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Sepair dry processing of coal

Pilot plant study conducted by Coaltech

The Sepair dry coal process

- Developed in Russia for application in coal, oil shale and slag recovery
- Uses vacuum (supplied by a fan) to draw coal upwards from a steel mesh conveyor leaving stone and shale on the conveyor
- The coal reports to a cyclonic receiver / conveyor belt
- The intensity of the suction power can be adjusted by changing the fan speed
- Changing the fan speed also controls the relative density of separation
- Coal in the feed ideally needs to be screened into size ranges of 2:1 for example 50 x 25 mm

Evaluation of the Sepair in South Africa

- Tests were conducted in Russia on behalf of Coaltech during 2018
- The results were encouraging and Coaltech initiated negotiations with the Russian supplier for the design and manufacture of a 40 ton per hour pilot Sepair plant
- The plant was shipped to South Africa and assembled at a local colliery in 2019
- Test work was conducted on coal from several sources during early 2020
- Testing was temporarily halted by the Covid-19 epidemic
- Tests resumed towards the end of 2020

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Pilot Sepair plant installed at a local colliery

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Summary of findings to date

- The Sepair is easy to operate
- The unit reaches stable operation within minutes
- The separation (cut-density) can be easily adjusted by simply changing the fan speed
- Coal with a high stone content can be accommodated by increasing the speed of the mesh conveyor
- Relatively good EPM values and low cut-point densities are possible
- The Sepair results obtained on the upgrade of South African coals are very encouraging
- Report with detailed results available on the Coaltech website

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