

Recommended minimum technical requirements to commence

Level 6 ventilation officer training and/or Advanced Diploma in Mine Ventilation

Note: The AQF Level 6 qualifications conducted by TQ/MVA are set to a high standard. If you are unable to undertake the following minimum tasks prior to starting these competencies, you are unlikely to be able to obtain accreditation in these Level 6 qualifications. It would be advisable to contact TAFE to organise training to become competent in these areas before proceeding.

Mathematics

- Understand how to solve an equation using a formula, e.g. in the formula Area (A) = Height (H)* Width, (W) to be able to calculate A if H and W are known
- Be able to correctly and consistently use equations that combine divisions, multiplications, additions, subtractions, “brackets” and exponents (e.g. Q²)
- Understand basic dimensional analysis, e.g. that if m³/s is divided by m², then the resultant value will have the units of m/s.
- Understand what exponentiation means, e.g. 10⁻³ or 10⁻⁶ and that 10⁻³ = 0.001.
- Be able to rearrange simple equations, e.g. if P = F / A, then F = P * A
- Be able to convert between units, e.g. to be able to convert 5000 Pa into kPa (5 kPa), or to be able to convert 0.8 grams/cubic centimetre (g/cc) into kg/m³
- Understand percentages, fractions and proportions, e.g. that 1% = 0.01, that ¼ = 0.25 and that 1:3 means 1/3rd = 0.3333

PC skills

- Be able operate a PC using Windows 98 or later, including basic keyboard and mouse operations
- Be able to copy contents from a CD onto a hard drive and open files and navigate through folders and files

Spreadsheets

- Be able to enter a simple formula into a spreadsheet (e.g. $A = \pi * D^2 / 4$)
- Be able to navigate around spreadsheets

Scientific calculator

- Be able to use a scientific calculator to solve equations with divisions, multiplications, additions, subtractions, “brackets” and exponents

Chemistry

- Understand that substances are made up of atoms and molecules
- Know the chemical symbols for common substances such as oxygen (O₂), nitrogen (N₂), etc
- Understand basic equation concepts, e.g. $C + O_2 \rightarrow CO_2 + \text{heat}$

Physics

- Be familiar with basic SI (metric) units and symbols, e.g. °C, Pa, N, kg, m, s, etc
- Understand basic concepts such as time, distance, velocity, acceleration, force, pressure, mass, weight, volume, area, density, work, power (you do not need to remember formulas for all these, just what the basic concept is), e.g. pressure is force per unit area

Trigonometry

- Be able to calculate the area and perimeter of a circle, square, rectangle, triangle or other shapes if the formulas are supplied

Statistics

- Be able to calculate the average of a set of measurements

Oral

- Be able to create and then give a simple technical talk using OHPs or Powerpoint (15 mins)

Reading and comprehension

- Be able to read and comprehend technical information, e.g. technical manuals

Written

- Be able to write a relatively simple technical memorandum, procedure, plan or report