

Get more metals out of your incinerator bottom ash

Classification of fine and moist IBA



Your challenge with fine bottom ash

- Fine incinerator bottom ash (IBA) has a high content of non-ferrous metals and thus offers a great potential to increase the metal recovery.
- The metals in the fine bottom ash are particularly valuable due to of the generally high amount of copper and precious metals.
- However, the classification of fine bottom ash often fails because of the moisture which makes it impossible to exploit the great recovery potential.

Does this problem sound familiar to you?

Success

You can reliably recover non-ferrous metals from your fine bottom ash with the patented ballistic separation.

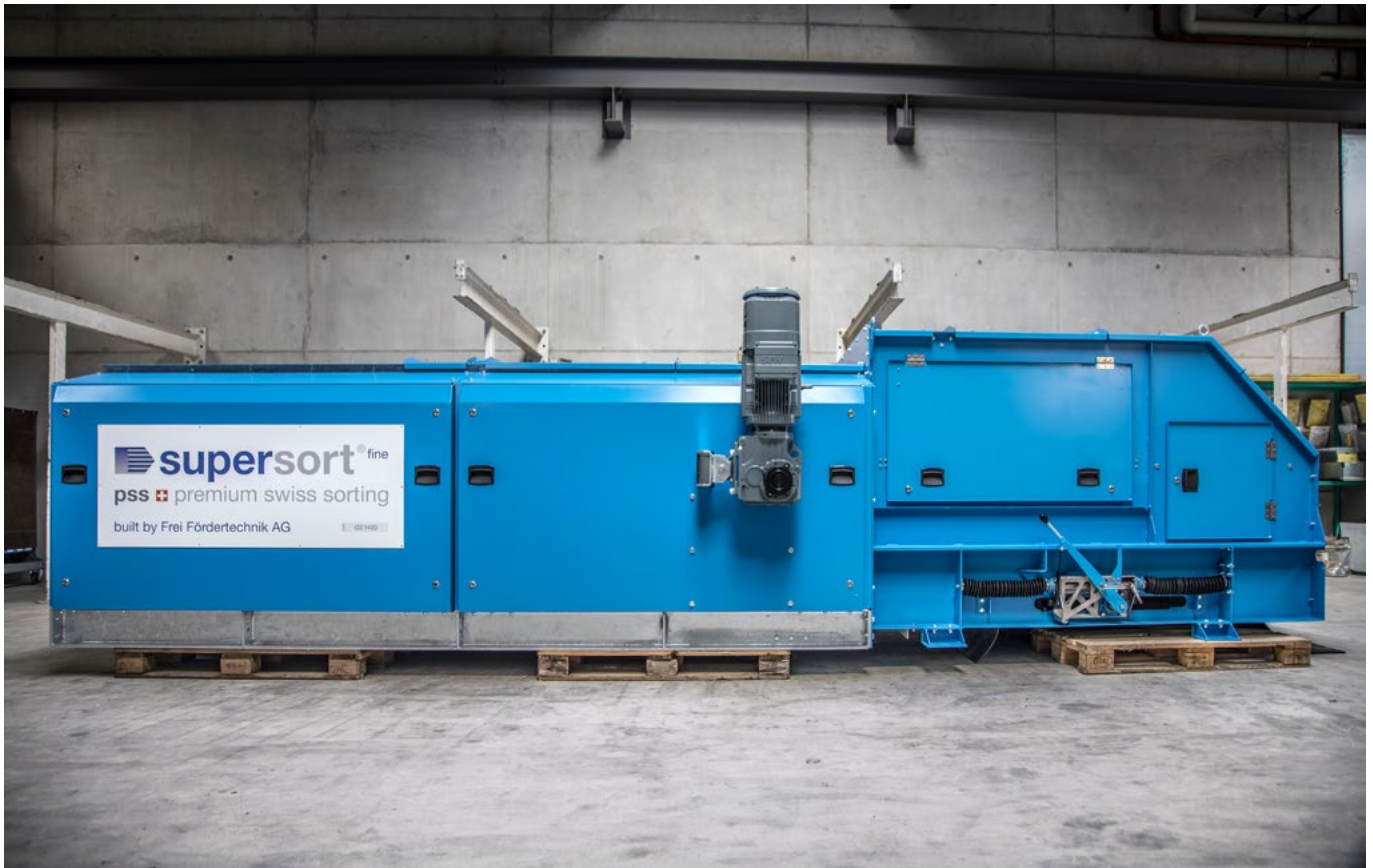
supersort^{®fine} pss gets you ahead

Using supersort^{®fine} pss can reliably and efficiently recover non-ferrous metals from the fine IBA. The dry mechanical method allows the profitable recovery of metals from the fine fraction of bottom ash with a grain size of 1 mm and more. Thanks to this ballistic method, the troublesome fraction < 1 mm is separated and thus efficient metal recycling is also achieved in the smallest grain sizes.

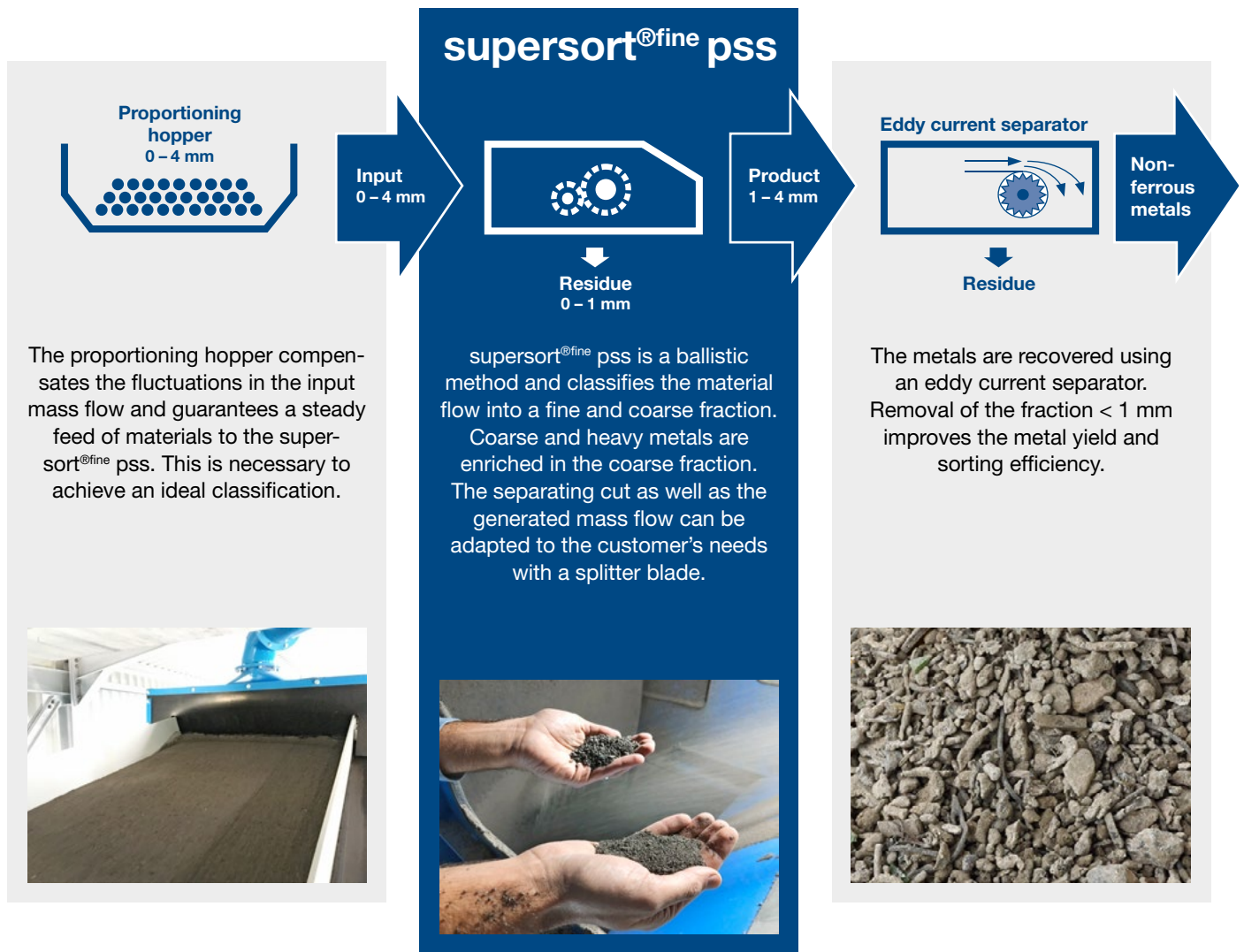
The compact design and various model sizes enable an easy integration in existing processing plants.

Your benefits from using supersort^{®fine} pss

- Reliable classification of moist materials starting at a separating cut of 1 mm
- Higher metal recovery by means of classification
- Additional revenue thanks to metal recovery from fine bottom ash
- High value of the metals as a result of the high content of copper and precious metals in the fine bottom ash



Exemplary layout of an overall system



Machine models and space requirements¹

Model	Throughput	Plant dimension (l × w × h)
G2 1000	20 t/h	6,4 × 2,2 × 2,3 m
G2 1400	28 t/h	6,4 × 2,6 × 2,3 m
G2 1800	36 t/h	7,4 × 3,0 × 2,3 m



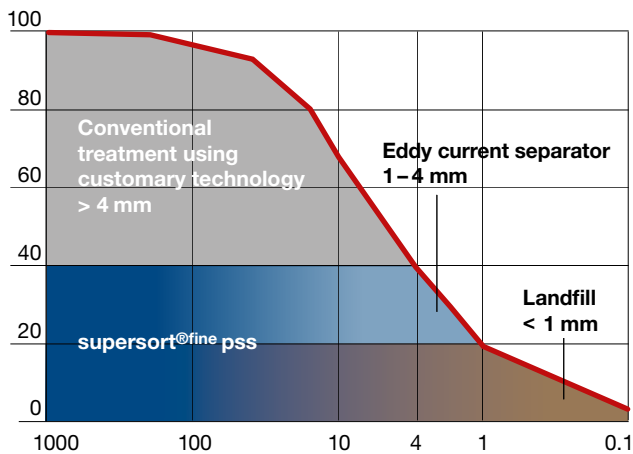
1) All models are available with an electrical splitter adjustment and integrated magnetic separator.

Application: bottom ash treatment

supersort^{®fine} pss has been specifically developed for the classification of IBA which is difficult to sieve. Classic screening technology achieves a minimum screen cut of 3 to 4 mm. Particularly with moist bottom ash and small perforations the screen mats tend to clog which makes any further classification impossible. supersort^{®fine} pss has also proven itself at a higher humidity and guarantees an uninterrupted classification down to a grain size of 0,5 mm.

Grain size distribution of raw bottom ash

Total mass distribution [%] versus grain size [mm]

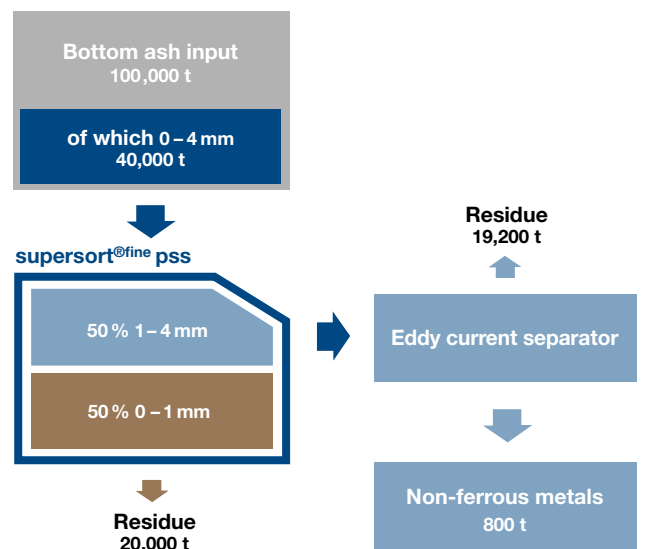


One possibility for an effective fine treatment of the bottom ash is as follows: The 0–4 mm fraction is classified with supersort^{®fine} pss at 1 mm. The mass flow is halved by the classification and only the 1–4 mm fraction is passed on to the eddy current separator. Removal of the < 1 mm fraction leads to a higher metal recovery rate and a higher product quality. The 0–1 mm fraction contains negligible non-ferrous metals and is dumped directly.

Exemplary calculation

The following investment calculation should illustrate the fine treatment of IBA with an annual production of 100,000 tons of bottom ash. The < 4 mm fraction accounts for approx. 40 % of the crude bottom ash and contains approx. 2 % of valuable non-ferrous metals that would be lost without any treatment.

Key data for the plant layout¹



Key data	Throughput
Total throughput	100,000 t/a
Bottom ash fraction < 4 mm	40,000 t/a
Bottom ash fraction 1–4 mm	20,000 t/a
Non-ferrous metals 1–4 mm	800 t/a

Investment overall system²: 600,000 €
Revenue: 400,000 €/a
Operating costs: 30,000 €/a
Gross profit: 370,000 €/a

This example shows that valuable metals can be found in the fine bottom ash and that their recovery is profitable. The investment in supersort^{®fine} pss has paid off in less than 2 years according to this calculation.

1) The calculations are based on our experience and empirical values. The values can vary according to the composition of the bottom ash, metal prices, etc.
 2) Contains proportioning hopper, supersort^{®fine} pss and eddy current separator.

We buy your mixed non-ferrous metals!



Refinement of non-ferrous metals

The non-ferrous metal mix from fine treatment is refined by the supersort[®]metall plant in Oberglatt to obtain pure aluminium and non-ferrous heavy metals fractions. The plant is designed in particular for the treatment of fine, non-ferrous metals > 0,3 mm. The mineral fraction is crushed and removed. In a further process aluminium and the non-ferrous heavy metals are separated using a density process. These products can be fed directly to the smelters. We would be pleased to make you an offer for your non-ferrous metal mix.

non-ferrous metals from the fine fraction, «refined»

- 1 Aluminium
- 2 Non-ferrous heavy metals
- 3 supersort[®]metall plant in Oberglatt

Benefits of a collaboration with DHZ AG thanks to supersort[®]metall



The finest metals are refined and separated reliably into a light and a heavy fraction



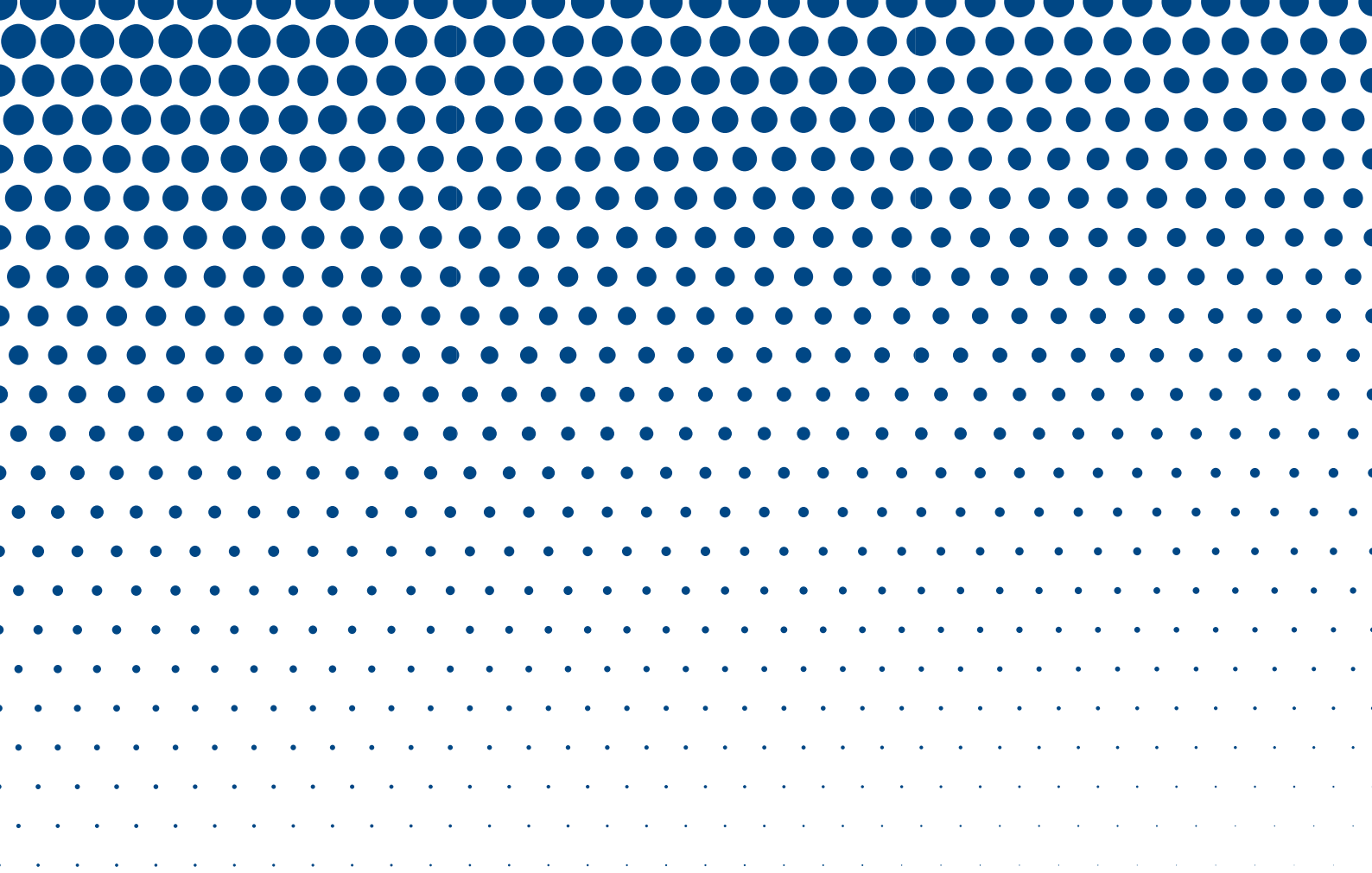
Fair payment for the metals, even in the smallest grain grain fractions



Cross-border business thanks to international experience



Cooperative partnership and long-term business relations



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