
**FIRE AND RESCUE SERVICES -
STRUCTURAL AND INDUSTRIAL**
**Identify principles of fire development in
structures and compartments and
smoke impact on people**

level:	3
credit:	5
final date for comment:	March 2008
expiry date:	December 2009
sub-field:	Fire and Rescue Services
purpose:	People credited with this unit standard are able to: demonstrate knowledge of the conditions leading to flashover; demonstrate knowledge of the conditions leading to backdraught; and demonstrate knowledge of the effects of the harmful constituents of smoke on people.
entry information:	Prerequisite: Unit 4647, <i>Explain principles of fire science</i> , or demonstrate equivalent knowledge and skills.
accreditation option:	Evaluation of documentation and visit by NZQA and industry.
moderation option:	A national moderation system of moderation networks has been established by the Fire and Rescue Services Industry Training Organisation.
special notes:	None.

Elements and Performance Criteria

element 1

Demonstrate knowledge of the conditions leading to flashover.

performance criteria

- 1.1 The phenomenon of flashover in fire-involved compartments is identified as a component of fire development.

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- 1.2 The conditions leading to flashover are identified.
Range: room temperature, ventilation, fire loading.
- 1.3 The signs of imminent flashover are identified.
Range: radiated heat, flame conditions, smoke conditions, fire intensity.

element 2

Demonstrate knowledge of the conditions leading to backdraught.

performance criteria

- 2.1 The phenomenon of backdraught in fire-involved compartments is identified as a component of fire development.
- 2.2 The conditions that could result in backdraught occurring are identified.
Range: room temperature, ventilation, fire loading, duration of fire involvement.
- 2.3 The imminent signs of backdraught are identified.
Range: may include but is not limited to - external compartment cladding temperature, flame conditions, smoke conditions, air-flow conditions around the openings to the fire compartment, fire intensity.

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element 3

Demonstrate knowledge of the effects of the harmful constituents of smoke on people.

Range: particulates, narcotics, irritants, heat.

performance criteria

- 3.1 The effects of carbon monoxide on the human body are related to the sustainability of life.
- Range: properties of carbon monoxide, signs and symptoms of people affected by carbon monoxide.
- 3.2 The effects that irritants in smoke have on the human respiratory system are related to the signs and symptoms of asphyxia, and burns.
- 3.3 The effects that particulates have on a person's vision and movement are related to a person's ability to orientate themselves to the surroundings, and their perception of time, space and distance.
- 3.4 The effects of excess heat on the human body are linked to changes in the human body's metabolic function.

Comments on this unit standard

Please contact the Fire and Rescue Services Industry Training Organisation info@frsito.org.nz if you wish to suggest changes to the content of this unit standard.

Please Note

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

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Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0039 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.