

Shafts and hoisting (winding) systems

Mining

Mine hoisting systems primarily consist of shafts, headframes, hoists, ropes, and conveyances. Selection and configuration of the optimal system to meet production requirements are major considerations for mine design, production, and ongoing operations. The trend continues towards higher production capacities from increasingly deeper ore bodies that need larger, more sophisticated, and complex shafts and hoisting systems.

We provide comprehensive expertise in the design, selection, specification, and optimization of hoisting systems to support your mine production requirements.

Our shaft and hoisting systems include:

- Vertical and inclined shafts, with access from surface or underground
- Shaft stations
- Shaft freezing
- Shaft linings
- Shaft steelwork
- Slamming analysis of shaft steelwork for high-speed and large payloads
- Hanging towers for shafts in poor ground conditions
- Rope guided shaft layouts
- Hoisting system configurations and selection including single-drum, double-drum, multi-rope Blair- and Koepe hoists (winders)
- Ground-mounted or tower-mounted hoists (winders)
- Roping up configurations and rope changing methods for Koepe hoists (simultaneous multi-rope roping up)
- Steel and concrete headframes
- Shaft conveyance arresting arrangements
- Rope compensating arrangements for multi-rope Blair and Koepe winding
- Cage clamping devices for safe loading and off-loading of people and heavy equipment
- Loading and discharge arrangements for fully automated operation



Modular mine headframe

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- Hoisting system performance analysis
- Shaft upgrades for increasing production including major modifications to headframes and skip-loading stations to minimise change-over interruptions in an operating shaft
- Materials and large mechanised mining equipment handling
- Cycle time evaluations and optimization
- Upgrades of obsolete hoisting equipment, drives and control systems
- Refurbishment of old hoists (winders) for re-use at new shafts
- Safety audits
- Performance audits, inspections, and technical troubleshooting
- Support for all study phases of both brownfield and greenfield projects, from concept to full EPCM implementation and ongoing operations support

By drawing on our full range of engineering and project delivery services you can minimize engineering and construction interfaces and maintain continuity from design through to implementation of your projects.

We can help you integrate the selected shaft and hoisting system with all elements of the mine and infrastructure designs, so that it is executed to the highest standards of safety, quality, and sustainability.