

Mining engineer Job Description

A free job description template for Australian mining operations

Company Name: _____

Location: _____

Employment Type: _____

Reports To: _____

Date: _____

DISCLAIMER

This mining engineer job description template is designed to reflect Australian workplace standards and mining industry practices at the time of publication. Confirm the applicable employment arrangements for your business and ensure compliance with all relevant employment and work health and safety laws.

1. Position overview

A mining engineer designs and plans how a mine is developed and operated safely, productively and profitably. The role turns geological and resource data into practical extraction plans — from short- and long-term mine plans through to detailed pit and stope designs, drill-and-blast design, production scheduling, haulage and dump planning, ventilation (in underground operations), equipment selection and cost and productivity analysis.

Unlike the operational mine workforce, a mining engineer is a professional role that is generally award-free in Australia. The Mining Industry Award 2020 (MA000011) covers operators, drillers and trades on site, but it explicitly excludes professional employees such as engineers, geologists and scientists. Pay and conditions for mining engineers are instead set by individual employment contracts or an enterprise agreement.

This template provides a foundation for creating clear job descriptions that attract qualified engineers while setting appropriate expectations for the role. Once your team is in place, coordinate technical and operational staff efficiently with mining rostering software.

2. Key responsibilities

Mine planning and design

Preparing short- and long-term mine plans, pit and stope designs, and development schedules that meet production and safety targets.

Drill-and-blast design

Designing blast patterns, selecting explosives and specifying parameters to optimise fragmentation, dilution and safety.

Production scheduling

Sequencing extraction, haulage and dump planning to meet output targets while managing grade, waste and equipment availability.

Equipment selection and ventilation

Selecting fleet and fixed plant, and designing ventilation and services for underground operations to maintain safe working conditions.

Cost and productivity analysis

Analysing operating costs, productivity and performance against plan, and recommending improvements to reduce cost per tonne.

Technical supervision and compliance

Supervising technical execution and ensuring designs meet geotechnical, safety and production requirements, working with geologists, surveyors and operations.

3. Skills and attributes

- Technical analysis: Strong grasp of mine planning software, geotechnical principles and data-driven decision making.
- Design capability: Ability to produce accurate pit, stope, drill-and-blast and scheduling designs that balance safety, cost and production.
- Safety focus: Deep commitment to work health and safety, hazard identification and designing to eliminate or control risk.
- Collaboration: Works closely with geologists, surveyors, operations and maintenance teams to align plans with reality on the ground.
- Commercial awareness: Understands cost drivers, productivity metrics and the economics of extraction to support profitable operations.
- Communication: Clearly explains technical plans and constraints to operators, supervisors and management, and documents designs precisely.

4. Qualifications and requirements

The qualifications for mining engineer positions are more formal than for operational mining roles. Some are mandatory, while others are preferred or desirable for senior positions.

- Bachelor degree in mining engineering (required) — A university degree in mining engineering (or closely related discipline) is required
- Statutory certificate of competency — Mine manager or quarry manager tickets are desirable for senior and statutory roles
- AusIMM membership — Membership of the Australasian Institute of Mining and Metallurgy is advantageous
- Driver's licence — A current driver's licence is desirable for site and field work
- Working rights (required) — Eligibility to work in Australia

5. Working conditions

- Fly-in fly-out (FIFO) work to remote mine sites
- A mix of office-based planning and field work in the pit or underground
- Roster patterns such as 8/6 or even-time swings
- Wearing personal protective equipment (PPE) on site
- Some continuous-coverage operations requiring shift and on-call work
- Exposure to dust, noise, heat and remote-location conditions

6. Award information

An award-free professional role

Mining engineers are typically award-free professionals. The Mining Industry Award 2020 (MA000011) explicitly excludes professional employees such as engineers, geologists and scientists, so it does not cover mining engineers. Their pay and conditions are instead set by individual employment contracts or an enterprise agreement, not by MA000011.

Because there is no award floor for these roles, salary, allowances (including FIFO and remote-location arrangements) and conditions are negotiated directly. Set them out clearly in a written agreement — digital employment contracts make this straightforward and consistent across your team.

Which award covers the mine workforce

The Mining Industry Award (MA000011) covers the operational mine workforce — machine operators, drillers and trades — not professional engineers. Where a modern award does apply to professional engineers, it is the Professional Employees Award 2020 (MA000065) rather than the mining award. In practice, most mining engineers in Australia are engaged on above-award individual contracts or an enterprise agreement.

Always confirm the correct arrangement for the specific role and location, and don't apply MA000011 pay rates to an engineering position they do not cover.

7. Frequently asked questions

About the role

Q: What does a mining engineer do?

A mining engineer designs and plans how a mine is developed and operated. This includes short- and long-term mine plans, pit and stope designs, drill-and-blast design, production scheduling, haulage and dump planning, ventilation in underground operations, equipment selection, and cost and productivity analysis. They also supervise technical execution and ensure designs meet safety, geotechnical and production targets, working closely with geologists, surveyors and operations teams.

Q: Is a mining engineer covered by the Mining Industry Award?

No. A mining engineer is generally an award-free professional role. The Mining Industry Award 2020 (MA000011) explicitly excludes professional employees such as engineers, geologists and scientists — it covers the operational mine workforce (operators, drillers and trades), not engineers. Pay and conditions for mining engineers are set by individual employment contracts or an enterprise agreement instead.

Q: What is the difference between a mining engineer and a mine operator?

A mine operator runs equipment and carries out extraction tasks on site and is typically covered by the Mining Industry Award (MA000011). A mining engineer is a professional who designs and plans the operation — the mine plans, blast designs and schedules the operators then execute — and is generally award-free, engaged on an individual contract or enterprise agreement rather than under MA000011.

Q: Do I need to include a salary in a mining engineer job description?

It's not legally required, but because the role is award-free there is no award rate to reference, so indicating a salary range or 'competitive above-market salary' helps attract qualified candidates. Be clear about total remuneration including FIFO and remote-location allowances, since these are negotiated rather than set by the Mining Industry Award.

Qualifications

Q: What qualifications does a mining engineer need in Australia?

A university degree in mining engineering (or a closely related discipline) is required. For senior and statutory positions, a statutory certificate of competency such as a mine manager or quarry manager ticket is desirable. Membership of the Australasian Institute of Mining and Metallurgy (AusIMM) and a driver's licence are advantageous, and candidates must have working rights in Australia.

Q: Is a mining engineering degree mandatory?

Yes. Unlike many operational mining roles, a mining engineer position requires a relevant university degree. This is the core qualification and should be listed as an essential requirement. Related engineering disciplines may be considered depending on the role, but a formal degree is the baseline expectation for the profession.

Q: What is a statutory certificate of competency?

Statutory certificates of competency — such as mine manager or quarry manager tickets — are formal, legislated qualifications required to hold certain statutory positions at a mine. They are generally desirable rather than mandatory for a general mining engineer, but become essential as engineers progress into senior or statutory roles. List them as a preferred qualification unless the specific role requires one.

Q: What qualifications should I require vs prefer for a mining engineer?

Mandatory requirements should include a mining engineering degree and working rights in Australia. Preferred qualifications typically include a statutory certificate of competency, AusIMM membership, a driver's licence, and experience with mine planning software. Tailor the essential vs desirable split to the seniority of the role so you don't unintentionally narrow your candidate pool.

Employment

Q: How is a mining engineer's pay set if there's no award?

Because mining engineers are award-free professionals, their pay is set by individual employment contracts or an enterprise agreement, not by the Mining Industry Award (MA000011). Salary, FIFO and remote-location allowances, bonuses and conditions are negotiated directly. Setting these out clearly in a written contract avoids disputes — digital employment contracts help keep terms consistent.

Q: Does the Professional Employees Award apply to mining engineers?

Where a modern award does apply to professional engineers, it is the Professional Employees Award 2020 (MA000065) rather than the Mining Industry Award. In practice, however, most mining engineers in Australia are engaged on above-award individual contracts or enterprise agreements. Always confirm the correct arrangement for the specific role rather than assuming MA000011 applies.

Q: What should I include in a mining engineer employment contract?

Key elements include the position title, employment type, salary and any bonus structure, FIFO and remote-location allowances, roster pattern, main duties, reporting line, work location and required qualifications. Because the role is award-free, the contract carries more weight in defining conditions. Use our digital employment contracts to standardise and simplify this.

Q: What employment type suits a mining engineer?

Mining engineer roles are almost always full-time, permanent positions given the technical continuity the work requires. Some engineers work on fixed-term project contracts or through consultancies for specific studies or expansions. FIFO arrangements are common, so the employment type should be paired with clear roster and travel terms in the contract.

Rostering

Q: What roster patterns do mining engineers work?

Mining engineers commonly work FIFO swings such as 8/6 (eight days on, six off) or even-time rosters, depending on the site and operation. Office-based planning work may follow a more standard week, while site-based engineers align with the operation's shift coverage. See our guide to FIFO roster patterns explained for how the common cycles compare.

Q: How do I manage fatigue for FIFO mining engineers?

Fatigue is a major work health and safety risk on FIFO rosters. Manage it by designing rosters with adequate rest, limiting consecutive long shifts, and monitoring hours across swings. Our guide on managing fatigue on FIFO rosters covers practical controls, and rostering software helps you track hours and spot fatigue risks early.

Q: How do I roster mining engineers alongside the operational team?

Coordinating engineers, operators and trades across swings and shifts is complex. Build a single roster that aligns technical staff with operational coverage and travel schedules. Our how to roster mining staff guide walks through the process, and rostering software keeps everyone's shifts and site attendance visible in one place.

Q: How do I track hours and attendance across FIFO swings?

Tracking hours across remote sites and long swings is easier with digital tools. Use time and attendance software to record start and finish times, capture site attendance and feed accurate hours into payroll. This is especially useful for award-free engineers whose pay and allowances are contract-based rather than award-driven.