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Waste Wood Legislative Framework



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Waste Wood Legislative Framework

What is Waste Wood?

BSI PAS III:2012 is a document commissioned by WRAP in association with BSI that defines wood waste material into grades A, B, C and D. The industry have adopted these grades but the Environment Agency (EA) regulate waste activities and should be the go-to location for ensuring your installation is compliant.

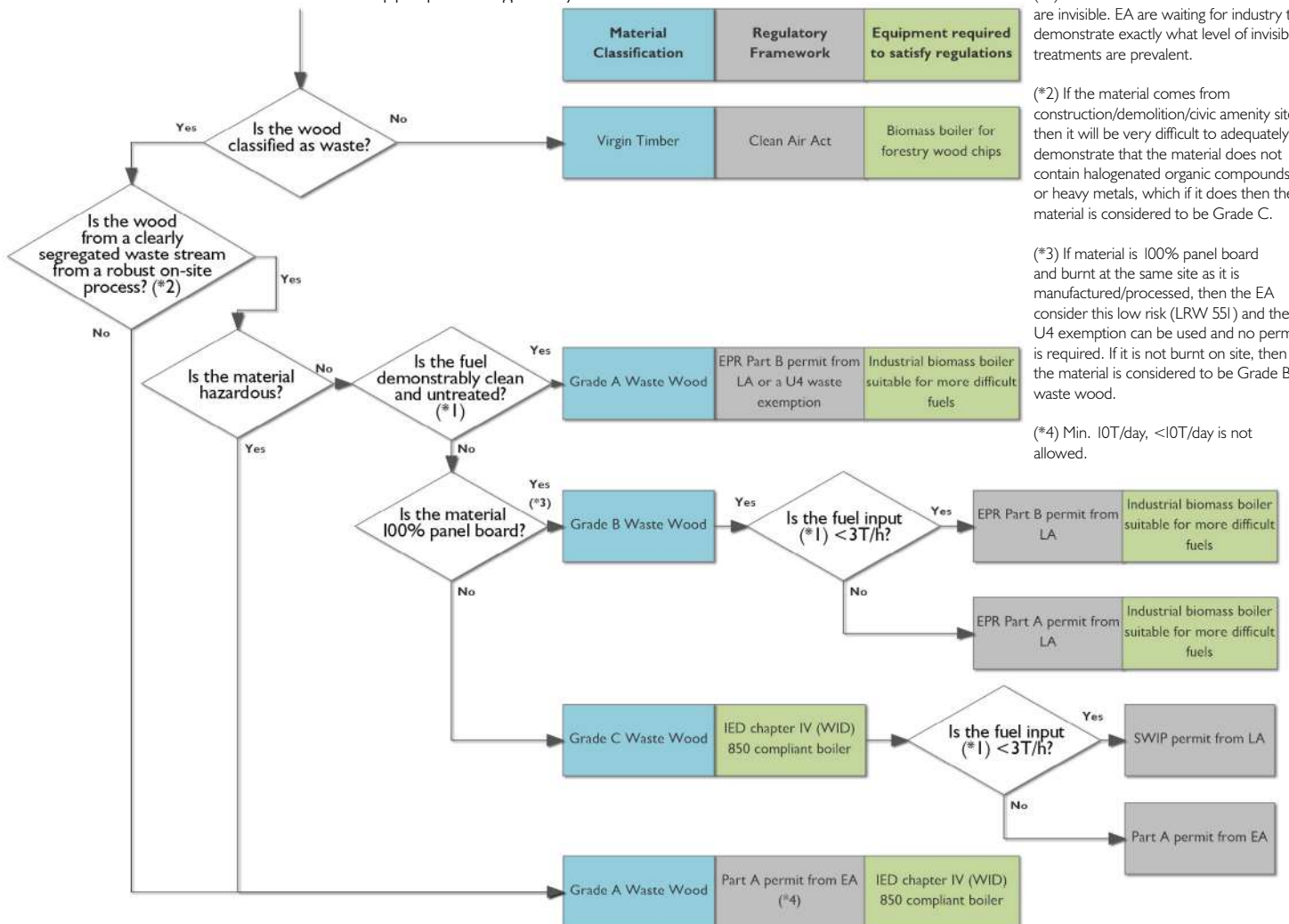
Waste wood grades explained

Grade		Material description	Typical source of material	Typical materials	Typical non-wood content prior to processing
A		Non-treated, Non-virgin	Distribution. Retailing. Packaging. Secondary manufacture, e.g. joinery. Pallet reclamation.	Visibly clean recycled wood waste, mainly from packaging, scrap pallets, offcuts.	Nails and metal fixings. Minor amounts of paint, and surface coatings.
B		Treated, Non-virgin	As Grade A, plus construction and demolition operations transfer stations.	Mainly grade A but with some material from demolition, waste transfer stations, wood manufacture.	Nails and metal fixings. Some paints, plastics, glass, grit, coatings, binders and glues.
C		Treated, Non-virgin	All above, plus municipal collections, recycling centres transfer stations and civic amenity recycling sites.	All of the above plus fencing products, flat pack furniture made from board products and DIY materials. High content of panel products such as chipboard, MDF, plywood, OSB and fibreboard.	Nails and metal fixings. Paints coatings and glues, paper, plastics and rubber, glass, grit. Coated and treated timber (non CCA or creosote).
D		Treated, Non-virgin and hazardous	All of the above plus fencing, track work and transmission pole contractors.	Fencing, transmission poles, railway sleepers, cooling towers.	Copper / chrome / arsenic (CCA) preservation treatments and creosote.

Taken from the following PAS III and EA documents:
<http://www.wrap.org.uk/content/bsi-pas-iii-processing-wood-waste>
http://www.organics-recycling.org.uk/uploads/article2892/Wood%20Briefing_28Aug2014V1%20final.pdf

How do I know what regulations apply to me?

Use this flow chart to select the most appropriate regulatory framework:



(*1) Some treatments are visible and some are invisible. EA are waiting for industry to demonstrate exactly what level of invisible treatments are prevalent.

(*2) If the material comes from construction/demolition/civic amenity sites, then it will be very difficult to adequately demonstrate that the material does not contain halogenated organic compounds or heavy metals, which if it does then the material is considered to be Grade C.

(*3) If material is 100% panel board and burnt at the same site as it is manufactured/processed, then the EA consider this low risk (LRW 55i) and the U4 exemption can be used and no permit is required. If it is not burnt on site, then the material is considered to be Grade B waste wood.

(*4) Min. 10T/day, <10T/day is not allowed.

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Emission regulations

Clean Air Act

- No specific emission limits but the equipment must not produce dark smoke and be registered as an exempt appliance if in a Smoke Control Area. The D1 calculation must be performed to establish the flue height.

Industrial Emissions Directive (IED)

- The IED is likely to be the governing regulation if you are burning non-exempt, treated waste wood, as it is likely to contain halogenated organic compounds or heavy metals. This includes wood wastes from construction and demolition sites and contaminated wood waste recovered from transfer stations.
- With respect to burning wood, the IED covers combustion plant >50MW and incineration of non-exempt waste wood >3T/hr. Both of these configurations will need a Part A permit from the Environment Agency.
- If the plant is burning non-exempt wood waste at <3T/hr then it is a Small Waste Incineration Plant (SWIP), not a Part A process. However, Chapter IV of the IED still applies, i.e. you will need all the same monitoring and controls as a WID installation, but the permit is a Schedule 13A permit from the LA, as opposed to a Part A permit from the EA.

Environmental Permitting Regulations (EPR)

- For burning waste wood that is classified as "biomass" and therefore exempt (defined by the IED, Article 3,3l,b,v) the IED does not apply and instead PG 1/12(13) takes precedence as the guidance. You will still need a Part B permit but the full requirements of IED Chapter IV are not required to be met. If the thermal input of the boiler is >50 MWth, then a Part A permit will be required from the Environment Agency.

What is a Part A permit

- Obtained from the Environment Agency, but only if burning >3tph of non-hazardous wood waste.
- If exempt "biomass" (IED. Article 3(3l)b,v) then emission limit values are defined by PG 1/12(13), unless the thermal rating is 20 to 50 MWth, and the emission standards of PG 1/3 are likely to apply. If the thermal rating is >50 MWth then the emission standards for Large Combustion Plant in Chapter 3 of the IED will apply. If not exempt "Biomass" then the boiler is classified as an incinerator, and Chapter IV of IED applies and emission limit values are defined in IED, Annex VI, Part4, and a complete Continuous Emission Monitoring System (CEMs) package approved by MCERTS is required.
- The CEMs pack has alarms that highlight if the emissions are outside required limits and may automatically shut down the boiler should it fall outside required limits.
- There are specific Emission limit Values (ELV) that need to be met depending on the material being burnt, whether it is a SWIP, a biomass boiler etc.

What is a Part B permit

- Obtained from the Local Authority.
- If exempt "biomass" (IED. Article 3(3l)b,v) then emission limit values are defined by PG 1/12(13), unless the thermal rating is 20 to 50 MWth, and the emission standards of PG 1/3 are likely to apply.
- If not exempt "Biomass" and burning <3 tph, then the boiler is classified as a SWIP, and Chapter IV of IED applies and emission limit values are defined in IED, Annex VI, Part4, and a complete CEMS package approved by MCERTS is required.
- A WID compliant boiler is not required for a Part B process burning exempt "biomass".

Emission limit values are defined by PG1/12(13) and as follows

Element	Emission limit	Monitoring requirement
CO	< 1MW 250 mg/m ³ > 1MW 150 mg/m ³	Continuous with alarm Disregard 30 minutes from cold start
Particulates	60 mg/m ³	Continuous with alarm
NO_x	400 mg/m ³	Witness at commissioning
Organic compounds	20 mg/m ³	Manual annual test
Chlorine (Hydrogen Chloride) If burning painted or coated wood where WID does not apply.	100 mg/m ³	Manual annual test
Hydrogen Cyanide If burning melamine faced wood	5 mg/m ³	Manual annual test
Formaldehyde If burning plywood, chipboard, fibreboard	5 mg/m ³	Manual annual test



FAQs

What type of boiler system do I need?

When you know what type of material you have access to and wish to use as a fuel you will need to select a boiler.

Grade	For a process where a Part B permit is required	For a process where a Part A permit is required
A	Industrial, heavyweight WID version will not be required	Industrial, heavyweight, WID version will not be required
B	Industrial, heavyweight WID version may be required	Industrial, heavyweight, (WID version will probably be required)
C	Industrial, heavyweight WID version will be required	Industrial, heavyweight, (WID version will be required)
D	-	Industrial, heavyweight, (WID version will be required)

Does burning waste wood affect my RHI payments?

- If your RHI application is based on an RHI emission certificate then you need to ensure this certificate specifically lists the material you are using in your boiler. If you do not you will be breaching the RHI terms and you may be fined and even asked to repay your RHI payments.
- Your annual RHI declaration asks whether you have made any changes to fuel or your system. You must be open about any changes you make to your fuel. Again, not doing so could be regarded as a breach.

Are there situations where I would be exempt from needing a permit?

Yes, there are exemptions granted in the EPR.

A U4 exemption (Ch2.Section2.4) is where you are burning the waste wood (grade A only) as a fuel, applicable if:

- Material input <50Kg/hr and <400kW
- <10T stored on site

A D6 exemption (Ch3.Section2.4) is where you are disposing of the waste wood (grades A, B & C only) by incineration, applicable if:

- Material input <50Kg/hr and <400kW
- <5T stored on site
- You are only burning your own waste

If I buy waste wood from a BSL registered fuel supplier, do I still need a permit?

- Yes, EPR permitting requirements still apply, unless you have an exemption. Burning any kind of waste wood as a fuel (including clean grade A recycled, even if its mixed in with) means you must have an Environmental Permit to do so, either from the local authority or from the Environment Agency.

What sort of records do I need to keep?

- If you are audited by OFGEM you will need to have evidence of wood fuel purchases (from BSL suppliers or you can also self supply) that corresponds with the kWh generated on your meter, irrespective of whether you have been burning virgin or waste wood.
- You will need to find a way to measure and record the volume of fuel that you are using, which may require some thought for users of waste wood.

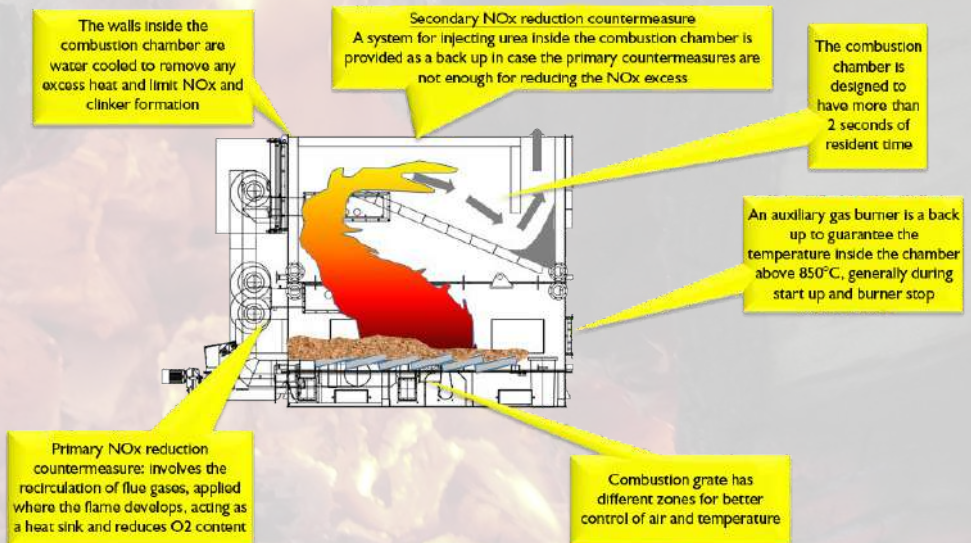
Can I burn waste wood in my biomass boiler?

- Possibly. There are operational and technical challenges, both to ensure good combustion but also to ensure the emissions are at the levels allowed for the type of fuel, the site location and the plant size.
- You need to ensure the boiler manufacturer can guarantee the equipment will burn the material effectively (good emissions), efficiently, safely and will still maintain the boiler warranty and give the equipment a long life (burning some materials can significantly reduce the lifetime of the boiler).

What is the difference between the Industrial Emissions Directive and the Waste Incineration Directive?

- The Waste Incineration Directive (WID) has now been amalgamated into the Industrial Emissions Directive (IED), but the operational requirements are unchanged. The IED states that a waste incineration plant must hold the gases generated by the incineration process at a temperature of at least 850°C for a minimum of 2 seconds. Typical industrial biomass combustion chambers hold the gases for only approx. 1.4sec so a WID compliant combustion chamber should be specifically requested if this is what you need as a WID compliant boiler is both larger and more expensive.
- It is important to enter discussion as early as possible with the EA or the local authority about the most appropriate equipment for the specific material at the site, or ask your Main Contractor to do this on your behalf.

Typical Chapter IV (WID) Compliant Combustion Chamber Design



What kind of technology should I be looking for from a boiler supplier?

- The diagram below shows some of the standard technology on a typical IED Chapter IV (WID) compliant combustion chamber. In addition to this the dust content in the flue gasses will need to be filtered out, typically by a cyclone and a bag/mesh filter or by an electrostatic precipitator.