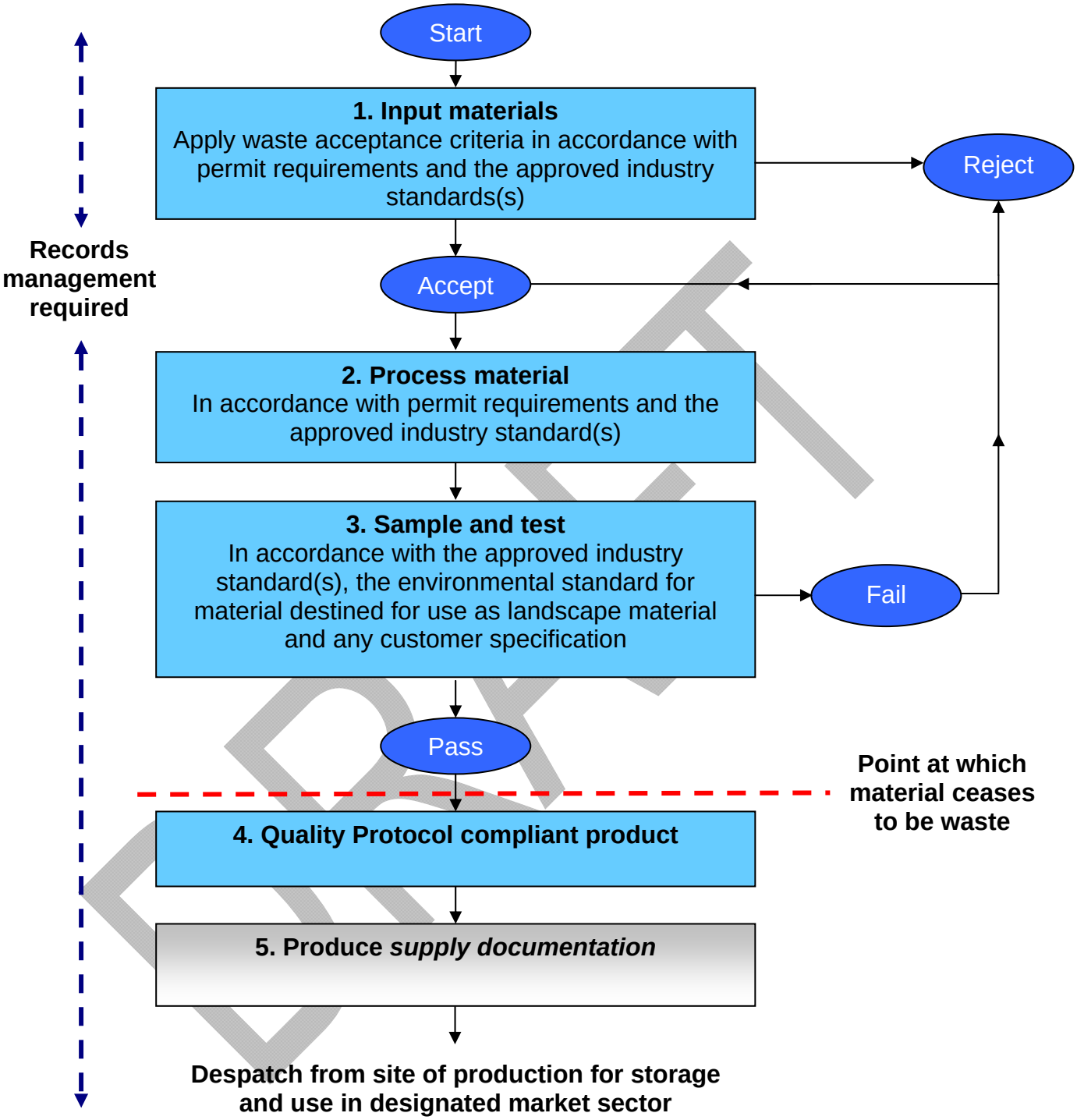
1.7 Importing and exporting Quality Protocol compliant material

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 in England, Wales and Northern Ireland, 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 Shipments Regulation (EC No. 1013/2006).

1.7.2 Those intending to import Quality Protocol compliant material into England, Wales or Northern Ireland should be aware that, if the country of dispatch regards the material as waste, the controls set out in the Waste Shipments Regulation will apply to the shipment. This is the case even though the material may be regarded as having ceased to be waste in England, Wales and Northern Ireland.

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

Figure 1: Main stages and control mechanisms of the Quality Protocol



2. Producing fully processed waste derived wood

2.1 Regulating the production process

2.1.1 The process of turning waste wood into product (fully processed waste derived wood) 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 on producers to hold an environmental permit (or in Northern Ireland a waste management licence or a PPC permit) that authorises the storage and processing of waste wood and to comply with its conditions.

2.2 Criteria for producing fully processed waste derived wood that has ceased to be waste

2.2.1 To comply with this Quality Protocol, fully processed waste derived wood 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 material should be destined for use in one of the designated market sectors described in Section 4.

2.3 Input materials

2.3.1 Clean waste wood is derived only from the following processes or sites, including where the material has first been sorted and bulked at an intermediate facility:

- construction sites;
- demolition sites;
- householders via civic amenity sites and recycling centres as the point at which the waste wood is bulked and enters the recycling chain;
- manufacturing processes involving solid wood (e.g. joinery);
- manufacturing processes involving *woodchip* (both virgin and recycled) such as the manufacture of panelboard; and
- retail or logistics centres – discard of packaging (including pallets).

2.3.2 Only non-hazardous,[4] non-virgin, clean waste wood is an acceptable input material within the scope of this Quality Protocol, specifically:

- waste wood that is untreated and source segregated at the site of production e.g. manufacturing offcuts (suitable for use in all designated market sectors as specified in Section 4);

[4] Wood designated as *hazardous waste* is outside of the scope of this Quality Protocol.

- waste wood that is *visually clean* but potentially from a mixed waste stream and so having the potential to be contaminated with visually undetectable treatments and preservatives e.g. waste pallets (suitable for use in all designated market sectors as specified in Section 4 as long as specific criteria described in this Quality Protocol are complied with); and
- visually *treated waste wood*, e.g. waste wood containing painted or varnished doors, panelboard and laminated wood products etc (only acceptable in panelboard manufacturing and only where specific criteria described in this Quality Protocol are complied with, specifically the requirements of PAS 104: 2004[5] as a relevant approved industry standard detailed in Appendix B).

2.3.3 PAS 111: 2011 contains a list of *European Waste Catalogue (EWC)* codes that describe wood waste within its scope.

2.3.4 In addition to the sources above, waste wood may be produced from forestry activities and *virgin wood* processing (e.g. wood offcuts, shavings or sawdust from sawmills) or during the manufacture of *timber* products from virgin wood. Virgin wood is not considered as an input material in this Quality Protocol.[6]

2.3.5 With the exceptions described in Section 2.3.2, treated waste wood is excluded from the scope of this Quality Protocol. This includes treated waste wood that is visually clean but arises from a waste stream that is known to include treated waste wood, e.g. off-specification joinery timber that has been treated with fire retardants.

Panelboard manufacture

2.3.6 In addition to the requirements in Section 2.3 above, when destined for use in panelboard manufacturing, input materials must not include waste wood treated with creosote or chromated copper arsenate (CCA) preservatives, including vacuum pressure treated structural timber.

Landscape materials

2.3.7 In addition to the requirements in Section 2.3 above, when destined for use as landscape material, input materials must not include waste wood treated with creosote, urea formaldehyde (including chipboard and

[5] PAS 104:2004 specifies that, on visual inspection, input materials shall contain no more than 5 per cent by mass contamination. This includes treated waste wood (hardboard, medium density fibreboard (MDF) and painted wood) and other organic and inorganic physical contaminants.

[6] The Environment Agency and NIEA do not regard waste derived from virgin wood to be subject to waste management controls provided it is certain to be used in specific common end uses. Please refer to their current position statements for the environmental regulation of wood. For England and Wales, the relevant document is available from the Environment Agency's website (www.environment-agency.gov.uk). For Northern Ireland, the relevant document is available from the NIEA's website (www.ni-environment.gov.uk).

fibreboard), ammonium compounds or CCA preservatives (including vacuum pressure treated structural timber).

2.4 Processed in accordance with the approved industry standard(s) and environmental standard for material destined for use as landscape material

2.4.1 The producer must comply with all the requirements of the relevant approved industry standard(s). Appendix B details the approved industry standards agreed for fully processed waste derived wood at the time of publishing this Quality Protocol.

2.4.2 The approved industry standards detailed in Appendix B are subject to review and producers should ensure they comply with the latest version. Any changes to the agreed standards and specifications may trigger a review of the Quality Protocol (see Section 1.6.2).

Panelboard manufacture

2.4.3 When the fully processed waste derived wood they produce is destined for use in panelboard manufacturing, producers must comply with the requirements of both approved industry standards detailed in Appendix B.

Landscape materials

2.4.4 When the fully processed waste derived wood they produce is destined for use as a landscape material, producers must comply with the requirements of PAS 111: 2011 as the relevant approved industry standard detailed in Appendix B.

2.4.5 The producer must also comply with the requirements of the environmental standard applicable for the use for which the landscape material is destined. Appendix C details the standard, the requirements of which differ depending on whether the material is destined for use:[7]

- as *mulch* in soft landscaping applications or as decorative woodchip; and
- in equestrian surfaces (ménages and gallops) or as playground and pathway surface material.

2.4.6 The environmental standard in Appendix C is subject to review and producers and users of landscape material should ensure they comply with the latest version. Any changes to the agreed standard may trigger a review of the Quality Protocol (see Section 1.6.2).

[7] Where the landscape material could potentially be used in any application, the more conservative limits (i.e. those for ménages and gallops or playground and pathway surface material) should be used.

2.5 Meets any additional customer specification

2.5.1 In addition to the requirements set out in Sections 2.3 and 2.4, a customer may also specify additional requirements for the fully processed waste derived wood to meet.

3. Providing evidence of compliance with the Quality Protocol

3.1 Producers must be able to demonstrate compliance with all the requirements of this Quality Protocol.

3.2 Some of the records specified below may already be required as part of the producer's environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland). This Quality Protocol does not affect the obligations on producers to comply with environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland).

3.3 Records management

3.3.1 To be able to demonstrate compliance with the Quality Protocol, producers and end users must maintain records of each sale, supply or application of fully processed waste derived wood.[8]

3.3.2 This documentation must include:

- date of supply;
- customer's name, contact details and nature of business;
- name and contact details of the producer and distributors (as applicable), including the address of the site of production;
- quantity supplied by weight/volume; and
- a copy of a *material safety data sheet (MSDS)* if required by other legislation.[9]

The documentation should also include:

- a statement that the fully processed waste derived wood was produced in compliance with this Quality Protocol; and
- where destined for use as landscape material, confirmation that information on good practice relating to the use of fully processed waste derived wood (as set out in Appendix D) has been supplied to the customer.

3.3.3 These requirements are additional to any statutory record-keeping obligations. However, some records may be used to fulfil both a regulatory obligation and evidence of compliance with this Quality Protocol.

3.3.4 For the purposes of this Quality Protocol the producer, distributor and user must:

[8] Supply documentation is not required for each delivery, only for each application/project.

[9] For additional guidance, refer to the Health and Safety Executive (HSE) *Approved Code of Practice: The compilation of safety data sheets* (3rd edition), L130, ISBN 0717623718, HSE Books, 2002. For further information, contact the HSE InfoLine on 0845 345 0055 or visit the HSE website (http://www.hse.gov.uk).

- keep and retain specified records for a minimum of two years; and
- make them available for inspection by the regulator or farm auditor (if requested).

4. Storage and use of fully processed waste derived wood

4.1 Users of fully processed waste derived wood should:

- take full account of any environmental impact resulting from its use; and
- ensure that its use does not compromise the future sustainable use of water resources, soil resources or the integrity of designated conservation areas.

4.2 Storage of fully processed waste derived wood

4.2.1 If it appears that the material is being stored indefinitely with little prospect of being used, it will revert to being a waste and waste management controls will apply as specified in Section 1.4.

4.3 Use of fully processed waste derived wood in the designated market sectors

4.3.1 This Quality Protocol applies only to the use of fully processed waste derived wood in the following designated market sectors:

- panelboard manufacture; and
- landscape materials.

4.3.2 Producers or users of the fully processed waste derived wood should be able to demonstrate that they have taken full account of any environmental impact resulting from its use.

4.3.3 Good practice guidance for the use of landscape materials is given in Appendix D.

Appendix A Definitions

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

Term	Description
Approved industry standard(s)	The standards listed in Appendix B (PAS 104: 2004 and PAS 111: 2011) and any other standard approved by the Environment Agency for inclusion in this Quality Protocol.
Clean waste wood	Non-hazardous, non-virgin, visually clean waste wood derived from construction and demolition sites, furniture and other timber manufacturing processes, packaging that is free of contamination (e.g. chemical treatment, plastics, metals and grit etc) and householders at the point the material enters the recycling chain.
Contaminants of potential concern (COPCs)	A substance with the potential to affect receptors adversely due to its concentration, distribution, and mode of toxicity.
Defra	Defra is the UK government department responsible for policy and regulations on the environment, food and rural affairs.
Designated market sector(s)	The sector(s) listed in Section 4 in which this Quality Protocol enables fully processed waste derived wood to be used.
End users	Individuals or organisations that obtain fully processed waste derived wood complying with the Quality Protocol to use it in one of the designated market sectors.
Environment Agency	The Environment Agency is the leading public body for protecting and improving the environment in England and Wales. It's our job 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.
Environmental permit	Environmental permits issued or exemptions registered under the Environmental Permitting (England and Wales) Regulations 2010.

European Economic Area (EEA)	The EEA States consist of the members of the EU (Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK) together with Iceland, Liechtenstein and Norway. The crown dependencies of Jersey, Guernsey and the Isle of Man are not part of the UK or EU and businesses registered there are subject to different licensing legislation.
European Waste Catalogue (EWC)	European Waste Catalogue (EWC 2002 and amendments) is a comprehensive list of waste codes and descriptions based on waste source and type. EWC was established by Commission Decision 2000/532/EC amended by Commission Decisions 2001/118/EC and 2001/119/EC and Council Decision 2001/573/EC).
Fully processed waste derived wood	Waste wood that has been fully recovered and will be regarded as a non-waste product.
Hazardous waste	Defined in: • England, in the Hazardous Waste (England and Wales) Regulations 2005 (S.I. 2005/ 894); • Wales, in the Hazardous Waste (Wales) Regulations 2005 (S.I. 2005/1806); and • Northern Ireland, in the Hazardous Waste Regulations (Northern Ireland) 2005 (S.R. 2005/300).
Landscape materials	Materials including mulch but excluding compost and agricultural or horticultural mulch. Applications relevant to this Quality Protocol are: • construction and maintenance of soft landscapes, including domestic gardens; • equestrian surface material for use in, for example, ménages and gallops (arena chip); • decorative woodchip; and • playground and pathway surface material.

Material safety data sheet (MSDS)	A document containing health and safety information on a hazardous product. It includes the chemical and common names of all ingredients that have been determined to be health hazards if they constitute 1 per cent or greater of the product's composition (0.1 per cent for carcinogens). Also includes precautionary guidelines and emergency procedures for handling the product.
Mulch	Material spread as protective covering onto land around trees, bushes or plants to, for example: • suppress weeds; • maintain moisture; • moderate soil temperature; and • provide organic matter as it degrades.
Northern Ireland Environment Agency (NIEA)	The leading public body responsible for protecting, conserving and promoting the natural environment and built heritage in Northern Ireland.
Panelboard manufacture	The process whereby panelboard is manufactured under pressure and heat from particles of wood (wood flakes, chips, fibres, shavings, sawdust, wafers, strands and similar) and/or other lignocellulose material in particle form (flax shives, hemp shives, bagasse fragments and similar) with the addition of an adhesive.
Particleboard	Any timber/wood products manufactured in flat sheets from particles of wood (e.g. chipped wood, wood flakes, shavings, sawdust) bonded through a process involving pressure, heat and adhesive or glue. This generic term describes products such as chipboard and medium density fibreboard (MDF).
Pollution Prevention and Control (PPC) permit (Northern Ireland)	A permit issued under the Pollution Prevention and Control Regulations (Northern Ireland) 2003 S.R. 2003/46. Establishes a pollution control regime for certain installations or mobile plants and includes combustion activities.
Post-consumer	Wood or wood-based materials previously used in consumer or commercial products, discarded for reuse, recycling or disposal but not including sawmill or forestry residues.

Potentially toxic elements (PTEs)	Chemical elements with the potential to have toxic effects on humans, flora or fauna. Some PTEs are also known as 'heavy metals' or 'transition metals' (e.g. lead, cadmium, chromium, mercury, copper, zinc and nickel).
Processing	Production of woodchip from post-consumer and post-industrial waste wood, incorporating the removal of contamination and size reduction.
Producers	The operators undertaking the production process to manufacture materials appropriate for use as landscape materials or as raw materials for use in panelboard manufacturing.
REACH	Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). This Regulation aims to control and limit the risk to human health and the environment from the use of chemical substances and preparations in materials that are available to purchase on the open European market. REACH came into force on 1st June 2007 and replaced a number of European Directives and Regulations with a single system.
Standard(s)	A standard can be defined as a document, established by consensus and approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results whose aim is to achieve the optimum degree of order in a given context. Standards range from individual company standards to multi-national (international) standards.
Supply documentation	Documentation that records to whom fully processed waste wood is supplied, including the document accompanying each load or consignment. The documents detail the chosen standard to which the product complies and states that the processed waste wood was produced in conformance with this Quality Protocol.

Technical Standards and Regulations Directive (98/34/EC)	Seeks to ensure the transparency of technical regulations and is intended to help avoid the creation of new technical barriers to trade within the European Community.
Timber	A general term for natural or sawn wood in a form suitable for building or structural purposes.
Treated waste wood	Wood that has been chemically treated to enhance or alter the performance of the original wood. Treatments include: • penetrating oils; • tar oil preservatives; • waterborne preservatives; • organic-based preservatives; • boron and organo-metallic based preservatives, • boron and halogenated flame retardants; and • surface treatments. Such treatments can be either visually detectable or undetectable.
Virgin wood	Wood that has not had any form of treatment or finishing applied and originates from: • forestry works • virgin wood processing such as wood offcuts, shavings and sawdust from sawmills or timber product manufacture dealing in virgin timber; or • cuttings and brash from tree felling or other forestry management operations.
Visually clean	Waste wood that on visual inspection appears to be free of chemical and physical contamination, including, for example: • treated waste wood; • inorganic materials (e.g. stones and ceramics); • ferrous and non-ferrous metals; and • organic materials (e.g. plastics, rubber and paper).
Waste management controls	Controls under legislation that govern the treatment, handling, containment and storage of waste.

Waste management licence or exemption (Northern Ireland)	An authorisation issued in Northern Ireland under the Waste Management Licensing Regulations (Northern Ireland) 2003 for the deposit, disposal and treatment of waste.
Waste Management Licensing Regulations (Northern Ireland) 2003	Provides for applications in Northern Ireland for waste management licences, which authorise the deposit, disposal and treatment of controlled waste. Includes exemptions from waste management licensing.
Waste wood	Wood which the holder discards, intends to discard or is required to discard.
Woodchip	Solid wood particles mechanically processed by shredding, crushing, pulverising, hammering or chopping of post-consumer waste wood.
WRAP (Waste & Resources Action Programme)	WRAP's vision is a world without waste, where resources are used sustainably. It works with businesses and individuals to help them reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

Appendix B Approved industry standards and specifications to which this Quality Protocol applies

Panelboard manufacturing

The following standards and specifications are relevant to fully processed waste derived wood destined for use in the panelboard manufacturing:

- British Standards Institution's Publicly Available Specification for the requirements and test methods for processing waste wood (BSI PAS 111: 2011); and

- British Standards Institution's Publicly Available Specification: Wood recycling in the panelboard manufacturing industry – Specification for quality and guidance for good practice for the supply of post-consumer wood for consumption in the manufacture of panelboard products (BSI PAS 104: 2004).

Landscape material

BSI PAS 111: 2011 is the only standard and specification relevant to fully processed waste derived wood destined for use as landscape material.

Appendix C: Environmental standard for landscape material

C.1 Table C.1 presents maximum acceptable concentrations for *contaminants of potential concern (COPCs)* in waste wood for use as landscape materials and in equestrian surfaces (ménages and gallops).

C.2 The composition of the landscape materials available for use must not exceed any of the individual values specified in Table C.1 (the 'environmental standard').

Table C.1: Maximum acceptable COPC concentrations in waste wood for use as landscape materials

COPC	Maximum acceptable concentration (mg/kg)	
	Mulch[1]	Ménages and gallops[2]
Bifenthrin	0.022	0.009
Boric acid and boron compounds[3]	0.5	0.205
Chlorfenapyr	0.382	0.158
Clothianidin	0.008	0.003
Cyclohexylhydroxydiazene 1-oxide, potassium salt (K-HDO)	5.55	2.3
Dazomet	0.022	0.009
Dichlofluanid	459.2	190.1
Fenpropimorph	5.7	2.36
Flufenoxuron	0.143	0.059
Thiabendazole[3]	0.29	0.12
Nonylphenol	1.37	0.565
Propiconazole	0.113	0.047
Tebuconazole	0.634	0.262
Thiamethoxam	0.037	0.015
Tolylfluanid	1.68	0.696

[1] Includes soft landscaping and decorative woodchip applications.
[2] Includes playground and pathway surface material.
[3] Concentration takes into account the potential for accumulation from repeat applications to ensure adequate protection of soils.

Sampling and analysis

C.3 The following guidance relates to sampling and analysis requirements to determine the concentrations of the COPCs listed in Table C.1. This guidance does not alter the need to comply with the requirement in PAS 111: 2011 to undertake sampling and analysis for *potentially toxic elements (PTEs)* and other compounds in landscape materials.

C.4 Processed waste wood must be analysed in accordance with the following sampling and analysis methodology:

- Chemical analysis must be carried out by laboratories using appropriate methods that are accredited by the United Kingdom Accreditation Service (UKAS).
- Results should be analysed to demonstrate compliance with the concentrations of each contaminant of potential concern (COPC) shown in Table C.1.

C.5 When first seeking to demonstrate compliance with the requirements of this Quality Protocol, producers should sample and analyse three consecutive batches of processed waste wood destined for use as landscape material. Each batch must comply with the concentrations of each COPC shown in Table C.1.

C.6 Once the requirements outlined in C.5 have been demonstrated, producers should continue to demonstrate compliance by sampling and analysing at least one batch of fully processed waste derived wood destined for use as landscape material for every 5,000 m^3 material available for use. If less than 5,000 m^3 is available for use per year, at least one batch should be sampled and analysed per year.

C.7 All samples sent for testing must be representative of the batch sampled. Guidance on sampling is provided in CEN/TR 15310, BS EN 14899: 2005 and BS EN 12579: 2000.

C.8 Samples should be analysed using a gas chromatography–mass spectrometry (GC-MS) screening method. Limits of detection should be clearly stated and taken into account when comparing results against the relevant concentrations in Table C.1. Test results will be invalid if the laboratory's limit of detection is higher than the corresponding maximum acceptable concentration in Table C.1.

C.9 Results should be compared against the appropriate concentration depending on whether the landscape material is intended for use in mulch or equestrian surface (ménages and gallops) applications. Where the landscape material could potentially be used in either application, the more conservative limits (for ménages and gallops) should be used.

C.10 Sampled batches should not be made available for use until the results of the analysis are known. The material should only then be made available for use as fully processed waste derived wood if the sampled batch has not exceeded any of the maximum acceptable concentrations given in Table C.1.

C.11 Sampled batches for which results exceed any of the concentrations in Table C.1 should be disposed at a suitably permitted facility. Alternatively corrective actions could be undertaken and the batch re-sampled and tested. The requirements outlined in C.10 should then be repeated. Subsequent batches should also be sampled until three consecutive batches comply with all relevant concentrations.

Appendix D: Good practice guidance for the use of landscape material

D.1 The use of fully processed waste derived wood in landscaping applications should comply with the following Pollution Prevention Guidelines (PPGs):

- PPG1: General guide to the prevention of pollution;
- PPG5: Works and maintenance in or near water; and
- PPG29: Safe Storage – Combustible materials, prevent and control fire.

PPGs are available from NetRegs (www.netregs.gov.uk) or the Environment Agency's website (www.environment-agency.gov.uk).

D.2 Compliance with these PPGs should, as a minimum, ensure that water that infiltrates through, or runs off, applications of landscape materials will be prevented from entering surface water directly, specifically:

- Applications of landscape materials should be more than 10 metres from any controlled water, flood defence or standing water body unless an appropriate consent or authorisation has been obtained from the Environment Agency or NIEA as appropriate.
- Landscape materials should not be used in areas where groundwater is vulnerable (e.g. in locations where there is a high groundwater table and thin soil covering) unless an appropriate consent or authorisation has been obtained from the Environment Agency or NIEA as appropriate.