

Test Certificate Specifications

The controls to be placed on hazardous substances will be generated from the relevant HSNO Regulations.

These Regulations include the requirement that users of hazardous substances obtain test certificates to verify compliance with the HSNO controls.

The specifications included in this document are extracted from the *Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001* and the *Hazardous Substances (Fireworks) Regulations 2001*.

Note: In issuing an approval for a substance, the Authority may vary the controls attached to that substance. Thus the need and specifications for a test certificate may, in specific instances, be different from that indicated in the Regulations. You should consult the controls applying to the specific substances.

	Test Certificate Requirements	
<i>Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001</i>	Facility/Location	Code
24	Design of containers securing Class 1 substances (explosives)	TC 1
24	Containers securing Class 1 substances (explosives)	TC 2
30	Locations where Class 1 substances (explosives) present	TC 3
32(5)	Detonation or deflagration of a Class 1 substance (explosive) in the hours of darkness	TC 4
34(2)	The level of blast overpressure and heat radiation in the detonation or deflagration of a Class 1 substance (explosive)	TC 5
40	Outdoor pyrotechnic displays	TC 6
46(3)	Transfer of Class 1 substances (explosives)	TC 7
81	Locations where Class 2.1.1, 2.1.2 or 3.1 substance (flammable gas, aerosol or liquid) present	TC 8
82	Locations where Class 3.2 or 4 substance present	TC 9
98	Locations where Class 5.1.1 or 5.1.2 substance (oxidiser) present	TC 10
120	Locations where Class 5.2 substance (organic peroxide) present	TC 11
<i>Hazardous Substances (Fireworks) Regulations 2001</i>		
10	Fireworks	TC 12

TC 1 Requirements for test certificates for the design of containers securing Class 1 substances (explosives)

Relevant Regulations

Regulation 24 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

The design of any container securing Class 1 substances (explosives) whose construction is started after the commencement of these Regulations must have a test certificate certifying that the design meets the requirements for compressive, shear, and tensile strength specified in regulation 23(1).

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the HSNO Regulations above and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

The requirements do not apply to containers that are subject to an existing licence under the Explosives Act 1957.

Requirements for test certificate

A test certificate is required to certify that the container design meets the following requirements:

It must have the following:

- a) an outer case with:
 - i) a compressive strength of at least 500 kN/m²; and
 - ii) a shear strength of at least 750 kN/m²; and
- (b) locking arrangements, for any entry into the container or for those parts of the container through which access is gained to the contents, that have a tensile strength of at least 1250 kN/m².

See also:

Test certificate requirements:

- TC 2: containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) are present
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 6: outdoor firework displays
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail.

TC 2 Requirements for test certificates for containers securing Class 1 substances (explosives)

Relevant regulations

Regulation 24 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

Before being used to secure a Class 1 substance (explosive), a container must have a test certificate certifying that the container is constructed according to certain design specifications.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

The requirements do not apply to containers that are subject to an existing licence under the Explosives Act 1957.

Duration of test certificate

A test certificate must be obtained at five yearly intervals, certifying that the container continues to meet the design specification.

Requirements for test certificate

A test certificate is required to certify that the container is constructed according to a design specification which has a test certificate certifying that the design meets the following requirements:

It must have the following:

- a) an outer case with:
 - i) a compressive strength of at least 500 kN/m²; and
 - ii) a shear strength of at least 750 kN/m²; and
- b) locking arrangements, for any entry into the container or for those parts of the container through which access is gained to the contents, that have a tensile strength of at least 1250 kN/m².

The design specification will specify the material type to be used in making the container, its dimensions, and its components, including any part of the container through which access is gained to the contents, the locking arrangements for any such entry, and the arrangements for securing the container against removal.

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) present
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 6: outdoor firework displays
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 3 Requirements for test certificates for locations where Class 1 (explosive) substances present

Relevant Regulations

Regulation 30 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

Locations where Class 1 substances (explosives) are present must have a test certificate to certify that the requirements of regulations 21, 22, 26(2), 26(3) and 27 are being met.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

Requirements do not apply to an area where the substances are located for less than two hours.

The test certificate requirements do not apply to a hazardous substance locations where the only Class 1 substances (explosives) present are in amounts less than the following quantities:

Hazard classification	Quantities
1.1B, 1.2B, and 1.4B	5 kg
1.1 (other than 1.1B or 1.1C), 1.2, and 1.5	50 kg
1.1C and 1.3 (other than 1.3G)	100 kg
1.3G and 1.4 (other than 1.4S)	200 kg
1.4S	1 000 kg

Requirements for test certificate

A test certificate is required to certify that the location where Class 1 substances are present meets the following requirements:

Class 1 substances (explosives) must be located in accordance with the segregation requirements set out in Regulation 21.

When a Class 1 substance (explosive) is not under the personal control of an approved handler as required in Regulation 13, that substance must be secured in a container that meets the requirements of either Regulations 23 and 24, or Regulation 25.

The person in charge of the hazardous substance location must notify an enforcement officer responsible for the enforcement of the Act in the area where the hazardous substance location is situated, at least 30 working days before the commissioning of the

hazardous substance location as an area for accommodating Class 1 substances (explosives) of:

- a) the street address of the place in which the hazardous substance location is situated; and
- b) the maximum quantity and hazard classification of each Class 1 substance (explosive) that the hazardous substance location is designed or constructed to accommodate.

The person in charge of the hazardous substance location must ensure that, where Regulation 13 requires Class 1 substances (explosives) to be under the control of an approved handler:

- a) they personally are an approved handler for such substances, or can demonstrate that a person is available who is an approved handler for such substances; and
- b) any container or building used to hold the substance is secured as required by Regulation 22.

The requirements to reduce likelihood of unintended initiation at hazardous substance location are met (Regulation 27).

Duration of certificate

Where a test certificate is required for a hazardous substance location that test certificate must be renewed at intervals of not more than 12 months, unless on request of the person or persons required to obtain the test certificate the Authority specifies a longer time limit for the test certificate.

The longer time limit specified by the Authority may not exceed 36 months.

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 2: containers securing Class 1 substances (explosives)
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 6: outdoor firework displays
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 4 Requirements for test certificates for the detonation or deflagration of an explosive substance in the hours of darkness

Relevant Regulations

Regulation 32(5) of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

The person in charge of detonation or deflagration must not detonate or deflagrate a Class 1 substance (explosive) during the hours of darkness unless that person has obtained a test certificate to certify that the documented procedures for the detonation or deflagration meet the requirements of the Regulations without natural lighting.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

The designated use zone, notification, and exclusion of personnel requirements do not apply where the only Class 1 substances (explosives) being detonated or deflagrated in any one firing do not exceed the following quantities:

Hazard classification	Quantities
1.1B, 1.2B, and 1.4B	5 kg
1.1 (other than 1.1B or 1.1C), 1.2, and 1.5	50 kg
1.1C and 1.3 (other than 1.3G)	100 kg
1.3G and 1.4 (other than 1.4S)	200 kg
1.4S	1 000 kg

or to the use of a Class 1 category G substance in a pyrotechnic or special effects display.

Requirements for test certificate

A test certificate is required to certify that the detonation or deflagration of a Class 1 (explosive) substance during the hours of darkness will follow documented procedures which ensure that the following requirements can be met without natural lighting.

1. Approved handler

The person in charge of the detonation or deflagration ensure that there is an approved handler personally in control of the substance, or that the substance is secured as specified in Regulation 22.

2. Designated use zone

The person in charge of the detonation or deflagration must establish a designated use zone within which such substances are to be detonated.

3. Notification of enforcement officer

At least three working days before the first firing occurs at the place, the person in charge of the detonation or deflagration must:

- (a) notify an enforcement officer of the place where the firing is to occur, the date of the firing, and the time and number of firings, and
- (b) in the case where regular firings are to occur at the place, notify an enforcement officer of the likely frequency of firings per year, and at 12-monthly intervals reconfirm or modify this notification, and
- (c) give the officer sufficient information to enable the officer to contact the person in charge of the detonation and deflagration and the approved handler during normal business hours.

4. Excluding personnel

The person in charge of the detonation or deflagration must ensure that all persons not specifically authorised by the approved handler to be in the designated use zone are excluded, using the following methods:

- a) information must be displayed that:
 - i) warns that a substance is being detonated and that entry is prohibited; and
 - ii) is visible from all points that are 5m from the outer side of the perimeter of the designated use zone; and
 - iii) meets the level of comprehensibility and clarity required for signage in *Part III of the Hazardous Substances (Identification) Regulations 2001*; and
- b) one minute before firing, a distinctive warning sound must be generated that is of sufficient volume to be heard throughout the zone, and at all points that are 5m from the outer side of the perimeter of the zone, by a person with normal hearing; and
- c) a visual check must be made of the zone immediately before firing to ensure that all people not directly involved with the firing have been excluded.

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 2: containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) present
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 6: outdoor firework displays
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 5 Requirements for test certificates for the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance

Relevant Regulations

Regulation 34(2) of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

Test certificates are required to certify that, if documented procedures are followed, an authorised person who is directly involved with the detonation or deflagration of a Class 1 substance (explosive) could be subject to a maximum levels of blast overpressure and heat radiation.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Requirements for test certificate

A test certificate is required to certify the level of blast overpressure and heat radiation that an authorised person who is directly involved with the detonation or deflagration could be subject to.

1. Blast overpressure

The authorised person may be subject to a blast overpressure up to 24 kPa.

2. Heat radiation

The authorised person may be subject to up to 80% of the heat radiation described by the formula $Q = 1.7 + 60t^{-0.9}$

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 2: containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) present
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 6: outdoor firework displays
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 6 Requirements for test certificates for outdoor firework displays

Relevant Regulations

Regulation 40 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

The person in charge of any outdoor pyrotechnic display involving Class 1 category G (pyrotechnic) substances must obtain a test certificate prior to the display to certify that the planning for the proposed display provides that the requirements set out below are met.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Requirements for test certificate

A test certificate is required to certify that the planning for the proposed display specifies that:

1. The approved handler has a certificate of competency for conducting the height of display planned.
2. The boundary of the discharge area is as specified in Regulation 37.
3. The boundary of the exclusion zone is as specified in Regulation 38.
4. Any unfired Class 1 Category G (pyrotechnic) substance will not come into contact with sparks or hot fragments capable of transferring energy at a rate greater than 0.5W/m^2 , unless such sparks or fragments are part of an intended ignition system.
5. There are no substances classified in Class 2, 3, 4, or 5 present in the discharge area unless those substances are protected in such a way that they cannot be ignited by:
 - a) a burning object with a mass of 100g in contact with the protection for 30 seconds,
 - b) the heat able to be generated by the display in the discharge area.

6. The firing circuit of an electric ignition system:
 - a) is insulated from earth and has been tested to ensure continuity where the test current is less than 60 mA, and
 - b) is protected from stray electrical currents of more than 60 mA, and
 - c) satisfies the requirements for protection from electromagnetic radiation as specified in regulation 17, and
 - d) is arranged so that only the approved handler may initiate firing and that each firing sequence requires a positive action.

7. If a thunderstorm approaches a discharge area:
 - a) any handling or preparation of a Class 1 category G substance must cease, and
 - b) all persons must be evacuated to a distance in metres from any container for holding Class 1 category G substances, and any firing positions where Class 1 category G substances are present, of not less than that calculated in accordance with the following formula:

$$D = 10 \times NEQ^{1/3}$$
 Where:
 D is the distance in metres
 NEQ (net quantity of Class 1 substance) is the gross weight of the article less the weight of any construction materials of the article, in kilograms.

8. The number and type of pyrotechnics to be used in the display.

9. The person in charge of the display has obtained prior written agreement for the holding of the display from:
 - a) the New Zealand Fire Service or the New Zealand Rural Fire Authority; and
 - b) if the firing involves heights over 60 m, the agency responsible for air safety in the vicinity of the display.

10. If the firing involves heights over 60m, the agreement with the Fire Service must record that the documented procedures for the display will enable the person in charge of the display to comply with the requirements of Regulation 38(5)(c) and (d).

11. A record of the outdoor pyrotechnic display is prepared that includes:
 - a) a site plan to scale of the discharge area and any exclusion zone; and
 - b) details of arrangements for identifying and securing the discharge area and exclusion zone; and
 - c) the name of the manufacturer, and the size, type, and number of pyrotechnic articles to be used; and
 - d) details of positioning of firing points and mortar tubes, and the methods of firing; and
 - e) the names and responsibilities of all authorised persons operating the display; and
 - f) any incidents that occurred during the display.

12. The requirements of Regulation 43(a), (b), (d), (e), (f), and (i) are met.

Duration of certificate

The test certificate must be obtained not less than three days before the display.

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 2: containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) present
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 7: transfer of Class 1 substances (explosives) in darkness

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 7 Requirements for test certificates for the transfer of Class 1 substances (explosives) in darkness

Relevant Regulations

Regulation 46(3) of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

Test certificates are required to certify that documented procedures for the transfer of a Class 1 substance (explosive) during the hours of darkness meet the requirements of the Regulations without natural lighting.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

The transfer requirements do not apply when the amount of Class 1 substances (explosives) present does not exceed the following quantities:

Hazard classification	Quantities
1.1B, 1.2B, and 1.4B	5 kg
1.1 (other than 1.1B or 1.1C), 1.2, and 1.5	50 kg
1.1C and 1.3 (other than 1.3G)	100 kg
1.3G and 1.4 (other than 1.4S)	200 kg
1.4S	1 000 kg

Requirements for test certificate

A test certificate is required to certify that the transfer of a Class 1 substance (explosive) during the hours of darkness will follow documented procedures which ensure that the following requirements can be met without natural lighting:

1. A designated transfer zone that fully contains all vehicles, ships, aircraft, or other forms of transport involved in the transfer operation is established.
2. There is an approved handler personally in control of the substances being transferred.
3. Emergency management requirements are complied with.
4. The requirements of Regulation 48 are met.

5. The substance quantity limits within the designated transfer zone are complied with.
6. Signage warning of the danger from the presence of Class 1 substances (explosives) is displayed.
7. The signage meets the level of comprehensibility and clarity required for signage in Part III of the *Hazardous Substances (Identification) Regulations 2001*.
8. The signage must be visible from points of access to the designated transfer zone.

See also:

Test certificate requirements:

- TC 1: design of containers securing Class 1 substances (explosives)
- TC 2: containers securing Class 1 substances (explosives)
- TC 3: locations where Class 1 substances (explosives) present
- TC 4: detonation or deflagration of an explosive substance in the hours of darkness
- TC 5: the level of blast overpressure and heat radiation in the detonation or deflagration of an explosive substance
- TC 6: outdoor firework displays

Approved handler requirements:

- AH 1: Class 1 substances (explosives)
- AH 2: detonation or deflagration of Class 1 substances (explosives)
- AH 3: outdoor pyrotechnic displays
- AH 4: indoor special effects displays using pyrotechnics
- AH 5: the transfer of Class 1 substances (explosives)
- AH 6: Class 1 substances (explosives) being transported by road or rail

TC 8 Requirements for test certificates for locations where Class 2.1.1, 2.1.2 or 3.1 substances (flammable gases, aerosols and liquids) present

Relevant Regulations

Regulation 81 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

A test certificate is required to certify that a hazardous substance location or a hazardous substance zone where substances classified in 2.1.1, 2.1.2 or 3.1 (flammable gases, aerosols and liquids) are present complies with the relevant requirements specified in Regulation 81.

Hazardous Substances (Classification) Regulations 2001

Flammable gases, aerosols and liquids are classified in 2.1.1, 2.1.2 or 3.1

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

Does not apply to quantities less than:

<i>Classification</i>		<i>Quantity</i>
2.1.1A and B	flammable gas	100 kg (or 100 m ³ where a permanent gas)
2.1.2A	flammable aerosol	3 000 L (aggregate water capacity)
3.1A, B, and C	flammable liquid	100 L (closed) 25 L (decanting) 5 L (open occasionally) 1 L (if in open container for continuous use)

Does not apply to non-tracked substances located for less than 18 hours.

Does not apply to tracked substances of located for less than two hours.

Requirements for test certificate

A test certificate is required to certify that the location where Class 2.1.1, 2.1.2, or 3.1 substances (flammable gases, aerosols and liquids) are present, or of any place where a hazardous atmosphere zone is required under Regulation 58, meets the following requirements:

1. The person in charge of the hazardous substance location must notify an enforcement officer in the area where the hazardous substance location is, at least 30 working days before the commissioning of the hazardous substance location as a place for accommodating Class 2.1.1, 2.1.2, or 3.1 substances (flammable gases, aerosols and liquids) of:
 - the street address of the place in which the hazardous substance location is located; and
 - the maximum quantity and hazard classification of each Class 2.1.1, 2.1.2, or 3.1 substance (flammable gases, aerosols and liquids) that the hazardous substance location is designed or constructed to accommodate.
2. Where the substance is required to be under the control of an approved handler, the person in charge of the hazardous substance location is an approved handler for such substances, or can demonstrate that a person is available who is an approved handler for such substances.
3. Where the substance is required to be under the control of an approved handler any container or building used to hold the substances is secured so that a person cannot gain access to the substance without keys or other devices for operating locks.
4. Where a hazardous atmosphere zone is required (Regulation 58), it has been established and its extent documented.
5. The substance is not in contact with any substance or material with which it is incompatible, unless the contact is controlled to meet the requirements for planned combustion specified in Regulations 84 and 85.

Hazard classification	Incompatible substances and materials
2.1.1 (flammable gas)	All Class 1 substances (explosives) Class 2.1.2 substances (flammable aerosols) All Class 3 substances (flammable liquid; liquid desensitized explosives) All Class 4 substances (flammable solids) All Class 5 substances (oxidising substances)
2.1.2 (flammable aerosol)	All Class 1 substances (explosives) All Class 3 substances flammable liquid; liquid desensitized explosives) All Class 4 substances (flammable solids) All Class 5 substances (oxidising substances)
3.1 (flammable liquid)	All Class 1 substances (explosives) All Class 2 substances (flammable gases and aerosols) Class 3.2 substances (liquid desensitized explosives) All Class 4 substances (flammable solids) All Class 5 substances (oxidising substances)

6. The location has signage in place as required by the *Hazardous Substances (Identification) Regulations 2001*
7. Where the quantity of substance requires it, Regulations 13, 15, and 17 of the *Hazardous Substances (Emergency Management) Regulations 2001* are complied with.

Duration of Certificate

The test certificate must be renewed at intervals of not more than 12 months, unless on request of the person or persons required to obtain the test certificate the Authority specifies a longer time limit for which the test certificate is valid.

The longer time limit specified by the Authority may not exceed 36 months.

See also:

Approved handler requirements:

AH 7: Class 2, 3 or 4 substances (flammables)

AH 8: Class 2.1.1, 2.1.2, or 3.1 substances (flammable gases, aerosols or liquids)

TC 9 Requirements for test certificates for locations where Class 3.2 or 4 substance (liquid desensitised explosive or flammable solid) present

Relevant Regulations

Regulation 82 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

A test certificate is required to certify that a hazardous substance location where Class 3.2 or 4 substances (liquid desensitised explosives and flammable solids) are present complies with the relevant requirements specified in Regulation 82.

Hazardous Substances (Classification) Regulations 2001

Substances with explosive properties are classified in Class 1.

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

Does not apply to quantities less than:

<i>Classification</i>		<i>Quantity</i>
3.2A, B, and C	Flammable liquid	1 L
4.1.1A	Flammable solid – medium hazard	1 kg
4.1.1B	Flammable solid - low hazard	100 kg
4.1.2A and B	Self-reactive – type A, B	1 kg
4.1.2C and D	Self-reactive – type C, D	25 kg
4.1.2E, F, and G	Self-reactive – type E, F, G	50 kg
4.1.3A, B, and C	Solid desensitized explosives	1 kg
4.2A	Spontaneously combustible – high hazard	1 kg
4.2B and C	Spontaneously combustible – high hazard	25 kg
4.3A	Solids emitting flammable gas - high hazard	1 kg
4.3B	Solids emitting flammable gas - medium hazard	25 kg
4.3C	Solids emitting flammable gas - low hazard	50 kg

Does not apply to non-tracked substances located for less than 18 hours.

Does not apply to tracked substances located for less than two hours.

Requirements for test certificate

A test certificate is required to certify that the location where Class 3.2 or 4 substances (liquid desensitised explosives or flammable solids) are present meets the following requirements:

1. The person in charge of the hazardous substance location must notify an enforcement officer responsible for the enforcement of the Act in the area where the hazardous substance location is located, at least 30 working days before the commissioning of the hazardous substance location as a place for accommodating Class 3.2 or 4 substances (liquid desensitised explosives or flammable solids) of the street address of the place in which the hazardous substance location is located; and the maximum quantity and hazard classification of each Class 3.2 or 4 substances (liquid desensitised explosives or flammable solids) that the hazardous substance location is designed or constructed to accommodate.
2. Where the substance is required to be under the control of an approved handler, the person in charge of the hazardous substance location is an approved handler for such substances, or can demonstrate that a person is available who is an approved handler for such substances.
3. Where the substance is required to be under the control of an approved handler any container or building used to hold the substances is secured so that a person cannot gain access to the substance without keys or other devices for operating locks.
4. Where a temperature control is required (Regulation 72), there is a temperature control plan in place that meets the prescribed requirements.
5. The boundary of the controlled zone complies with barrier, distance, or code requirements.
6. A site plan is available for inspection that shows the physical position, in relation to the legal boundary of the site in which the hazardous substance location or hazardous substance locations are located, of:
 - i) all hazardous substance locations within the place that contain Class 2, 3, or 4 (flammable) substances; and
 - i) all hazardous atmosphere zones and controlled zones within the place.
7. Where a hazardous atmosphere zone is required (Regulation 58), it has been established and maintained in accordance with that Regulation.
8. The requirements to reduce the likelihood of unintended ignition (Regulations 73 to 76) are met.
9. The location has signage in place as required by the *Hazardous Substances (Identification) Regulations 2001*.
10. Where the quantity of substance requires it, Regulations 13, 15, and 17 of the *Hazardous Substances (Emergency Management) Regulations 2001* are complied with.

Duration of certificate

The test certificate must be renewed at intervals of not more than 12 months, unless on request of the person or persons required to obtain the test certificate the Authority specifies a longer time limit for which the test certificate is valid.

The longer time limit specified by the Authority may not exceed 36 months.

See also:

Approved handler requirements:

AH 7: Class 2, 3 or 4 substances (flammables)

TC 10 Requirements for test certificates for locations where Class 5.1.1 or 5.1.2 substance (oxidiser) present

Relevant Regulations

Regulation 98 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

A test certificate is required to certify that a hazardous substance location where Class 5.1.1 or 5.1.2 substances (oxidisers) are present complies with the relevant requirements specified in Regulation 99, or, where applicable, Regulation 100.

Hazardous Substances (Classification) Regulations 2001

Oxidising substances are classified in Class 5.1.1 or 5.1.2

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand.

Exemptions

The requirements do not apply to a fixed location where the following quantities and types of substance classified in Class 5.1 (oxidising substances) are present:

Less than:

- (a) 50 kg or 50 litres of Class 5.1.1A substance (oxidising – high hazard), or
- (b) 500 kg or 500 litres of Class 5.1.1B 1A substance (oxidising – medium hazard), or
- (c) 5000 kg of Class 5.1.1C substance (oxidising – low hazard), or
- (d) 250 kg or 200 m³ of Class 5.1.2A substance (oxidising gas).

Does not apply to non-tracked substances located for less than 18 hours.

Does not apply to tracked substances located for less than two hours.

Requirements for test certificate

A test certificate is required to certify that the location where Class 5.1.1 and 5.1.2 substances (oxidisers) are present meets the following requirements:

1. The person in charge of the hazardous substance location must notify an enforcement officer responsible for the enforcement of the Act in the area where the hazardous substance location is, at least 30 working days before the commissioning of the hazardous substance location as an area for accommodating Class 5.1.1 and 5.1.2 substances (oxidisers) of the street address of the place where the hazardous substance location is; the maximum quantity and hazard classification of each Class 5.1.1 and 5.1.2 substances (oxidisers) that the hazardous substance location is designed or constructed to accommodate; and any manufacturing or use involving Class 5.1.1 and 5.1.2 substances (oxidisers) that may occur at the location.

2. The person in charge of the hazardous substance location is an approved handler for such substances, or can demonstrate that a person is available who is an approved handler for such substances.
3. Any container or building used to hold the substances is secured so that a person cannot gain access to the substance without keys or other devices for operating locks.
4. A site plan is available for inspection that shows the physical position, in relation to the legal boundary of the site in which the hazardous substance location is situated, of:
 - i) all hazardous substance locations within the place that contain Class 5.1.1 and 5.1.2 substances (oxidisers), and
 - ii) all controlled zones within the place.
5. The requirements of Regulations 95(1)(a) to (d) and (f) and 95(2) are complied with.
6. A controlled zone around the location is established in accordance with Regulation 97.
7. Any fixed structure or installed equipment within the location is constructed from compatible material and is not an ignition source.
8. Any equipment or clothing present complies with the requirements of Regulations 92 and 103.
9. There are documented procedures to ensure that the requirements of Regulation 95(1)(e) are complied with.
10. The location has signage in place as required by the *Hazardous Substances (Identification) Regulations 2001*.
11. Where the quantity of substance requires it, Parts III and IV of the *Hazardous Substances (Emergency Management) Regulations 2001* are complied with.

In addition, if the location is one where the Class 5.1.1 and 5.1.2 substances (oxidisers) are manufactured or used:

12. There are documented procedures to ensure that every person leaving the location is free of any Class 5.1.1 and 5.1.2 substances (oxidisers).

Duration of certificate

The test certificate must be renewed at intervals of not more than 12 months, unless on request of the person or persons required to obtain the test certificate the Authority specifies a longer time limit for which the test certificate is valid.

The longer time limit specified by the Authority may not exceed 36 months.

See also:

AH 9: Class 5.1.1 and 5.1.2 substances (oxidisers)

TC 11 Requirements for test certificates for locations where Class 5.2 substance (organic peroxide) present

Relevant Regulations

Regulation 120 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

Test certificate that certifies hazardous substance location where Class 5.2 substances (organic peroxides) are present complies with the relevant requirements specified in Regulation 121, or, where applicable, Regulation 122.

Hazardous Substances (Classification) Regulations 2001

Organic peroxides are classified in Class 5.2

For definitions of the various subclasses refer to the above regulations and/or the *User Guide to HSNO Thresholds and Classifications* available on the ERMA New Zealand website www.ermanz.govt.nz or from ERMA New Zealand

Exemptions

The requirements do not apply to a fixed location where the following quantities and types Class 5.2 substances (organic peroxides) are present:

Less than:

- a) 10 kg of Class 5.2A or 5.2B (organic peroxides - type A or B) substance; or
- b) 25kg of Class 5.2C or 5.2D (organic peroxides - type C or D) substance; or
- c) 100 kg of Class 5.2E or 5.2F (organic peroxides - type E or F) substance.

Requirements for test certificate

A test certificate is required to certify that the location where Class 5.2 (organic peroxide) substances are present meets the following requirements:

1. The person in charge of the hazardous substance location must notify an enforcement officer where the hazardous substance location is, at least 30 working days before the commissioning of the hazardous substance location as an area for accommodating Class 5.2 substances (organic peroxides) of the street address of the place in which the hazardous substance location is; the maximum quantity and hazard classification of each Class 5.2 (organic peroxide) substance Class 5.2 substances (organic peroxides) that the hazardous substance location is designed or constructed to accommodate; and any manufacturing or use involving Class 5.2 substances (organic peroxides) that may occur at the location.
2. The person in charge of the hazardous substance location is an approved handler for Class 5.2 substances (organic peroxides), or can demonstrate that a person is available who is an approved handler for such substances.

3. Where any Class 5.2A, 5.2B, 5.2C, or 5.2D (organic peroxides - type A, B, C or D) substance is required to be secured, it must be secured in a container (not being packaging) the outer case of which has:
 - a) a compressive strength of 500 kN/m² ; and
 - b) a shear strength of 750 kN/m² ; and
 - c) locking arrangements for any entry, or for any part of the container through which access is gained to the contents, that have a tensile strength of 1250 kN/m².
4. Where any Class 5.2E or 5.2F (organic peroxides - type E or F) substance is required to be secured, any container or building used to hold the substance must be secured so that a person cannot gain access to the substance without tools, keys, or any other device used for operating locks.
5. A site plan is available for inspection that shows the physical position, in relation to the legal boundary of the site in which the hazardous substance location is situated, of:
 - i) all hazardous substance locations within the place that contain Class 5.2 substances; and
 - ii) all controlled zones within the place.
6. The requirements to reduce likelihood of unintended combustion or explosion (Regulations 117(1)(a) to (d) and (f) and 117(2)) are met.
7. A controlled zone is established around the location in accordance with Regulation 119.
8. Any fixed structure or installed equipment within the location is constructed from compatible material and is not an ignition source.
9. Any equipment or clothing present complies with the requirements of Regulations 112 and 126.
10. There are documented procedures to ensure that the requirements of Regulation 117(1)(e) are complied with.
11. The location has signage in place as required by the *Hazardous Substances (Identification) Regulations 2001*.
12. Where the quantity of substance requires it, Parts III and IV of the *Hazardous Substances (Emergency Management) Regulations 2001* are complied with.

In addition, if the location is one where the Class 5.2 substances (organic peroxide) is manufactured or used:

13. Every package or container containing a Class 5.2 substances (organic peroxide) must be kept closed except for when the substance is being taken from or put into its package or container.
14. No person is exposed to a Class 5.2 substance (organic peroxide) unless protected by clothing or equipment that meets the requirements of Regulation 126.

15. There are documented procedures to ensure that every person leaving the hazardous substance location is free of such substances.
16. A site plan shows that the location is separated from any other hazardous substance location by:
 - a) a distance of not less than that specified for incompatible substances in tables 5 and 6 in Schedule 5; or
 - b) a wall with a fire resistance rating of 120/120/120 minutes.

Duration of certificate

The test certificate must be renewed at intervals of not more than 12 months, unless on request of the person or persons required to obtain the test certificate the Authority specifies a longer time limit for which the test certificate is valid.

The longer time limit specified by the Authority may not exceed 36 months.

See also:

Approved handler requirements:

AH 10: Class 5.2 substances (organic peroxides)

TC 12 Requirements for test certificates for fireworks

Relevant Regulations

Regulation 10 of the Hazardous Substances (Fireworks) Regulations 2001

Test certificate that certifies that a consignment or batch of fireworks complies with the relevant requirements specified in Regulation 11.

Test Certificate Compliance

1. A batch of fireworks complies with the test certificate requirements if:
 - a) not less than 10 fireworks are selected at random from the batch and each of the selected fireworks complies with the requirements; or
 - b) in a case where 1 of the fireworks selected does not comply with requirements (c), (f), (g) or (h) below, not less than 10 additional fireworks are selected at random from the same batch and each of the selected fireworks, when test complies
2. An imported consignment of fireworks complies with the test certificate requirements if:
 - a) not less than 10 fireworks are selected at random from those fireworks of that type within the consignment and each of the selected fireworks complies with the requirements; or
 - b) in a case where one of the fireworks selected does not comply with requirements (c), (f), (g) or (h) below, not less than 10 additional fireworks are selected at random from the same consignment, and each of the selected fireworks, when test complies.

Exemptions

The Authority may waive the requirement that a batch of fireworks be tested for compliance with (b) below, if a batch of fireworks containing the same type of fireworks has earlier been tested and found to comply.

The Authority may waive the requirement that an imported consignment of fireworks be tested for compliance with (b) below, if a batch of fireworks containing the same type of fireworks has earlier been tested and found to comply.

Test certificate requirements

Test certificate will certify that the following requirements have been met for a consignment or batch of fireworks.

1. The objects in the consignment or batch are fireworks.
2. The fireworks:
 - a) do not contain more than 40g of pyrotechnic substance.
 - b) do not include any chloride mixed with sulphur, phosphorus, or any sulphide (unless the fireworks are and amorce containing more than 5mg of pyrotechnic substance).
 - c) do not include any toxic substances of classifications 6.1A, 6.1B or 6.1C (acutely toxic) other than traces of antimony, arsenic, cadmium, chromium, lead, mercury, nickel, selenium, zinc, and their compounds.
 - d) are constructed in a manner that does not allow pyrotechnic substances to escape at any time.
 - e) do not have their own means of ignition.
 - f) do not, if the fireworks are shaped as hand-held fireworks, discharge fire and burst the casing following ignition.
 - g) have instructions for use on the outer case, or packet if there are no outer cases. These instructions comply with Regulations 34 and 35 of the *Hazardous Substances (Identification) Regulations 2001*.
 - h) when used in accordance with the instructions for the use of the fireworks, do not create a hazard by discharging hot or burning material.
 - i) have a fuse burning time of not less than three seconds and no more than 11 seconds.