

This Method Statement should be read in conjunction with the IBA processing flow diagram.

1. Incinerator Bottom Ash (IBA) with a nominal 0/100mm size designation is loaded by wheeled loading shovel into a variable speed vibrating tray feeder. The feeder is equipped with an adjustable aperture achieved by use of a hydraulically controlled sliding gate. The adjustable aperture enables fine control of the discharged material rate and enables potential blockages to be purged from the system. The feeder is also equipped with 'Grizzly Fingers' which means material greater than 150mm in size is presented to the receiving conveyor onto a layer of fines.
2. The IBA passes under an electro-overband magnet which removes a proportion of the ferrous material, the remaining IBA being fed over a screen to remove material greater than 150mm. The ferrous and oversize fractions are discharged into designated bays.
3. Following initial ferrous and oversized material removal the IBA passes under a second electro-overband magnet which removes a further proportion of the ferrous materials, this fraction is chuted into a designated bay. The remaining IBA then feeds into a rotating Trommel screen providing a 2-way split of 0/32mm and +32mm.
4. +32mm is discharged from the Trommel screen onto a belt and then passes under a third electro-overband magnet for further ferrous removal.
5. The remaining +32mm IBA is transferred by a conveyor equipped with a magnetic pulley which removes residual ferrous materials before being tray-fed onto an Eddy Current Separator (ECS) to remove the +32mm non-ferrous fraction which is stockpiled in a designated bay. The remaining IBA is presented to a picking belt where stainless steel or unburnt material is handpicked into bays with residual +32mm Incinerator Bottom Ash Aggregate (IBAA) being conveyed to stock.
6. 0/32mm IBA screened off by the Trommel screen passes under another electro-overband magnet, the ferrous fraction removed joins the ferrous removed from the at step 3 above. The 0/32mm IBA is fed onto a flip flow screen deck.
7. The flip flow screen deck provides a 3-way split of the material:
 - 0/4mm passes through the screen, see step 8 below.
 - 4/12mm passes through the screen top deck, see 9 below.
 - 12/32mm goes over the screen, see 10 below.
8. The 0/4mm IBA fraction is conveyed onto a flip flow screen which aerates and spreads the IBA onto a transfer conveyor equipped with a magnetic pulley which removes residual ferrous materials. The remaining IBA is fed over two cascading ECS machines. The ECS machines remove 0/4mm non-ferrous materials, these non-ferrous materials being discharged into bags, the bag fill being monitored by an automated weighing system. The residual 0/4mm IBAA from the cascading ECS machines and the magnetic pulley is recombined in a common chute before being stockpiled into a designated bay.
9. The 4/12mm IBA fraction is conveyed onto a transfer conveyor equipped with a magnetic pulley which removes residual ferrous materials (pellet) for further processing, see step 11 below. The remaining IBA feeds onto a vibrating tray feeder which spreads it for an efficient flow over two cascading ECS machines. The ECS machines remove 4/12mm non-ferrous materials, these non-ferrous materials being discharged into bags, the bag fill being monitored by an automated weighing system. The residual 4/12mm IBAA is then stockpiled into a designated bay.

10. The 12/32mm IBA fraction is conveyed onto a transfer conveyor equipped with a magnetic pulley which removes residual ferrous materials (pellet) for further processing, see step 11 below. The remaining IBA feeds onto a vibrating tray feeder which spreads it for an efficient flow over two cascading ECS machines. The ECS machines remove 12/32mm non-ferrous materials, these non-ferrous materials being discharged into bags, the bag fill being monitored by an automated weighing system. The residual 12/32mm IBAA is then stockpiled into a designated bay.
11. Material referred to as ferrous pellet, extracted from the ash by magnetic pulleys referenced in steps 9 and 10, is transferred via chutes to a common conveyor that feeds a surge bin above a vertical shaft impact crusher (VSI). The ferrous pellet is crushed to release combined ash and metal fractions, the crushed ferrous pellet is fed by conveyor back into the system for processing at step 3 above. The surge bin is equipped with a VSI bypass chute so that IBA processing can continue during VSI maintenance.

Process Flow Diagram

