

# MHSC RESEARCH PROJECTS UPDATE

## PURPOSE

This newsletter provides an update of some of the MHSC recently completed research projects and outcomes, thus ensuring that the South African Mining Industry tripartite stakeholders are aware of and use research outcomes to inform their occupational health and safety (OHS) decision making.

## ABOUT MHSC

The MHSC is a national public entity (Schedule 3A) established in terms of the Mine Health and Safety Act, No 29 of 1996, as amended. The entity comprises a tripartite board represented by State, Employer, and Organised Labour members under chairmanship of the Chief Inspector of Mines. The MHSC is mandated to advise the Minister of Mineral Resources on occupational health and safety (OHS) issues in the mining industry relating to the development and implementation of the MHSC annual OHS research programme, reviewing and development of mining OHS legislation and dissemination (knowledge and technology transfer) of MHSC research outcomes to improve OHS conditions in the South African mining industry (SAMI).

Since its inception, the MHSC conducted some research to assist the South African Mining Industry to mitigate against OHS risks. The MHSC's research Thrust Areas of are as follows:

1. Human Factors / Behavioural Safety
2. Rockfalls
3. Rockbursts
4. Explosions and Fires
5. Machinery and transport systems
6. Airborne pollutants
7. Physical hazards
8. Occupational Diseases
9. Special Projects.

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Tables 1 gives details of some of the MHSC recently completed research projects.

No.	Project name	Thrust Area	Research outcomes
1	SIM 140202 "Identify opportunities to improve the safety of barring-down practices."	Rockfalls	Barring Leading Practices were identified and captured in 6 animated training videos for the Gold, Platinum and Coal underground mines.  Project also identified some opportunities for improving the safety of barring-down practices for the Gold, Platinum and Coal underground mines.
2	SIM 130903 "Safety and Security Challenges Impacting Women in the South African Mining Industry."	Special Projects	The research recommended a best practice guideline which can be used by the South African Mining Industry to review, update and align current policies and procedures on workplace violence and sexual harassment in the mines with evidence-based data from the study.
3	SIM 140905 "Handbook On Personal Protective Equipment (PPE) For Women In Mining (WIM)."	Special Projects	The project produced illustrative handbooks in English, Zulu, Sotho, Tsonga and Afrikaans, that provides comprehensive awareness on PPE for WIM.  The project also produced a catalogue to assist the SAMI to select appropriate PPE for WIM.
4	Culture Transformation Framework (CTF).	Special Projects	The project identified 11 CTF pillars which the South African Mining Industry must implement to accelerate the attainment of Zero Harm. The 11 pillars are part of the 2014 OHS summit milestones of which 6 pillars were prioritised for 100% implementation by December 2020: <ul style="list-style-type: none"> <li>• Leadership.</li> <li>• Leading Practices.</li> <li>• Bonus &amp; Performance Incentive.</li> <li>• Diversity Management.</li> <li>• Data Management.</li> <li>• Risk Management.</li> </ul>
5	SIM 130904 "New approaches to induct employees in the mining sector on dangers related to thermal stress and preventative measures- Iyashisa Game"	Special	Project identified that the utilisation of Iyashisa Board Game during induction will improve retention of work knowledge of heat related diseases, signs and symptoms and treatment thereof.
6	SIM 130102 "How can we best monitor behaviour change from interventions related to the people-centred adoption of leading practices?"	Human Factors	Project recommended a survey tool which can be used to determine and monitor behaviour change at workplaces.
7	SIM 140201 "Training on the Technology transfer on Support design in the Bushveld Complex"	Rockfalls	Extended training to expand exposure of the technology from project SIM 120201, thus equipping rock engineering practitioners with the knowledge and skills to carry out risk based support designs for Fall of Ground risk mitigation.
8	SIM 140204 "Integration of the South African National Seismograph Network and Database with Mining Networks."	Rockfalls	Integrated database of available seismological information from the South African National Seismograph Network and mining networks for research into mine seismology.
9	SIM 140205 "Fluid-induced seismicity in the Central Basin Area: ground motion prediction and the development of an early warning system for risk reduction"	Rockfalls	Strong ground motion prediction for the maximum expected magnitude and the evaluation of damage potential, as it is defined by the South African Building Codes.  Early Warning System for risk reduction by monitoring the state of dynamic processes in the rock mass of the Central Basin.
10	SIM 120501 "Noise controls for mining equipment."	Machinery and transport systems	Implementing and validating the methodology, as proposed in research project SIM 050501 "Noise controls selection and design methodology for mining equipment": <ul style="list-style-type: none"> <li>• The methodology developed and validated for the silencing of mining equipment.</li> <li>• Standard for above ground noise measurements.</li> <li>• The underground noise prediction methodology.</li> </ul>
11	Develop an operational manual for the implementation of the revised Code of Practice: Assessment of Personal Exposure to airborne Pollutants	Airborne pollutants	Project produced a manual and visual aids to inform personnel (responsible for the implementation of the Code of Practice) on: <ul style="list-style-type: none"> <li>• The intended purpose of the COP.</li> <li>• Highlight the differences between the current and the revised COP.</li> <li>• The correct interpretation of the various revised COP requirements.</li> <li>• Provide some theoretical and practical examples on how the requirements of the COP must be achieved.</li> </ul>
12	The Identification, Selection and Promotion of TB Leading Practices in the South African Mining Industry (SAMI).	Occupational Diseases	A compendium of leading practices which will assist the SAMI to effectively manage TB.  A monitoring and evaluation tool for use by the mining sector.
13	Guideline for the identification and adoption of leading OHS practices and research outcomes.	Special Projects	Guideline for the identification and adoption of leading OHS practices and research outcomes to assist the SAMI to successfully implement the Leading Practice Pillar of the CTF as required by the Mining Charter and the MHSC 2014 OHS Summit Milestones.

If you need to know more about the Mine Health and Safety Council projects and the work of the Council visit [www.mhsc.org.za](http://www.mhsc.org.za)