



Learner Assessment Guide
Unit Standard 3307
Demonstrate knowledge of elements of construction and loads in
fixed and mobile property fires
(Level 4, Credit 8, Version 3)

Level Descriptor

Level	Process	Employing	Responsibility
4	Carrying out processes that: <ul style="list-style-type: none"> • Require a wide range of scholastic skills • Offer a considerable choice of procedures • Are employed in a variety of familiar and unfamiliar contexts 	Employing: <ul style="list-style-type: none"> • A broad knowledge base incorporating some theoretical concepts • Analytical interpretation of information • Informed judgement • A range of sometimes innovative responses to concrete but often unfamiliar problems 	Applied: <ul style="list-style-type: none"> • In directed activity • Under broad guidance and evaluation • With complete responsibility for the quantity and quality of output • With possible responsibility for the quantity and quality of the output of others

Descriptors:

Credit 8 - will require approximately 80 - 96 hours of learning, practice or experience and assessment for a person with no previous knowledge or experience.

Version 3 - This document has been prepared based on version 3 of the Unit Standard.

Elements:

1. Demonstrate knowledge of building construction and services in relation to fire.
2. Demonstrate knowledge of ship construction, cargoes and services in relation to fire.
3. Demonstrate knowledge of vehicle construction, cargoes and services in relation to fire.

Prerequisites:

Prerequisite: Unit 4651, *Apply knowledge of structural fire behaviour* or demonstrate equivalent knowledge and skills.

Assessment Conditions:

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

Special Notes:

Compliance with the providers Health and Safety policy and procedures is mandatory.

Assessment Brief Instructions:

Assessing Element 1: Demonstrate knowledge of building construction and services in relation to fire.

The learner ensures construction types are identified and their effect on fire behaviour is described in accordance with the reference standards. This includes the following types of building, but is not limited by:

- residential
- commercial
- industrial
- multi-storey

The learner ensures methods of controlling and utilising building services to support incident management strategies are described in accordance with the reference standards. This includes the following types of systems, but is not limited by:

- heating
- ventilation
- air conditioning
- electrical system
- gas systems
- lifts

The learner ensures methods of controlling and utilising fixed fire detection and protection systems to support fire fighting are described in accordance with the reference standards. This includes the following types of protection systems, but is not limited by:

- smoke and heat detectors
- sprinkler systems
- risers
- gas flooding
- automatically controlled reaction devices
- air sampling systems
- communication systems

The learner ensures common fire engineering design features are described in accordance with the reference standards. This includes the following types of design features, but is not limited by:

- protected paths
- open paths
- safe paths
- fire cells
- fire compartments

Assessing Element 2: Demonstrate knowledge of ship construction, cargoes and services in relation to fire.

The learner ensures the effect of bulk cargoes on fire behaviour is described in accordance with the reference standards. This includes the following types of cargoes, but is not limited by:

- grain
- sulphur
- coal
- cement
- chemicals
- petroleum
- products

The learner ensures the fire behaviour of vessel types and their construction features are described in accordance with the reference standards. This includes the following types of vessels, but is not limited by

- tankers
- cargo and container vessels
- passenger vessels
- roll-on-roll-off vessels
- fishing vessels
- military vessels

The learner ensures methods of controlling ship's services for fire fighting are described in accordance with the reference standards. This includes the following types of systems, but is not limited by:

- heating
- ventilation
- air conditioning
- electrical system
- lifts

The learner ensures fixed fire detection and protection systems are identified and methods of controlling them for fire fighting are described in accordance with the reference standards. This includes the following types of protection systems, but is not limited by:

- smoke and heat detectors
- sprinkler systems
- risers
- gas flooding
- automatically controlled reaction devices
- communication systems
- air sampling systems

The learner ensures impact of fire fighting operations on ship stability is described in accordance with the reference standards. This includes the following types, but is not limited by:

- metacentric height
- free surface water
- fire fighting water

Assessing Element 3: Demonstrate knowledge of vehicle construction, cargoes and services in relation to fire.

The learner ensures the effect of bulk cargoes on fire behaviour is described in accordance with the reference standards. This includes the following types of cargoes, but is not limited by:

- grain
- sulphur
- coal
- chemicals
- livestock
- petroleum products
- passenger

The learner ensures construction features of vehicle types are described in terms of their effect on fire behaviour in accordance with the reference standards. This includes the following types of vehicles, but is not limited by:

- truck
- truck and trailer
- bus
- railway rolling stock

The learner ensures vehicle's fuel type is identified, and its effect on fire behaviour is described in accordance with the reference standards. This includes the following types of fuel, but is not limited by:

- petrol
- diesel
- liquefied petroleum gas
- compressed natural gas

The learner ensures procedures for isolating vehicles' electrical systems are described in accordance with the reference standards.

The learner ensures special hazards associated with vehicles are described in accordance with the reference standards. This includes the following types of special hazard, but is not limited by:

- auxiliary power units
- air and brake lines
- air conditioning
- biohazards
- electrical systems