

Method for sorting lump ore containing minerals with weak magnetic susceptibility and non-magnetic minerals involves feeding the lump ore in measured doses onto a conveyor, applying an electromagnetic field to the pieces of feedstock, identifying the feedstock pieces based on the presence of a useful component, comparing the presence of the useful component in a piece with its threshold value, and forming streams, one of which contains the useful component and the other consists of waste rock. In the memory of a computing device which functions as a sorting controller the following is entered : information regarding the geometric parameters of the array of induction coils—which are incorporated into the sensors of the sensor unit—the speed at which the ore pieces move along the conveyor belt, synchronization pulses in the form of a sequence of pulses that establish the relationship between the movement of the conveyor belt and the data on the ore pieces, normalized correction functions for reducing the sensor output signal depending on the size of the pieces being sorted, the distance of the geometric center of the piece from the center of the induction coil, the geometric position of the ore piece axis relative to the induction coil measuring axis, the specific geometric parameters of the piece and the ore fractional composition by size class, as well as sorting criteria taking into account the threshold or lower and upper values of the ore piece magnetic susceptibility, wherein the sensors in the sensor block are positioned based on the required sensitivity of a single induction coil, while the coils are arranged in rows perpendicular to the direction of movement of the conveyor belt at a distance between the edges of the coils in the rows of the matrix.