

Abstract

The present invention discloses a large visual direct shear experiment platform for solid filling materials, consisting of a reaction frame, a tamping machine, a loading system, a shear system and a data monitoring system. The tamping machine can simulate a tamping process after the solid filling materials are filled into a goaf in a solid filling coal mining process, each of the systems cooperate with each other, a large direct shear experiment can be performed on the tamped solid filling materials, a large confined compression experiment can also be performed, relevant data in the experiment process can be collected to obtain results such as a shear strength parameters, stress-strain characteristics and creep characteristics of the tamped solid filling materials, and at the same time, the material particle movement and crushing conditions and the shear zone development process in the experiment process can be observed in the whole process. The platform has a simple structure and multifunction, and is an experiment platform for deep studying mechanical properties of the tamped solid filling materials and the influence of the tamping process on the mechanical properties of the filling materials, and study results have important significance on guiding selection of the solid filling materials and optimization of the solid filling coal mining process.

Figure 1 accompanies.