First fully automatic waste-glass processing plant for Greater Beijing

Year of construction:	2013
Country:	People's Republic of China
Material:	Pre-sorted bottle glass collection
Plant capacity:	36 t/h
Commission No.:	29490

Initial Situation

In China, waste glass is mostly sorted by hand before being melted as a secondary raw material in glassworks. Manual sorting is mainly supported by simple, technical equipment.

Waste glass melts at lower temperatures than its primary raw materials (silica sand, limestone, soda etc.). This saves expensive thermal energy for the furnace and thus contributes to the reduction of CO2 emission. The higher the share of cullet in the batch, the higher the energy savings. Raising the ratios of waste glass by increasing the sorting quality, however, cannot be achieved by human manual sorting. To justify these high demands – also with respect to rising labour costs in China – increasing the degree of automation is unavoidable.

Solution by Binder+Co

The input material consists of coarsely pre-sorted bottle glass collections in the colours flint, green or amber which, on the one hand, have to be separated from metals and organic and CSP (ceramic, stone and porcelain), and on the other hand, separated by colour.

The special challenge was to implement an efficient plant design and to remain as economical as possible. To optimally precondition the cullet, a double-roll glass crusher, the special screening machine BIVITEC and a Binder+Co label remover are installed. The valuable metal fraction is extracted from the material flow using an eddy-current separator, and the organic material removed using the ORKA wind-sifting system. Four units of the sensor-based CLARITY sorting machine – here as a three-way system – provide for highly precise separation of the pre-processed material on the basis of colours and impurities. Simultaneous separation of colours and impurities allows for an efficient and lean process.

Economy of plant construction was taken into account using local, bought-in components, such as steel structures, belt conveyors and a dust extraction system, whereas the core components and the process know-how were supplied by Binder+Co, Austria.

Benefits for the Customer

- Reduction of labour costs by increasing the degree of automation
- Constantly high product amount through automatic plant design without external influences
- Simultaneous production of several products
- Fully automatic colour and CSP sorting by CLARITY
- Up to 16 various sorting recipes for the most diverse task situations
- Remote maintenance for monitoring and adjusting the sensor based sorter

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