Quarry Engineer

Quarry engineers design, construct and operate mine and quarry workings to extract coal, metals such as copper, iron or zinc and non-metals such as salt, sand, clay or phosphates. Their work may be concerned with deep mines, surface (opencast) mines or quarries.

They are sometimes known as mining engineers.

The Work

You could be:

- exploring and surveying the proposed site, carrying out feasibility studies and supervising test drilling
- using computer-aided design (CAD) packages to design and plan underground and surface workings, such as tunnels and shafts
- ensuring that effective ventilation and pumping systems prevent gas, flooding and dust from affecting the mine
- supervising the running of the mine and the extraction of the minerals or ores
- managing drilling, blasting and other operations
- taking overall responsibility for working conditions and safety in the mine
- monitoring the effect the mine has on the local environment, and possibly restoring the site to its original state
- planning timetables, meeting budgets, writing reports and giving presentations
- looking at different ways of mining or improving mining systems.

Pay

The figures below are only a guide. Actual salaries may vary, depending on:

- where you work
- the size of the company or organisation you work for
- the demand for the job.

The starting salary for quarry engineers at graduate entry is usually between £24,000 to £28,000 a year. With experience this can rise to £50,000 a year and senior engineers can earn up to £80,000 a year, possibly more. Overseas salaries can vary widely depending on the project, contract and location. Salaries are usually higher in Australia, Canada and the USA.

Conditions

- You would work both in an office and on site.
- Many jobs are overseas, so you would have to travel a lot and face a wide range of physical and weather conditions.
- On site, the conditions could be hot, dirty, dusty and uncomfortable.
- You may have to spend some time working in confined spaces, possibly underground.

- There could be a lot of physical activity, including climbing ladders.
- You could be at risk of accidents from equipment and you would have to wear protective clothing, headgear and footwear.
- When working on site you may have to live in accommodation that is very basic, sometimes in remote areas.
- You may have to work long hours or work shifts. You may have to be on call for emergencies.

Getting In

- You normally need a degree (SCQF Level 9) in a relevant subject such as civil or mechanical engineering, geology or earth sciences.
- For entry to a degree course you need 4-5 Highers including Maths and Physics or Engineering Science.
- Gaining relevant work experience while studying is very important for making contacts in the industry.
- You may be able to qualify by other training routes.
- You should have good general fitness in this work.

Because of the decline of mining in the UK, many British-trained quarry engineers work abroad for large international mining companies. They often work in mine management, and move around several countries during their career. Some quarry engineers work in related areas such as tunnel construction.

What Does It Take

You need to have:

- good communication and presentation skills
- good analytical skills
- excellent technical ability
- good maths, science and IT skills, including a knowledge of specialist software packages
- a strong sense of responsibility and an awareness of health and safety issues
- good project management skills.

You need to be able to:

- handle complex information
- solve practical problems
- plan, organise and prioritise programmes of work
- keep within a budget
- remain calm and work under pressure to meet deadlines
- work on your own and also as part of a team, encouraging and motivating others.

Training

- After gaining your degree and some further training with an employer, you can register with the Engineering Council as a professional engineer – either Incorporated Engineer (IEng) or Chartered Engineer (CEng).
- For IEng you need to have either a recognised Bachelor's degree (SCQF Level 9) or a recognised HNC (SCQF

Level 7) or HND (SCQF Level 8) plus further study to Bachelor's degree level.

- For CEng you need to have a recognised Bachelor's degree with Honours (SCQF Level 10) plus a recognised Masters degree (or equivalent) (SCQF Level 11), or a recognised integrated Master of Engineering (MEng) degree.
- If you do not have any of the above qualifications, you may still be able to achieve IEng or CEng by other approved routes. You can check these alternative routes with the Engineering Council or with the appropriate professional engineering institution.
- You may need to gain practical skills depending on the type of mine you work in.
- You must update your skills and knowledge throughout your career.
- The Institute of Materials, Minerals and Mining (IOM3) website has information on continuing professional development (CPD).

Getting On

- Quarry engineers who first qualify as IEng can progress to CEng after further training and experience. This can open up a wider range of opportunities.
- It helps if you are willing to move, as the majority of jobs are overseas.
- With experience, you could move into project planning, contractual and financial work or developing new technologies.
- You might become a self-employed consultant.

More Information

The Engineering Council sets and maintains the standards of the engineering profession in the UK. It does so through over 30 professional engineering institutions which are Licensed Members of the Engineering Council.

The Tomorrow's Engineers website has more information on careers in engineering.
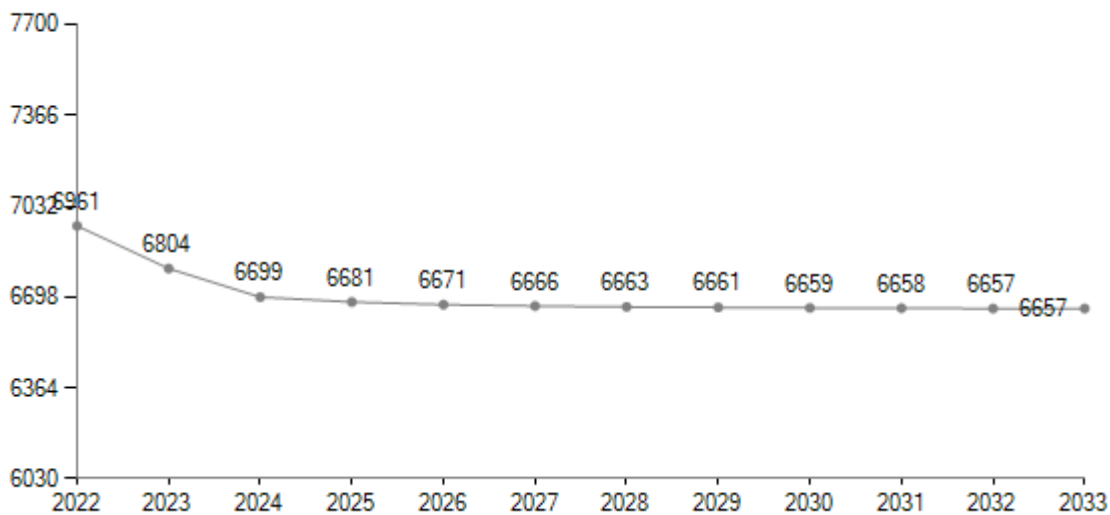
Contacts

Statistics

Employment Status UK %

88.78%
FT Employee

7.29%
Self Employed

3.93%
PT Employee
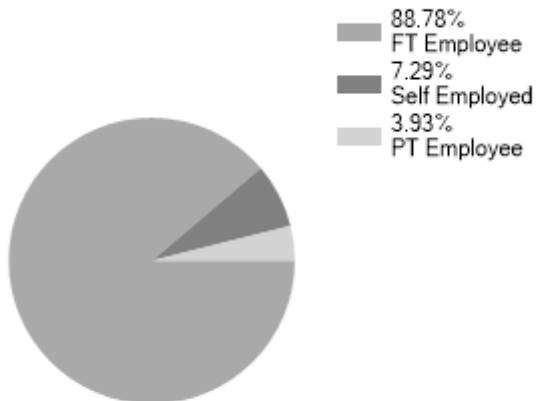
Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All

Predicted Employment in Scotland

LMI data powered by Lightcast