

FOCUS ON

Guarding over the integrity of a mining lifeline

Steel wire ropes are used to hoist conveyances that transport people and material up and down hundreds of mine shafts in South Africa. The steel wire rope is a lifeline of these conveyances; therefore, the structural integrity of the rope is of paramount importance. If the rope breaks in service, the consequences could be disastrous.



ROPE TESTING LABORATORY

The CSIR's internationally recognised steel wire rope testing laboratory tests on average 1 800 rope specimens per year and serves the South African mining industry, as well as local and international manufacturing and helps them to determine the breaking strength and general condition of steel wires. It is the only laboratory that can accommodate large rope diameters – up to 160 mm – that are used in South Africa's ultra-deep mines.

The laboratory is also one of the two facilities in South Africa authorised by the Department of Mineral Resources to conduct statutory testing of steel wire rope samples from mine winder installations.

The CSIR maintains a comprehensive database of steel wire rope test results (this includes tests by the CSIR rope testing laboratory, as well as those carried out by the Scaw

Metals laboratory in Jupiter, Johannesburg), which provide instantaneous access to past and present test certificates via an online platform.

Large diameter wire ropes – up to 160 mm and with a 1 500 ton (15MN) breaking strength – are tested for heavy lifting and marine industry applications. In addition to rope testing, conveyor belts and heavy lifting items, including anchor plates, lifting brackets, sockets and many more items, have been tested in the rope testing laboratory.

The CSIR rope testing laboratory is one of the few rope testing laboratories in South Africa accredited by the South African National Accreditation System for compliance with the ISO 17025 standard, ensuring international recognition of the quality of work and validity of results produced by the laboratory in the tensile testing of steel wire ropes.

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