



Separation of grinding balls and fine calcite

Product group: Linear vibrating screen

Industrial process: screening, classifying, dewatering

Industry: Chemicals, Plastics, Pharmaceuticals

Type of drive: Unbalance motor



capacity (t/h): 110 | **bulk:** Bulk No. 1: alumina balls No. 2: Calcite | **density (t/m³):** 2,2 | **grain size (mm):** 3,5-4,5

function:

Within a production process for Calcite, the coarse-grained bulk material is crushed by a mill with grinding balls. The grinding balls crush the calcite into a very fine proportion (95% <30 μ) and in a fraction with broken pieces. The friction of the grinding balls in the mill results in a temperature of 110 ° C in the product mixture. The combination of a high fine content and temperature leads to the fine content adhering to the grinding balls. The customer is now looking for a solution for the following problem. On the one hand, he wants to free the grinding balls from the fine portion and return them back to the mill, since manual cleaning is time-consuming and cost-intensive. He would like to classify the fine part of the fragments. The fine part represents the finished product. The fraction with the broken pieces are useless for further use in the grain size. For this reason, the fragment should be returned to the grinding process in order to reach the correct grain size.

solution:

AViTEQ proposed to the customer a linear vibrating screen driven by unbalanced motors (VSB1500 / 3000-2UVK79W). The screen has 2 fine screen decks made of long-life thin-wire with large open screen area. The upper screen deck has a long mesh of 2 x 6 mm and the lower one a square mesh of 1x1 mm. Two difficulties with respect to the screen had to be solved constructively. The first thing to mention is that the bulk material mixture has a temperature of 110 ° C. As a result of the introduction of heat into the screen decks, a length expansion occurs and the screen deck is in danger of "fluttering" and thereby causing damage to the screen media. Due to an intelligent spring tension, the screen decks does not lose its tension even in the case of a longitudinal expansion. The fine proportion of the calcite (97%

<30 μ) is the second problem. The fine proportion in the bulk material mixture tends to blind and block the screen decks and, in conjunction with temperature, also lead to adhesion (caking) to the screen body. Vibration is the ideal solution for this problem. A high acceleration of the screen basket and the screen decks of 4.5 G and a vibration (swinging width) of 8.2 mm at a frequency of 16 2/3 Hz will remove the fine portion from the screen. In order to prevent "caking" in the bottom area of the sieve, the floor was made of highly polished, polished stainless steel (IIC). The screen is rounded with temperature-resistant sleeves (up to 200 ° C) in the inlet and outlet area.

usability:

The AViTEQ linear tensioning screen can reduce costs and time for the customer. Manual cleaning of the balls is no longer necessary. In addition, the broken pieces can be returned to the process. This results in less waste product.

place of installation: South Korea