



# CSIR

Touching lives through innovation

## SEED FUND PROJECTS

### that support the South African Mining Industry

The Council for Scientific and Industrial Research (CSIR) applies cutting-edge mining research, development and innovation to support the South African mining industry. Through the Mine Health and Safety Council (MHSC) seed fund, the CSIR embarked on infrastructure upgrade projects to address and strengthen health and safety compliance in the mining sector. These specialised facilities play a critical role in supporting the mining industry's safety standards towards achieving the Zero Harm objective.



## MHSC

Mine Health and Safety Council



# THE LABORATORY INFORMATION MANAGEMENT SYSTEMS PROJECT

Over the years, the CSIR Rope Testing laboratory has conducted statutory winder rope tests for mines across South Africa. Steel wire ropes are used to hoist conveyances that transport people and material up and down hundreds of mine shafts in the country. The Laboratory Information Management Systems (project seeks to upgrade the existing system to facilitate tracking and traceability of specimens throughout their time in the laboratory. The enhanced system supports the CSIR Rope Testing laboratory in providing quality, efficiency, and quick turnaround times expected by the industry for compliance.



Wire rope test piece being positioned into the test machine







Post-test rope condition inspection



Preparing test pieces of winder rope for testing



# BREATHING SIMULATOR MACHINE

The project, co-funded by Mine Health and Safety Council and CSIR, equipped the CSIR Self-Contained Self-Rescuer (SCSR) testing laboratory with a modern breathing simulator machine that complies with the ISO 16900 suite of international standards. SCSRs are a source of oxygen for mineworkers during underground fires and explosions or toxic gas leakages. The new equipment helps the laboratory to execute the SCSR monitoring programme required by the Mine Health and Safety Act, regulation 16.4. The additional breathing simulator enables the laboratory to accommodate the increasing demand for production and in-service testing of SCSR for the mining industry. It also contributes to the research, development and innovation testing for local and international SCSR manufacturers.

*Technician monitoring a test on the breathing simulator*

*Self-contained self-rescuer undergoing functional performance testing on the breathing simulator*





*Installing a self-contained self-rescuer for testing*







# ▶ THE 1000 T COMPRESSION TESTING MACHINE

The South African mining industry has, over decades, experienced severe injuries and fatalities due to, what is known in mining as fall of ground - incidents related to unexpected rock mass movement or the uncontrolled release of rock in excavations due to gravity, pressure or rockbursts. The 1 000-tonne Compression Testing Machine project focused on upgrading a testing facility used extensively in the evaluation and characterisation of mine support products. This project equipped the compression testing machine with a modern hydraulic power pack and control system. The new system enhances the operability and functionality of the testing machine to ensure consistency and validity of the test results.



Testing officer performing a test

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*Mine support pack being installed in the test machine*





**FOR MORE INFORMATION,  
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**MHSC**  
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