Material Specification for formed concrete Projects

Johnsons Aggregates & Recycling Ltd work in partnership with a number of high-profile household name clients. The projects undertaken include construction applications such as blocks, cement bound material and foamed concrete. The projects are also involved with attaining End-of-Waste. To attain End-of-Waste the following criteria need to be met;

a) The substance or object is commonly used for specific purposes;

b) A market or demand exists for such a substance or object;

c) The substance or object fulfils the technical requirements for specific purposes and meets the existing legislation and standards applicable to products; and

d) The use of the substance or object will not lead to overall adverse environmental or human health impacts

Material: 0/4mm & 0/10mm IBAA (Typical customer specification <2.5mm)

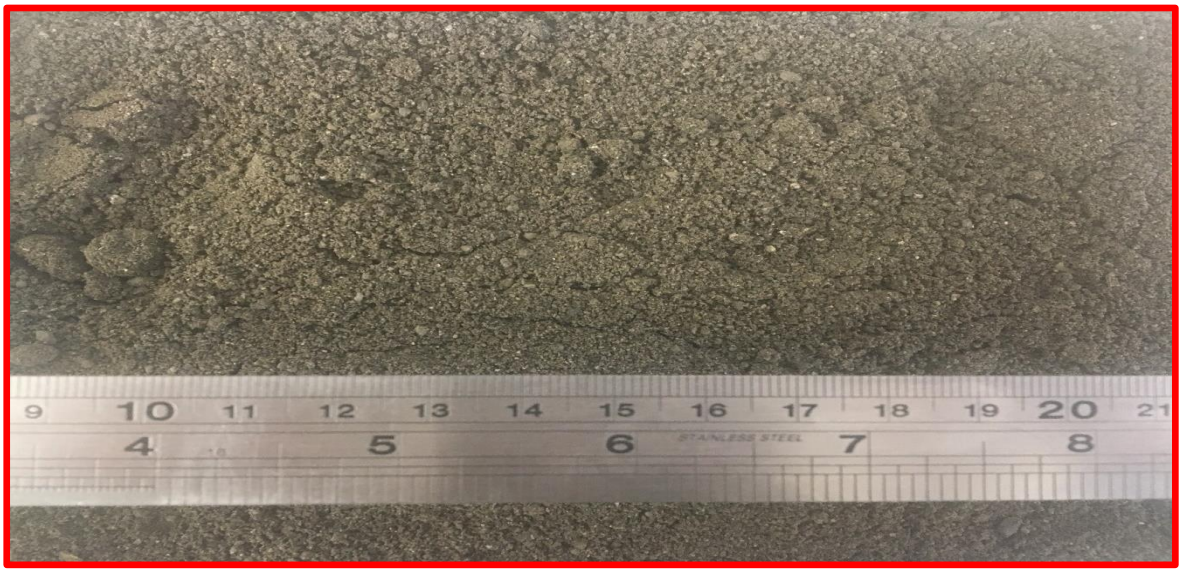
Size Fraction: 0/4mm, 0/10mm & 0/2.5mm as per customer specification

Constituents: IBA Ash, Brick, Concrete, Rock, Stone, glass, sand etc, may contain trace metals including Al, Cu, Zn (typically <1-2%).

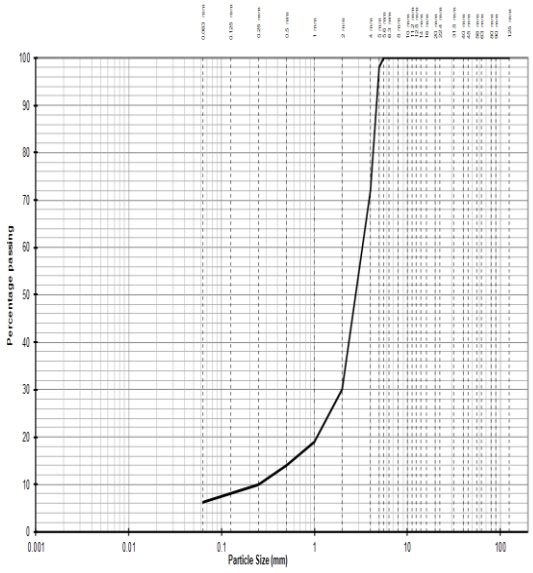
Gradings/specifications available for 0/10mm, 0/4mm & 0/2.5mm IBAA Material:

- Grading
- Asbestos Screening
- Chemical analysis

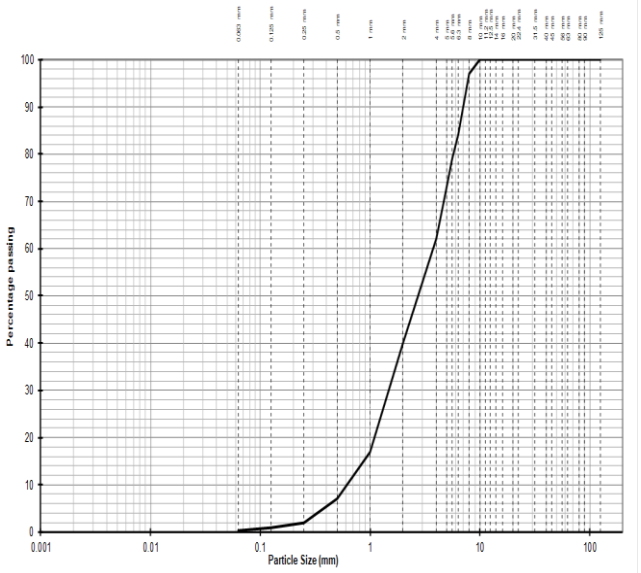
If you have any questions or require any other information, please do not hesitate to the sales office on 01159 213454 or email: sales@johnsonsaggregates.com



Typical Grading Graph - 0/4 mm



Typical Grading Graph - 0/10mm



Typical 0 - 4 mm IBAA Grading chart

Sieve size mm	% Passing
125	100
90	100
80	100
63	100
56	100
45	100
40	100
31.5	100
22.4	100
20	100
16	100
14	100
12.5	100
11.2	100
10	100
8	100
6.3	100
5.6	100
5	100
4	96
2	84
1	74
0.5	56
0.25	35
0.125	21
0.063	12.1

Typical 0 - 10 mm IBAA Grading chart

Sieve size mm	% Passing
125	100
90	100
80	100
63	100
56	100
45	100
40	100
31.5	100
22.4	100
20	100
16	100
14	100
12.5	100
11.2	100
10	99
8	93
6.3	80
5.6	71
5	59
4	38
2	19
1	10
0.5	6
0.25	4
0.125	3
0.063	1.7

Regulatory standards for IBAA Material

IBAA material fully conforms with the applicable SHW requirements for a Manufactured Aggregate

RPS 206: Using unbound municipal IBAA in construction activities (Updated 22 January 2019)

This regulatory position statement (RPS) applies if you use unbound municipal incinerator bottom ash aggregate (IBAA) in certain construction activities. It also covers the storage of the IBAA that relates to its use.

Unbound IBAA includes IBAA in hydraulically bound mixtures (HBMs). A HBM is where the IBAA is mixed with water and a binder such as cement to form a mixture which then sets.

Processed for use in:

- Building a road sub-base
- Building a construction or structural platform
- Pipe bedding

Restrictions on amounts apply see RPS 206 for details

RPS 017 The Regulation of Materials under Consideration for an End-of-Waste Quality Protocol

Annex 2 - Waste streams to which this position applies

Annex 2 sets out the requirements for each of the waste streams to which this position applies:

- incinerator bottom ash aggregate (IBAA).

Final use - Incinerator bottom ash aggregate (IBAA)

Processed for use in:

- unbound applications e.g. replacement aggregates in culverts, bridge abutments and as fill beneath ground-bearing slabs, sub-base and capping layers
- bound highway applications, e.g. construction and maintenance of roads/ public rights of way/ bituminous bound material and sub-base or capping layer
- construction applications such as blocks or cement bound material or foamed asphalt/ concrete.

Relevant standards

Processed material must conform to relevant publicly available civil engineering standards. For the above uses, these include:

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

BS EN 13285: 2010 Unbound Mixture -specification

BS EN 13043:2013 Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas

BS EN 12620:2013 Aggregates for concrete

BS EN 13055-1:2002 Lightweight aggregates. Lightweight aggregates for concrete, mortar and grout.

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

Distance to water body (metres)	Maximum tonnage (tonnes)	Volume after compaction assuming 1.7T/m3 (m3)	Maximum surface area of a structural platform (m2)
25-50	4,420	2,600	2,600
50-100	6,800	4,000	4,000
100-150	13,600	8,000	8,000
150-200	20,400	12,000	12,000
200-250	27,200	16,000	16,000
250-300	34,000	20,000	20,000
300-350	40,800	24,000	24,000
350-400	47,600	28,000	28,000
400-450	54,400	32,000	32,000
450-500	61,200	36,000	36,000
More than 500	68,000	40,000	40,000

Material characterisation

All JAR Material fully complies with BS EN 12457:2002 Leachate limits for waste materials.

BS EN 12457-2:2002
Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction)
BS EN 12457-4:2002
Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction)

Determinand		BS EN 12457 mg/Kg
Arsenic	As	2
Barium	Ba	100
Cadmium	Cd	1
Chromium	Cr	10
Copper	Cu	50
Mercury	Hg	0.2
Nickel	Ni	10
Lead	Pb	10
Selenium	Se	0.5
Molybdenum	Mo	10
Antimony	Sb	0.7
Zinc	Zn	50
Fluoride	F-	150
Chloride	Cl-	15000
Sulphates	SO4	20000
Total Dissolved Solids	TDS	60000