



**Learner Assessment Guide**  
**Unit Standard 20394**  
**Apply basic ventilation techniques to assist fire and rescue**  
**operations**  
**(Level 3, Credit 4, Version 1)**

**Level Descriptor**

<b>Level</b>	<b>Process</b>	<b>Employing</b>	<b>Responsibility</b>
<b>3</b>	<b>Carrying out processes that:</b> <ul style="list-style-type: none"><li>• Require a range of well-developed skills</li><li>• Offer a significant choice of procedures</li><li>• Are employed within a range of familiar contexts</li></ul>	<b>Employing:</b> <ul style="list-style-type: none"><li>• Some relevant theoretical knowledge</li><li>• Interpretation of available information</li><li>• Discretion and judgement</li><li>• A range of known responses to familiar problems</li></ul>	<b>Applied:</b> <ul style="list-style-type: none"><li>• In directed activity with some autonomy</li><li>• Under general supervision and quality checking</li><li>• With significant responsibility for the quantity and quality of output</li><li>• With possible responsibility for the output of others</li></ul>

**Descriptors:**

Credit 4 - will require approximately 40 - 48 hours of learning, practice or experience and assessment for a person with no previous knowledge or experience.

Version 1 - This document has been prepared based on version 1 of the Unit Standard.

**Elements:**

1. Demonstrate knowledge of hazards and principles of ventilation and equipment used at emergency incidents.
2. Carry out ventilation operations to assist fire and rescue operations.
3. Re-commission ventilation equipment after fire and rescue operations use.

**Prerequisites:**

None.

**Assessment Conditions:**

Assessment against this unit standard may take place under real or practical simulated conditions.

**Resources:**

The primary references for this unit standard are the *Fire fighter training notes* and the *Positive pressure ventilation station guide* published by the New Zealand Fire Service, and available from NZFS, PO Box 2133, Wellington.

*Ventilation equipment* refers to all equipment used by the fire service provider to specifically remove contaminants and products of combustion from a structure to atmosphere. *Fire and rescue service provider's requirements* or *Standard Operating Procedures (SOPs)* refer to policies and procedures on safety and operation set down by each fire and rescue service employer or host organisation.

**Special Notes:**

1. Compliance with the fire and rescue service provider's Health and Safety policy and procedures is mandatory.
2. Assessment against this unit standard may take place under real or practical simulated conditions.
3. The primary references for this unit standard are the *Fire fighter training notes* and the *Positive pressure ventilation station guide* published by the New Zealand Fire Service, and available from NZFS, PO Box 2133, Wellington.
4. *Ventilation equipment* refers to all equipment used by the fire service provider to specifically remove contaminants and products of combustion from a structure to atmosphere.
5. *Fire and rescue service provider's requirements* or *Standard Operating Procedures (SOPs)* refer to policies and procedures on safety and operation set down by each fire and rescue service employer or host organisation.

**Assessment Brief Instructions:**

**Assessing Element 1: Demonstrate knowledge of hazards and principles of ventilation and equipment used at emergency incidents**

Normally assessed using written or oral questions.

Candidate will demonstrate knowledge of hazards and principles of ventilation and equipment from the primary reference and SOPs, used at emergency incidents.

Candidate will identify products found in the atmosphere of confined spaces that present hazards to fire fighters at fire and non-fire incidents. This must include:

- fire - three products
- non-fire - two products

Candidate will describe the benefits of tactical ventilation in assisting fire and rescue operations in confined spaces. The candidate should consider four of the following:

- access
- rescue
- safety
- internal conditions
- fire attack
- property preservation

Candidate will describe two risks associated with ventilation that are found in the primary references. The candidate should consider the following:

- natural
- automatic
- tactical

Candidate will describe safety and operational factors to be considered prior to ventilation.  
Candidate will explain ventilation techniques with reference to outlet vent location. The candidate should consider the following:

- vertical (top)
- horizontal (cross)
- positive pressure
- negative pressure

Candidate will explain size relationship between the inlet vent and outlet vent for forced ventilation.  
Candidate will identify equipment used for natural and forced ventilation. Candidate will describe the technique for siting positive pressure fans at inlet openings.

- single fans
- fans in parallel

### **Assessing Element 2: Carry out ventilation operations to assist fire and rescue operations**

Candidate will carry out the following ventilation:

- horizontal
- vertical
- natural and forced (negative and positive pressure)

Candidate will demonstrate selection and use of personal protective equipment and ventilation equipment to cover a range of techniques. This includes setting up the equipment, preparing the building for ventilation by opening and closing compartments and use of inlet and outlet vents and communicating to personnel.

Candidate must ready the building or space is readied for ventilation. This includes:

- inlet
- outlets
- selected internal openings
- communicated to personnel

Equipment must be operated correctly and conditions within the building or confined space must be re-evaluated and monitored and then reported.

### **Assessing Element 3: Re-commission ventilation equipment after fire and rescue operations use**

On completion of practical demonstration, all ventilation equipment is recovered and removed, drained, cleaned or refuelled ready for use. This is the check list:

- drained
- cleaned
- refuelled