

SECOND CLASS QUARRY MANAGER'S EXAMINATIONS CONTENT OF THE FOUR EXAMINATION PAPERS

These examinations apply for persons who do not have the relevant qualifications required for First class, such as a Degree or Diploma in Mining Engineering or equivalent, as required by the Mines and Works Inspection Regulations 2013. A second class quarry manager can only manage operations where up to 19 persons are employed as per these Regulations.

These examinations are conducted once a year in November.

Paper I

Quarrying

- general management and administration
- planning and organisation
- geology
- quarry design and layout
- reconnaissance and location of quarry sites
- methods of working quarry faces
- dump construction and management
- constructing slimes dams
- precautions taken to prevent rock falls
- slope stability
- means of access and location of service roads and buildings
- safe working practices and health hazards
- environmental management
- prevention of nuisance such as noise and blast vibrations
- rehabilitation - progressive and final
- any other topic considered appropriate by the Chief Inspector of Mines

Paper II

Explosives

- composition
- transport, handling and storage
- explosive accessories
- principles of fragmentation
- the use of low and high energy explosives
- the causes of deterioration
- the destruction of defective explosives
- charging holes, methods of detonating explosives
- blasting design
- blasting calculations
- detection of defects in electrical firing apparatus
- causes of possible misfires
- methods of minimising ground and air vibrations caused by blasting
- methods of minimising flyrock
- ammonium nitrate based explosives
- regulations regarding explosives and the duties of blasters, as required by Div 5.12 of the Occupational Health, Safety & Welfare regulations, and the Explosives Act and Regulations.
- any other topic considered appropriate by the Chief Inspector of Mines

Paper III

Quarry Machinery

Materials Processing

- basic plant layout
- crushing and screening
- conveyors
- dust control
- stockpiles
- material products
- specifications of rock products
- disposal of products
- any other topic considered appropriate by the Chief Inspector of Mines

Ancillary Equipment

- compressed air equipment
- water supply
- power generation, transmission and lighting
- workshop and general maintenance practices
- haul road construction and maintenance
- pumping and drainage
- any other topic considered appropriate by the Chief Inspector of Mines

Equipment

- blast hole drills and drilling
- loading and excavation equipment eg. shovels, excavators, scrapers, draglines etc
- transport eg. haulage trucks, belt conveyors etc
- mine services equipment eg. graders, water carts, bulldozers, etc
- equipment for the removal of overburden
- secondary breaking and the loading and transport of broken material
- soft rock quarrying using rippers and bulldozers and miscellaneous equipment
- rollover protective structures
- any other topic considered appropriate by the Chief Inspector of Mines

Paper IV

Mathematics

- basic arithmetic and geometry
- calculations of areas, volume, tonnages and costs
- any other topic considered appropriate by the Chief Inspector of Mines