

Surface to Underground High Volume Backfilling System

JENNCHEM's surface to underground high volume backfilling system is a purpose designed large volume pumping operation for applications such as longwall pre-driven recovery roadways (PDRR). Key aspects of the JENNCHEM system include mobility, automation and pumping rates. No footings are required to setup and operate this system. The system is completely automated and is operated and monitored from a purpose-built control room. With a pumping output capability of up to 100M³ per hour and an overland pumping capability of up to 1,000M, this system is capable of filling multiple PDRRs from the one location and filling a single PDRR within 2 weeks

System Setup:

- The complete setup includes:
 - 5 x 50M³ horizontal silos (1 x GP cement, 4 x flyash)
 - 1 x cement feed hopper
 - 1 x continuous mixer
 - 1 x trailer mounted concrete pump
 - 1 x control room
- The setup can be configured in various ways depending on the area available. As this system was designed with mobility in mind, moving to different locations within a mine site or to different mine sites can be done with relative ease.
- With all silos filled, the system can produce up to 300M³ of backfilling grout.

Horizontal Mobile Silos:

- Each mobile silo will typically hold 50M³ or around 50-55 tonnes of cement products. They are able to be loaded on and off of a low loader trailer by a single operator. No mechanical aid is required.
- The silos do not require oversize/wide load transport making them a very cost-effective mobile option to transport to and from sites.
- All silos are equipped with both manual and automatic unloading capability, auto vibration, low and high audio/visual alarms, pressure relief systems and filter elements for loading.
- The metered unloading of the cement silo is via a deductive weighing system, which take its information from scales located on the cement feed hopper. The silos have a unloading rate of up to 1,200kg per minute (73T per hour).

Continuous Mixer:

- Capable of continuous mixing of up to 100M³ per hour, the electric over hydraulic continuous mixer is loaded with water, flyash and cement via automation, controlled by a computer managed system set to the specific requirements of each project.

Trailer Mounted Delivery Pump:

- The trailer mounted concrete pump is capable of pumping up to 100M³ per hour at a distance of up to 1,000M. The pump is an all-in-one unit powered by an on board 175hp diesel engine.
- The system is self-cleaning and can be towed into position using any rated, site compliant vehicle.