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1. Introduction

This Briefing Note relates to the use of incinerator bottom ash aggregate (IBAA) in some products produced by Sheerness Recycling Limited (SRL). This Note should be read in conjunction with Regulatory Position Statement (RPS) 247 which summarises the Environment Agency's position on the use of IBAA in construction activities.

2. What is IBAA?

IBAA is a recycled aggregate manufactured from IBA (untreated incinerator bottom ash). The raw IBA is a by-product of the incineration of waste materials at Energy from Waste Plants. This material is subjected to a treatment process which removes ferrous and non-ferrous metals and involves screening and sizing of the materials. The treated material (IBAA) can then be used as a secondary aggregate in its own right or, more commonly, is blended with other materials (crushed construction and demolition waste, limestone etc) to provide further options for supply to the construction industry.

IBAA has been widely used in the construction industry for over 20 years. Its use is supported by the Environment Agency (subject to certain controls) and a number of local authorities.

IBAA typically contains materials such as concrete, ceramics, glass, brick, clinker metals and fused material.

Some of the benefits of the use of IBAA (and other products that contain IBAA) include:

1. It is a treated by-product of the incineration of waste that generates electricity and is therefore readily available;
2. A requirement for less material on a given project due to the typical compacted bulk density of IBAA;
3. Diversion of a useful, sustainable material from landfill disposal;
4. Reduction of the use of raw resources (use of IBAA instead of virgin aggregates means less mineral is removed from the ground); and
5. Use of IBAA with other materials improves overall strength due to its cementitious properties.

3. Is IBAA Waste?

Yes. Currently there is no agreed end of waste position for the use of IBAA in construction. This means that IBAA is transported to our recycling facilities under waste transfer notes (WTN). It also means that any of our products to which we add IBAA are also waste and are required to be:

1. Transported to construction sites under WTN; and
2. Used in construction under RPS 247 or a suitable Environmental Permit.

Compliance with RPS 247 is discussed in the sections below.

4. Is IBAA Hazardous Waste?

No. When the IBA is processed the majority of the heavy metals present are removed and the material is resized. Both IBA and IBAA will continue to indicate the presence of certain metals when tested, even after treatment. In particular the levels of zinc and copper could be present at levels which, technically, exceed non-hazardous waste thresholds.

SRL's supplier of IBAA undertake regular testing in accordance with WM3[1]. Although the levels of zinc and copper present are often above non-hazardous thresholds there is an accepted methodology that allows the producers of IBAA to discount the percentage copper and zinc present by up to 70% on the basis that these metals are not bioavailable. It is usually the ecotoxic (HP14) properties that render the material as Hazardous, and through specialist analysis it can be demonstrated that the metals are not present in forms that exhibits ecotoxic properties. This in turn means that the material is not considered to be hazardous waste.

5. Which of our products contain IBAA?

Currently the only material produced by SRL that contains IBAA is our Type 1/IBAA Eco Blend. This material is typically used for the formation of a firm sub-base and is typically used in the construction of roads and pathways.

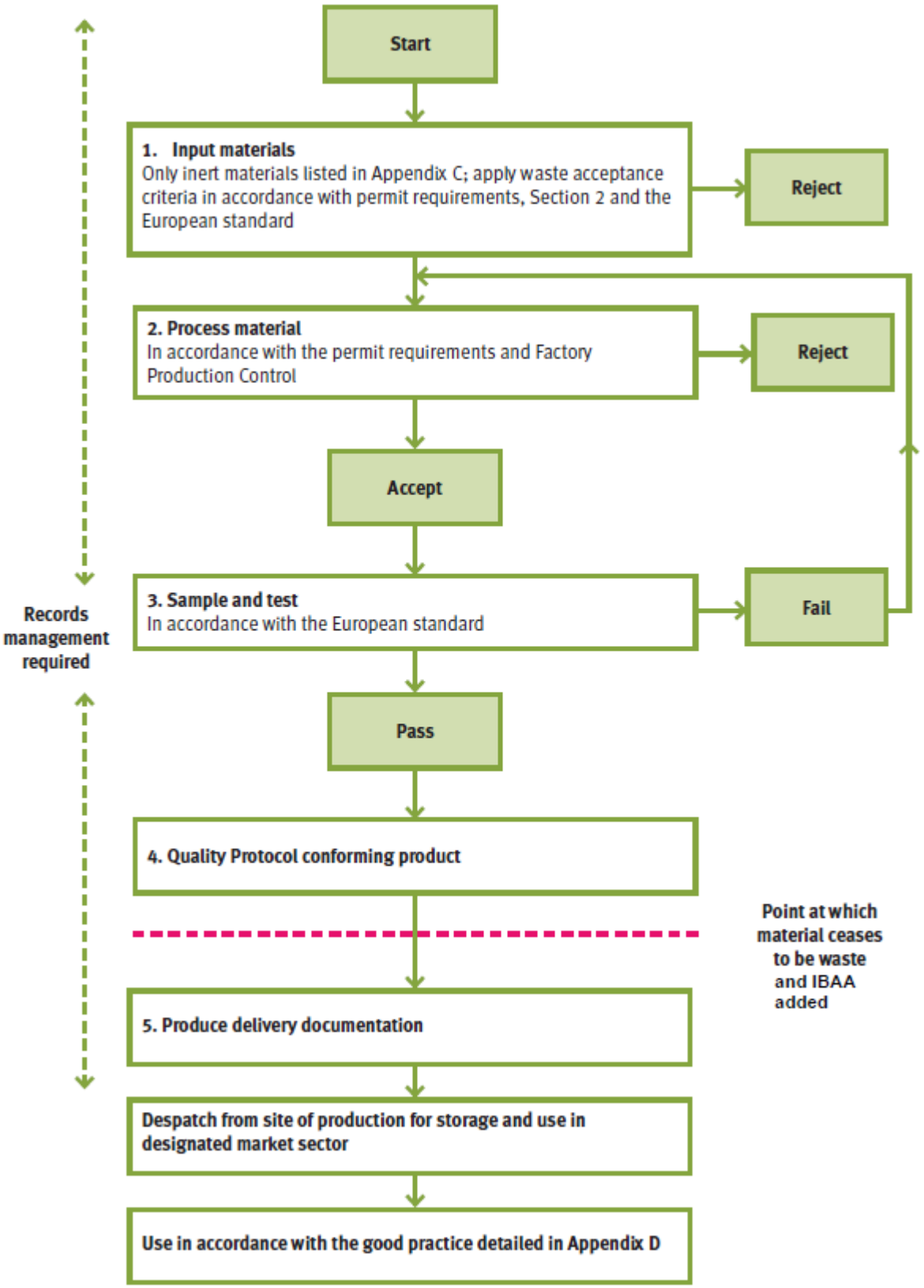
Our Type 1/IBAA Eco Blend. aggregate currently comprises approximately 80% quarried granite. This means that the granite element of the material is not waste and is not required to achieve end of waste via compliance with a factory Production Control process and a Quality Protocol (i.e. "WRAP compliance").

In the future it is possible that SRL will add IBAA to other materials such as crushed demolition waste (concrete, brick etc). If and when our Recycled Type 1 is produced using this type of waste material, there will be a requirement for the crushed demolition waste to achieve end of waste before IBAA is added. To achieve this SRL operates in accordance with a Factory Production Control process and our recycled materials achieve end of waste via compliance with the WRAP protocol[2]. The complete process, and the point where IBAA would be added to our other recycled materials, is summarised below as an extract from the relevant guidance.

[1] Technical Guidance WM3 (v1.2BG): Waste Classification – Guidance on the classification and assessment of waste.

[2] WRAP Quality Protocol: Aggregates from inert waste.

SHEERNESS RECYCLING LTD



6. How to use aggregates that contains IBAA

Our Type 1/IBAA Eco Blend material containing IBAA is supplied to customers who intend to use it in accordance with RPS 247. It is the customer's duty to ensure it is familiar with the content of RPS 247 and a summary only is provided below.

RPS 247 can be used if unbound municipal IBAA is used in construction activities under the terms of the RPS.

The following conditions apply to the use of any product supplied by SRL under RPS 247 and that contains IBAA. You must:

- follow the hydrogen safeguarding guidance in the material safety data sheets;
- comply with the guidance dispose of business or commercial waste;
- comply with hazardous waste controls if you identify these wastes;
- store unbound IBAA safely and securely;
- follow the Health and Safety Executive precautions on the use of IBAA or other equivalent measures; and
- keep records for 2 years to show that you have complied with this RPS and make these records available to the Environment Agency on request.

RPS 247 states that for each delivery it must be confirmed (by doing risk assessments) that the supply meets all the conditions in RPS 247. It is the customer's duty to confirm that use of IBAA on its site meets the conditions set out in RPS 247. If use of the material complies with RPS 247 (particularly in relation to distance to surface waters and location outside source protection zones) SRL will consider that the following risk assessment applies.

Table 1 – Qualitative Risk Assessment for the Use of IBAA Products

Possible Source of Contamination	Possible Pollution Pathway	Plausible Receptors	Assumptions and Conditions	Significant?
Use of IBAA in construction activities.	Vertical migration of contaminants.	Controlled waters (groundwater).	Material will not be used for construction within a groundwater source protection zone 1 or 2 or within 50m of any spring or well, or any borehole used to supply water, including private water supplies. All other conditions of RPS 247 are satisfied.	No
	Lateral migration of contaminants in groundwater.	Controlled waters (surface waters).		No
	Direct contact, ingestion, inhalation.	Human receptors.	Material will not be used, or suppled for use, underneath any	No

Possible Source of Contamination	Possible Pollution Pathway	Plausible Receptors	Assumptions and Conditions	Significant?
			residential building or garden.	

If the conditions of the RPS cannot be met SRL will be unable to supply the material unless the following can be provided:

1. A site specific risk assessment demonstrating that the material can be safely used on a given site; and
2. A suitable Environmental Permit.

SRL will record in writing, and supply to the customer, the following details:

- date of supply;
- name and contact details of the producer and distributors, including the site of production's address; and
- quantity supplied (by weight or volume).

SRL can confirm that, as supplied to the customer, the material meets the appropriate standard for an end use specified in RPS 247 and it has been supplied for that use only. It is the customer's duty to ensure compliance with RPS 247 once the material has been supplied.

You must give a copy of this record to the end user of the unbound IBAA. Both parties must:

- keep the record for a minimum of 2 years;
- make each record available to the Environment Agency on request.

Once supplied to a customer material containing IBAA must not be stored or used within:

- a groundwater source protection zone 1 or 2;
- 50 metres of any spring or well, or any borehole used to supply water, including private water supplies;

It is the customer's duty to ensure its activity does not endanger human health or the environment. The customer must not:

- use, or supply for use, IBAA underneath any residential building or garden;
- store IBAA for more than 6 months before use;
- cause a risk to water, air, soil, plants or animals;
- cause a nuisance through noise or odour;
- adversely affect the countryside or places of special interest.

All aggregate products must comply with BS EN 13242 or any revision of that standard. You need to pay for this standard.

6.1 Use of IBAA in a road base

RPS 247 states that you can use an unlimited quantity of unbound IBAA to build a road sub-base providing:

1. the width of the IBAA emplacement is not more than 40 metres;
2. the road, cycleway or footpath is asphalt, concrete or other low permeable material.

The sub-base (or sub-base with capping layer) is the layer placed over the subgrade that acts as a foundation layer for the base and surface course. It must have a thickness of less than 0.7m.

The surface course must be of low permeability and durable so that it remains intact and of low permeability over the lifetime of the structure. You must build this with adequate falls to prevent standing water.

6.2 Use of IBAA in a construction or structural platform

RPS 247 states that you can use IBAA to build a construction or structural platform that is on average one metre thick. It must be at least 25 metres from a surface water body. At least 95% of it must be entirely covered by a low permeability surface or building.

The base must be less than 1 metre (m) thick on average.

The platform must be covered by a building or low permeability surface. This surface must remain intact and have low permeability over the lifetime of the structure.

Building a construction platform may include compacting IBAA in a trench or other void, providing the total average depth of IBAA does not exceed 1m.

The amount of IBAA you can use depends on the distance to a surface water body as shown in the following table.

Table 2 – Permissible Volumes of IBAA Use

Distance to water body (metres)	Maximum tonnage (tonnes) (Dry)	Volume after compaction assuming 1.7T/m³ (m³)	Maximum surface area of a structural platform (m²)
-49	4,420	2,600	2,600
50-99	6,800	4,000	4,000
100-149	13,600	8,000	8,000
150-199	20,400	12,000	12,000
200-249	27,200	16,000	16,000
250-299	34,000	20,000	20,000
300-349	40,800	24,000	24,000
350-399	47,600	28,000	28,000
400-449	54,400	32,000	32,000
450-499	61,200	36,000	36,000
More than 500	68,000	40,000	40,000

6.3 Use of IBAA as pipe bedding

You can use up to 510 tonnes of unbound IBAA as pipe bedding in any single construction project. This does not apply if projects are artificially divided to allow multiple applications.

The pipe sits on and is surrounded with the pipe bedding and is not a drainage medium. Pipe bedding must be less than 0.3m thick in a trench less than 2m wide.