

# Site and Storage Conditions for Class 3.1 Flammable Liquids

## Contents

Introduction.....	1
SITE AND STORAGE CONDITIONS .....	2
Part 1 General Flammability Conditions .....	2
Part 2 Conditions Relating to the Unintended Ignition of Flammable Liquids not Located at Hazardous Substance Location .....	16
Part 3 Conditions Relating to the Unintended Ignition of Flammable Liquids Present at Hazardous Substance Location .....	22
Part 4 Calculation of Separation Distances .....	28
Part 5 Existing Type E Buildings – Grand-Parenting.....	29
Part 6 Conditions for Stationary Container Systems .....	30
Part 7 Emergency Management.....	30
Part 8 Signage.....	38
INTERPRETATION .....	40
SOURCE REGULATIONS AND CONTROLS .....	49

## Introduction

This document sets out the site and storage conditions for class 3.1 flammable liquids. These substances may also have toxic, corrosive and/or ecotoxic properties (HSNO classes 6, 8 and/or 9), but no other hazardous properties.

The conditions set out in this document are incorporated into a group standard by reference, and form part of that group standard. A substance must comply with the conditions in this document as part of the group standard approval.

This document has been compiled from the following:

- Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001; and
- Hazardous Substances (Emergency Management) Regulations 2001; and
- Hazardous Substances (Identification) Regulations 2001; and
- Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.

Further information on the source of each condition is given in the section “Source Regulations and Controls”.

If any trigger quantity from any of the above regulations has been amended for a specific substance (e.g. petrol) by the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004, or any other Transfer Notice, that amended trigger quantity is not given in this document.

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# Site and Storage Conditions

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## Part 1 General Flammability Conditions

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### 1 Quantities

- (1) In determining whether the requirements for an approved handler, a hazardous substance location, a transit zone, or a test certificate are activated, the relevant quantity has been exceeded if the quantity-ratio sum is greater than 1 when determined in accordance with the following formula:

$$\text{quantity-ratio sum} = \Sigma [qp_i/qa_i]$$

where—

$\Sigma$  is the symbol for summation (in this case, summation of the calculated ratios for all flammable hazard classifications present for class 2, 3 and 4 substances)

$qp_i$  is the quantity of substance with a particular flammable hazard classification present

$qa_i$  is the quantity of substance of that flammable hazard classification that activates the relevant requirement

- (2) Where a quantity of gas is specified as cubic metres (m<sup>3</sup>), this volume is determined by taking the contents and conditions of the gas held in a container and then calculating the volume that the gas would occupy at 15°C and 101.3 kPa absolute pressure. Where the quantity of gas is specified in kilograms, this refers to the net weight of the gas in liquefied form as held in its container.
- (3) When considering quantities under subclauses (1) and (2) the quantities of all hazardous substances must be taken into account, howsoever those substances were approved under the Act.

### 2 Test certification

- (1) 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 which the test certificate is valid.
- (2) The longer time limit specified by the Authority may not exceed 36 months.
- (3) When specifying the time limit, the Authority must take into account—
- (a) the maximum quantities and types of hazardous substances present or likely to be present at the relevant place; and
  - (b) the review and monitoring systems in place for the management of those substances; and

- (c) the compliance history of the organisation concerned and of the persons in charge of the substances.
- (4) Where there is a requirement to obtain more than one test certificate—
- (a) the test certifier may, on request of the person or persons required to obtain the test certificates, examine at the same time any or all of those matters that require test certification for which the certifier is competent to certify; and
  - (b) where more than one matter has been examined, the report provided by the certifier must indicate whether or not the respective requirements have been met and must give the reasons for any failure to meet those requirements; and
  - (c) a single test certificate may be issued for any or all of those matters where the requirements have been met.

### 3 General limits on flammable liquids

Where a flammable liquid is present at a place in a quantity that exceeds that specified for the relevant substance in Table 1 for more than—

- (a) 18 hours, in the case of a 3.1B or 3.1C flammable liquid; or
- (b) 2 hours, in the case of a 3.1A flammable liquid—

that flammable liquid must be held at a hazardous substance location or, if applicable, at a transit depot.

**Table 1. Quantities of flammable liquids that activate hazardous substance location and transit depot requirements**

HSNO classification	Quantity beyond which conditions apply for closed containers	Quantity beyond which conditions apply when use occurring in open containers
3.1A	20 L	20 L
3.1B	100 L in containers greater than 5 L 250 L in containers up to and including 5 L	50 L 50 L
3.1C	500 L in containers greater than 5 L 1,500 L in containers up to and including 5 L	250 L 250 L

### 4 Requirement to establish a hazardous atmosphere zone

At any place containing a flammable liquid in quantities in excess of those specified in Table 2, the person in charge of the flammable liquid must ensure that a hazardous atmosphere zone is established that complies with—

- (a) AS/NZS 2430.3; or
- (b) AS/NZS 60079.10: 2004; or
- (c) a code of practice approved by the Authority that specifies hazardous atmosphere zones equivalent to the requirements specified in subclauses (a) and (b) and takes into account the risk of the presence of flammable materials.

**Table 2. Quantities of flammable liquids that activate hazardous atmosphere zone**

HSNO classification	Minimum quantity of flammable liquid
3.1A, 3.1B and 3.1C	100 L (closed) 25 L (decanting) 5 L (open occasionally) 1 L (if in open container for continuous use)

## **5 Application of legislation to electrical systems located in hazardous atmosphere zones**

- (1) Where any electrical installation or any electrical appliance within the scope of the Electricity Regulations 1997 is located within a hazardous atmosphere zone, the conditions imposed on that installation or appliance under the Act are the same as the controls that are included in those parts of the Electricity Act 1992, and regulations, codes, and standards made or recognised under that Act, that relate to hazardous areas.
- (2) Where any electrical system is located within an underground mine, the conditions imposed on that electrical system under the Act are the same as the controls that are included in those parts of the Health and Safety in Employment (Mining—Underground) Regulations 1999 that relate to gassy mines.
- (3) Where electrical equipment is installed on a ship, vessel, or boat (other than a pleasure vessel containing connectible installations), the conditions imposed on that electrical equipment under the Act are the same as the controls that are included in those parts of the Maritime Rules made under the Maritime Transport Act 1994 that relate to hazardous areas.
- (4) Where electrical equipment is installed on any train, locomotive, tram, or trolley bus, the conditions imposed on that electrical equipment under the Act are the same as the controls that are included in those parts of the Transport Services Licensing Act 1989 or the Railways Act 2005 or rules made under the Land Transport Act 1998 that relate to hazardous areas.
- (5) Where any electrical equipment is installed on an aircraft that is under the jurisdiction of the Civil Aviation Rules, the conditions imposed on that electrical equipment under the Act are the same as the controls that are included in those parts of the Civil Aviation Rules that relate to hazardous areas.
- (6) Where any electrical equipment is used within a hazardous atmosphere zone around an aircraft but is not installed on the aircraft, the conditions imposed on that electrical equipment under the Act are the same as the controls that are included in those parts of the Electricity Act 1992, and regulations, codes, and standards made or recognised under that Act, that relate to hazardous areas.
- (7) For the purposes of subclause (1), the terms electrical installation, electrical appliance, and hazardous area have the meanings given to them in the Electricity Act 1992.
- (8) For the purposes of subclause (2), the terms electrical system and gassy mine have the meanings given to them in the Health and Safety in Employment (Mining—Underground) Regulations 1999.

## **6 Requirements to reduce likelihood of unintended ignition of flammable liquids**

- (1) Unless a flammable liquid is intentionally burned, in circumstances where any air or oxygen is present with such a flammable liquid the person in charge of the substance must—
  - (a) elect to manage the flammable liquid under the sets of conditions specified in any one of clauses 7, 9, 11, 13, and 15; and
  - (b) where clause 7 is elected, manage the flammable liquid under the provisions specified in subclause (2) or subclause (6) of that clause; and
  - (c) where clause 9 is elected, manage the flammable liquid under the provisions specified in either subclause (3) or subclause (4) of that clause; and
  - (d) where clause 11 is elected, manage the flammable liquid under the provisions specified in either subclause (3) or subclause (4) of that clause; and
  - (e) ensure that the requirements of the chosen clauses are complied with in full; and
  - (f) record which clause the flammable liquid is being managed under, and have that record available for inspection.
- (2) Despite the requirements of Part 3 (Approved Handler) of Schedule 1 to the Group Standard relating to a class 3.1 substance, any person handling a flammable liquid under any of clauses 9(4), 11, 13, and 15 must be an approved handler for that substance.

## **7 Circumstances involving control of ignition sources available to flammable liquids**

- (1) Every person who elects to manage a flammable liquid under clause 6(1), by controlling ignition sources (but not the proportion of flammable vapour or gas to air), must ensure that in any place the flammable liquid is located the requirements of this clause are met.
- (2) Where a flammable liquid is within any hazardous atmosphere zone—
  - (a) the temperature of the flammable liquid and the temperature of any surface in contact with the flammable liquid must not exceed 80% of the auto-ignition temperature in °C for that flammable liquid; and
  - (b) any permanently fixed equipment or part of such equipment or containers must be effectively electrically bonded and earthed so that the maximum resistance to earth is—
    - (i) 1 M $\Omega$ , for components that have an electrical resistance greater than or equal to 1 M $\Omega$ ; and
    - (ii) 10  $\Omega$ , for components that have an electrical resistance of between 10  $\Omega$  and 1 M $\Omega$ ; and

- (c) the flammable liquid must be managed under one of the three sets of provisions set out in subclauses (3), (4), and (5) respectively.

(3) SET OF PROVISIONS 1

There must be no ignition source present, unless it can be shown that any release of spark energy would transfer to the mixture of vapour or gas to air less than 10% of the minimum ignition energy of the flammable liquid in air.

(4) SET OF PROVISIONS 2

- (a) there must be no ignition source present, unless it can be shown that any release of spark energy would transfer to the mixture of vapour or gas to air less than 25% of the minimum ignition energy of the flammable liquid in air; and
- (b) persons managing flammable liquids in accordance with subclause (4)(a) must operate in accordance with a code of practice approved under section 78 of the Act as meeting the requirements of that subclause for the purposes of this subclause.

(5) SET OF PROVISIONS 3

In any situation except situations covered by clause 5, any ignition source located in a hazardous atmosphere zone must be protected in such a way that, in the circumstances in which it is installed (including the presence of dust and particulate matter), it cannot ignite any gas/air mixture or vapour/air mixture formed from the flammable liquids present.

- (6) At any place where the quantities of flammable liquids present are not sufficient to require the establishment of a hazardous atmosphere zone but where—

- (a) the concentration of vapour or gas may exceed 25% of the LEL; and
- (b) flammable liquids are present in quantities greater than 10% of that required to trigger the hazardous atmosphere zone requirements—

then the following requirements apply:

- (c) there must be no ignition source present, unless it can be shown that any release of spark energy would transfer to the mixture of vapour or gas to air less than 10% of the minimum ignition energy of the flammable liquid in air; and
- (d) the temperature of the flammable liquid, or the temperature of any surface in contact with the flammable liquid must not exceed 80% of the auto-ignition temperature for that flammable liquid.

## **8 Methods of complying with clause 7**

- (1) In the case of an electrical ignition source, compliance with one of, or where applicable a combination of, the explosion-protection techniques listed in Table 2.1 of AS 2380.1: 1989 meets the requirements of clause 7(5).
- (2) The requirements of clause 7(2)(a) are met if either—

- (a) there is compliance with AS/NZS 2381.1: 2005 relating to the matters described in clause 7(2)(a); or
  - (b) any equipment and any surface in contact with the flammable liquid conform to the temperatures given in Table 3, and the temperature of the flammable liquid is kept below 40°C.
- (3) Compliance with AS/NZS 1020: 1995 meets the requirement of clause 7(2)(b) for the dissipation of static electricity from components that have an electrical resistance of between 10 Ω and 1 MΩ.

**Table 3. Maximum surface temperature of equipment that may contact flammable liquids of known auto-ignition temperatures**

Auto-ignition temperature	Required temperature of surfaces in contact with mixture of flammable vapour evolving from substances and air
More than 562.5°C	<450°C
375 – 562.5°C	<300°C
250 – 375°C	<200°C
169 – 250°C	<135°C
125 – 169°C	<100°C
Less than 125°C	<85°C

## 9 Circumstances involving control of both proportion of vapour or gas to air and amount of energy available

- (1) Every person who elects to manage a flammable liquid under clause 6(1), by controlling both the proportion of flammable vapour or flammable gas to air, and the amount of energy available, must ensure that in any place the flammable liquid is located the requirements of this clause are met.
- (2) A flammable liquid must be managed under one of the two sets of provisions set out in subclauses (3) and (4) respectively.
- (3) SET OF PROVISIONS 1
  - (a) The proportion of flammable vapour to air at all times must be below 25% of the LEL or above 4 times the UEL; and
  - (b) either—
    - (i) there must be no ignition source present, unless it can be shown that any release of spark energy would transfer to the mixture of vapour to air less than 25% of the minimum ignition energy of the flammable liquid in air; or
    - (ii) in any situation except situations covered by clause 5, any ignition source located in an area where flammable vapour is present at greater than 10% of the LEL must be protected in such a way that, in the circumstances in which it is installed (including the presence of dust and particulate matter), it cannot ignite any vapour/air mixture formed from the flammable liquids present.

(4) SET OF PROVISIONS 2

- (a) the proportion of flammable vapour to air must at all times be below 50% of the LEL; and
  - (b) there must be a system in place to continuously monitor and control the concentration of vapour to meet the requirements of subclause (4)(a); and
  - (c) persons managing flammable liquids according to this subclause must operate in accordance with a code of practice approved under section 78 of the Act as the requirements of this subclause; and
  - (d) either—
    - (i) there must be no ignition source present, unless it can be shown that any release of spark energy would transfer to the mixture of vapour to air less than 50% of the minimum ignition energy of the flammable liquid in air; and there is a system in place to continuously monitor and control the amount of ignition energy present to meet the requirements of this subclause; or
    - (ii) in any situation except situations covered by clause 5, any ignition source located in an area where flammable vapour is present at greater than 10% of the LEL must be protected in such a way that, in the circumstances in which it is installed (including the presence of dust and particulate matter), it cannot ignite any vapour/air mixture formed from the flammable liquids present.
- (5) The temperature of the flammable liquid and the temperature of any surface in contact with the flammable liquid must not exceed 80% of the auto-ignition temperature for that flammable liquid.
- (6) At any place where a flammable liquid is present in quantities greater than that specified in Table 2 (see clause 4), any permanently fixed equipment or container or part of any such equipment or container must be electrically bonded and earthed so that the maximum allowable resistance to earth is—
- (a) 1 M $\Omega$ , for dissipation of static electricity from components that have an electrical resistance greater than or equal to 1 M $\Omega$ ; and
  - (b) 10  $\Omega$ , for the dissipation of static electricity from components that have an electrical resistance of less than 1 M $\Omega$ .

**10 Methods of complying with clause 9**

- (1) In the case of an electrical ignition source, compliance with one of, or where applicable a combination of, the explosion-protection techniques listed in Table 2.1 of AS 2380.1: 1989 meets the requirements of clause 9(3)(b)(ii) and (4)(d)(ii).
- (2) The requirements of clause 9(5) are met if either—
  - (a) there is compliance with AS/NZS 2381.1: 2005 relating to the matters described in clause 9(5); or

- (b) any equipment and any surface in contact with the flammable liquid conform to the temperatures given in Table 3 (see clause 8), and the temperature of the flammable liquid is kept below 40°C.
- (3) Compliance with AS/NZS 1020: 1995 is a means of meeting the requirements of clause 9(6) for the dissipation of static electricity from components that have an electrical resistance of between 10 Ω and 1 MΩ.

## **11 Circumstances involving control of proportion of vapour or gas to air, but not level of energy**

- (1) Every person who elects to manage a flammable liquid under clause 6(1), by controlling the proportion of vapour or gas to air (but not the level of energy) must ensure that, in any place such a flammable liquid is located, the requirements of this clause are met.
- (2) A flammable liquid must be managed under one of the two sets of provisions set out in subclauses (3) and (4).
- (3) SET OF PROVISIONS 1

The proportion of vapour to air must at all times be kept below 10% of the LEL or above 10 times the UEL.

- (4) SET OF PROVISIONS 2

Where the proportion of vapour to air may be greater than 10% of the LEL or less than 10 times the UEL—

- (a) the proportion of vapour to air must at all times be kept either below 50% of the LEL or above 2 times the UEL; and
- (b) there must be a system in place to continuously monitor and control the concentration of vapour to meet the requirements of subclause (4)(a); and
- (c) persons managing flammable liquids according to this subclause must operate in accordance with a code of practice approved under section 78 of the Act as meeting the requirements of this subclause.

## **12 Methods of complying with clause 11**

Compliance with sections 5-2 and 5-4 of NFPA 86, Standard for Ovens and Furnaces, 1999, National Fire Protection Association, USA, relating to the matters described in clause 11(4), is a means of meeting the requirements of clause 11(4).

## **13 Circumstances where flammable vapour or gas present in atmosphere where proportion of oxygen in atmosphere (by volume) greater than 20.9%**

- (1) Every person who elects to manage the flammable vapour of a flammable liquid under clause 6(1), within an atmosphere where the proportion of oxygen is greater than 20.9% volume for volume, must ensure that, in any place where such a flammable liquid is located, the requirements of this clause are met.

- (2) A RLEL<sub>(O)</sub> and a RUEL<sub>(O)</sub> applicable to the proportion of flammable vapour to oxygen present must be established by the person in charge of the substance, and—
  - (a) the RLEL<sub>(O)</sub> and the RUEL<sub>(O)</sub> must be available for inspection at any time; and
  - (b) at all times the proportion of vapour of the liquid to oxygen in the atmosphere must be either below 25% of the RLEL<sub>(O)</sub> or above 4 times the RUEL<sub>(O)</sub>; and
  - (c) to meet the requirements of subclause (2)(b), there must be a system in place to continuously monitor and control—
    - (i) the proportion of oxygen present; and
    - (ii) the proportion of vapour to oxygen present.
- (3) In a place where the flammable liquid is present in concentrations greater than 10% RLEL<sub>(O)</sub>, the requirements of either of the following subclauses must be met:
  - (a) the person in charge must establish a revised minimum ignition energy for the maximum proportion of oxygen to air expected within the system, and—
    - (i) where such a revised minimum ignition energy is established, it must be available for inspection at any time; and
    - (ii) there must be no item capable of generating a flame or spark present unless it can be shown that any release of spark energy would transfer to the mixture of vapour to oxygen-enriched air less than 25% of the revised minimum ignition energy; or
  - (b) in any situation except situations covered by clause 5, any ignition source located within the area where flammable vapour is present must be protected in such a way that, in the circumstances in which it is installed (including the presence of dust and particulate matter), it cannot ignite any vapour/air mixture formed from the flammable liquids present.
- (4) A revised auto-ignition temperature must be established for the maximum proportion of oxygen to air expected to be experienced within the system, and—
  - (a) the revised auto-ignition temperature must be available for inspection at any time; and
  - (b) at all times the temperature of the flammable liquid and of any surface in contact with the flammable liquid must be below 80% of the revised auto-ignition temperature for that flammable liquid and oxygen level; and
  - (c) there must be a system in place to continuously monitor and control the temperature of the flammable liquid and of any surface in contact with the flammable liquid to meet the requirements of subclause (4)(b).
- (5) At any place where a flammable liquid is present in quantities greater than that specified in Table 2 (see clause 4), any permanently fixed equipment or container at the place, or part of such equipment or container, must be electrically bonded and earthed so that the maximum allowable resistance to earth is—

- (a) 1 M $\Omega$ , for gradual dissipation of static electricity from components that have an electrical resistance greater than or equal to 1 M $\Omega$ ; and
  - (b) 10  $\Omega$ , for the dissipation of static electricity from components that have an electrical resistance of less than 1 M $\Omega$ .
- (6) The flammable liquid must be managed in accordance with a code of practice approved under section 78 of the Act as a method for meeting the requirements specified in subclauses (3) to (5).

#### **14 Methods of complying with clause 13**

Compliance with AS/NZS 1020: 1995 is a means of meeting the requirements of clause 13(5)(b).

#### **15 Circumstances where flammable vapour may be present and proportion of oxygen in atmosphere (by volume) controlled so as to be below 20.9%**

- (1) Every person who elects to manage a flammable vapour of a liquid under clause 6(1), within an atmosphere where the proportion of oxygen present is controlled so as to be below 20.9% (by volume), must ensure that in any place where such a flammable liquid is located the requirements of this clause are met.
- (2) In the place, the person in charge of the flammable liquid must ensure that either—
  - (a) at all times the proportion of flammable vapour of the liquid to air, is either below 25% of the LEL or above 4 times the UEL; or
  - (b) an RLEL<sub>(O)</sub> and RUELEL<sub>(O)</sub> is established applicable to the range of proportions of flammable vapour of the liquid to oxygen present, in which case—
    - (i) that RLEL<sub>(O)</sub> and RUELEL<sub>(O)</sub> must be available for inspection at any time; and
    - (ii) at all times the proportion of vapour to oxygen in the atmosphere must be either below 25% of the RLEL<sub>(O)</sub>, or above 4 times the RUELEL<sub>(O)</sub>; and
    - (iii) there must be a system in place to continuously monitor and control both the proportion of oxygen to air present, and the proportion of vapour to oxygen present, to meet the requirements of subclause (2)(b)(ii).
- (3) In the place, the person in charge of the flammable liquid must ensure that—
  - (a) there is no ignition source present unless it can be shown that any release of spark energy would transfer to the mixture of vapour to air less than 25% of the minimum ignition energy; or
  - (b) in any situation except situations covered by clause 5, any ignition source located in the area where flammable vapour is present is protected in such a way that, in the circumstances in which it is installed (including presence of dust and particulate matter), it cannot ignite any vapour/air mixture formed from the flammable liquids present.

- (4) In the place, the person in charge of the flammable liquid must ensure that either—
  - (a) the temperature of the flammable liquid and of any surface in contact with the flammable liquid does not exceed 80% of the auto-ignition temperature for that flammable liquid; or
  - (b) a revised auto-ignition temperature is established for the range of proportions of oxygen expected to be present, in which case—
    - (i) the revised temperature must be available for inspection at any time; and
    - (ii) at all times the temperature of the flammable liquid and of any surface in contact with the flammable liquid must be below 80% of the revised auto-ignition temperature; and
    - (iii) there must be a system in place to continuously monitor and control the proportion of oxygen to air present, and the temperature of the flammable liquid and the temperature of any surface in contact with the flammable liquid, to meet the requirements of subclause (4)(b)(ii).
- (5) At any place where a flammable liquid is present in quantities greater than that specified in Table 2 (see clause 4), any permanently fixed equipment or container at the place, or part of any such equipment or container, must be electrically bonded and earthed, so that the maximum allowable resistance to earth is—
  - (a) 1 M $\Omega$ , for dissipation of static electricity from components that have an electrical resistance greater than or equal to 1 M $\Omega$ ; and
  - (b) 10  $\Omega$ , for the dissipation of static electricity from components that have an electrical resistance of less than 1 M $\Omega$ .

## **16 Methods of complying with clause 15**

- (1) In the case of an electrical ignition source, compliance with any one of the explosion-protection techniques, or a combination of explosion-protection techniques, listed in Table 2.1 of AS 2380.1: 1989 relating to matters described in clause 15(3)(b) are a means of meeting the requirements of clause 15(3)(b).
- (2) The requirements of clause 15(4) are met if either—
  - (a) there is compliance with AS/NZS 2381.1: 2005 relating to the matters described in clause 15(4); or
  - (b) any equipment and any surface in contact with the flammable liquid conform to the temperatures given in Table 3 of clause 8, and the temperature of the flammable liquid is kept below 40°C.
- (3) Compliance with AS/NZS 1020: 1995 is a means of meeting the requirements of clause 15(5)(b).

## **17 Segregation requirements for incompatible substances**

- (1) Except where the ignition of a flammable liquid is intended, the person in charge of a flammable liquid must ensure that—

- (a) the flammable liquid is not in contact with any substance or material with which it is incompatible; and
  - (b) packages of incompatible substances are held separately.
- (2) For the purpose of this clause, substances or materials specified in Table 4 are incompatible with flammable liquids.

**Table 4. Substances and materials incompatible with flammable liquids**

Incompatible substances and materials
Class 1 substances
Class 2 substances
Class 3.2 substances
Class 4 substances
Class 5 substances

- (3) This clause does not apply to substances that are—
- (a) located on a vehicle, ship, or aircraft; and
  - (b) segregated in accordance with the Land Transport Rules, the Maritime Rules, or the Civil Aviation Rules, as the case may be.

## 18 Requirement to establish hazardous substance location

- (1) The person in charge of a place where any 3.1A, 3.1B or 3.1C flammable liquid is located must establish in that place one or more hazardous substance locations where such flammable liquids are to be situated if the flammable liquid is present—
- (a) in a quantity exceeding that specified for in it Table 1 (see clause 3); and
  - (b) for a period exceeding—
    - (i) 18 hours, in the case of a 3.1B or 3.1C flammable liquid; or
    - (ii) 2 hours, in the case of a 3.1A flammable liquid.
- (2) 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 flammable liquids, of—
- (a) the street address of the place in which the hazardous substance location is located; and
  - (b) the maximum quantity and hazard classification of each flammable liquid that the hazardous substance location is designed or constructed to accommodate.
- (3) The person in charge of the hazardous substance location must ensure that, where a Group Standard requires a flammable liquid to be under the control of an approved handler, the approved handler requirements of Part 3 (Approved Handler) of Schedule 1 of that Group Standard relating to a class 3.1 substance are met.

- (4) The person in charge of the hazardous substance location must ensure that—
- (a) where a test certificate is required under clause 19, a test certificate is obtained that certifies that the requirements of clause 19 are met; and
  - (b) 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 flammable liquids; and
    - (ii) all hazardous atmosphere zones and controlled zones within the place; and
  - (c) where required under clause 4, a hazardous atmosphere zone is established and maintained in accordance with that clause.

**19 Test certification requirements where a flammable liquid is present at a hazardous substance location or in a hazardous atmosphere zone**

The person in charge of a hazardous substance location where flammable liquids are present must ensure that the location or place has a current test certificate certifying that—

- (a) the notification requirements of clause 18 are complied with; and
- (b) where Part 3 (Approved Handler) of Schedule 1 to the Group Standard relating to class 3.1 substances, or clause 6(2), require flammable liquids to be under the control of an approved handler—
  - (i) the person in charge of the hazardous substance location is an approved handler for such flammable liquids, or can demonstrate that a person is available who is an approved handler for such substances; and
  - (ii) the flammable liquids can be secured so that a person cannot gain access to the flammable liquids without tools, keys, or any other device used for operating locks; and
- (c) if a hazardous atmosphere zone is required by clause 4, a hazardous atmosphere zone has been established in accordance with that clause, and the extent of the hazardous atmosphere zone is documented; and
- (d) the requirements of clause 17 are complied with; and
- (e) the hazardous substance location has signage in place as required by Part 8 of the Site and Storage Conditions; and
- (f) where the quantity of flammable liquid requires it, Part 7 of the Site and Storage Conditions is complied with; and
- (g) the requirements of clause 18(4) are complied with; and
- (h) the requirements of Parts 2 to 5 of the Site and Storage Conditions are complied with.

## 20 Requirements to be met by transit depot

- (1) At any transit depot where the quantity of flammable liquids exceeds that specified for the relevant 3.1A, 3.1B or 3.1C liquids in Table 1 (see clause 3), the person in charge of the transit depot must—
  - (a) at least 30 working days before the commissioning of the transit depot as a place for accommodating these flammable liquids, notify an enforcement officer responsible for enforcement of the Act in the area where the transit depot is situated of—
    - (i) the street address of the transit depot; and
    - (ii) the maximum quantity and the hazard classification of each of the substances that the depot is designed to accommodate; and
  - (b) ensure that the approved handler requirements of Part 3 (Approved Handler) of Schedule 1 to the Group Standard relating to a class 3.1 substance are met; and
  - (c) ensure that any road vehicle loaded with containers of these flammable liquids is—
    - (i) not less than 3 m from any other vehicle that is loaded with compatible substances; and
    - (ii) not less than 5 m from any other vehicle that is loaded with incompatible substances; and
    - (iii) not less than 3 m from any place where containers of compatible substances not on a vehicle are located; and
    - (iv) not less than 5 m from any place where containers of incompatible substances not on a vehicle are located; and
  - (d) ensure that any containers of these substances held in the transit depot but not loaded onto a vehicle are not less than 5 m from containers of incompatible substances; and
  - (e) ensure that all substances located at the transit depot remain within their containers, and that the containers remain closed; and
  - (f) ensure that any electrical equipment at the transit depot is designed and constructed so that in the event of failure of the electrical equipment no resulting ignition source will contact either the substance or its package; and
  - (g) designate and clearly identify with signs that meet the requirements of Part 8 of the Site and Storage Conditions, areas for containment, pending disposal, of any leaked or spilled material or damaged packages.
- (2) Compliance with those parts of the Electricity Act 1992 and regulations made under that Act, the Health and Safety of Employment (Mining Underground) Regulations 1999, or the Civil Aviation Rules that relate to the matter described in subclause (1)(f) are a means of meeting the requirements of subclause (1)(f).

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**Part 2**  
**Conditions Relating to the Unintended Ignition of Flammable Liquids not  
Located at Hazardous Substance Location**

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**21 Person in charge of flammable liquid must comply with this Part**

- (1) The person in charge of a flammable liquid must ensure that the adverse effects of unintended ignition of the flammable liquid are controlled in accordance with this Part.
- (2) Subclause (1) does not apply if a provision of these conditions states that a different person is responsible.

**22 Separation of above ground stationary tank, transportable container or tank wagon containing a flammable liquid from areas of high and low intensity land use**

- (1) This clause does not apply to—
  - (a) a domestic oil-burning installation that—
    - (i) includes a stationary tank that has a capacity that does not exceed 1,200 L; and
    - (ii) complies with clause 64 of Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004; or
  - (b) a stationary tank that complies with clause 62(3)(b) of Schedule 8 of that notice.
- (2) An above ground stationary tank or transportable container that complies with Chapter 6.7 of the UN Model Regulations, or a tank wagon, that contains a flammable liquid that is present in a location that is not a hazardous substance location, must be separated from—
  - (a) an area of high intensity land use by not less than the distance specified in whichever of column 2 (for 3.1A, 3.1B or 3.1C liquids) or column 3 (for 3.1D liquids) of Table 5 as shown opposite the capacity of the above ground stationary tank, or transportable container that complies with Chapter 6.7 of the UN Model Regulations or tank wagon, in column 1 of that table; or
  - (b) an area of low intensity land use by not less than the distance specified in column 4 of Table 5 as shown opposite the capacity of the above ground stationary tank, or transportable container that complies with Chapter 6.7 of the UN Model Regulations or tank wagon, in column 1 of that table.
- (3) Where an above ground stationary tank, a transportable container or a tank wagon, having multiple compartments is installed, the separation distance to areas of high intensity land use and low intensity land use will be based on the aggregate volume of the compartments and the lowest flash point substance stored in any of the compartments.

**Table 5. Calculation of distances**

Capacity (L)	Area of high intensity land use (m)		Area of low intensity land use (m)
Column 1	Column 2	Column 3	Column 4
	3.1A, 3.1B, 3.1C	3.1D	3.1A, 3.1B, 3.1C
Up to 600	2	0	0
1,000	2	1.5	0
2,500	3	2	0
5,000	4	3	2
25,000	5	4	3
50,000	6	5	4
100,000	7	6	4
250,000	8	7	4.5
500,000	10	8	5
1,000,000	11	9	7
2,000,000	13	10	8
4,000,000	15	12	9
10,000,000	20	16	10
40,000,000 and over	30	25	15

### **23 Requirement to hold certain packages or transportable containers of a flammable liquid in a building of a certain type**

- (1) A 3.1A, 3.1B or 3.1C flammable liquid, that is present at a location that is not a hazardous substance location, that is contained in one or more packages or transportable containers that comply with Chapter 6.5 of the UN Model Regulations, other than a package or container to which clause 28 applies, must be held in a building of a type specified in subclause (2).
- (2) The types are—
  - (a) a type A building; or
  - (b) a type B building; or
  - (c) a type C building; or
  - (d) a type D building.
- (3) Despite subclause (1), a flammable liquid that is contained in one or more packages may be held in a storage cabinet—
  - (a) that is constructed and installed in accordance with section 4.9 of AS 1940-2004; and
  - (b) if—
    - (i) each package does not contain more than 20 L of the flammable liquid; and
    - (ii) the aggregate quantity of all packages of flammable liquid does not exceed 250 L.

**24 Separation of building holding packages up to 60 L of 3.1A or 3.1B flammable liquid or packages of any amount of 3.1C flammable liquid from area of high intensity land use**

- (1) This clause applies to every type A, type B, type C or type D building that holds, at a location that is not a hazardous substance location, one or more packages that contains, or each contain, as the case may be—
- (a) up to 60 L of a 3.1A or 3.1B flammable liquid; or
  - (b) a 3.1C flammable liquid.
- (2) A building to which this clause applies must be separated from an area of high intensity land use by not less than the distance specified in column 4 of Table 6 opposite the aggregate quantity of all packages of flammable liquids specified in whichever of column 1, or column 2, or column 3 of that table relates to the building.

**Table 6. Calculation of distances**

Aggregate quantity of 3.1A, 3.1B or 3.1C flammable liquids (L)			Area of high intensity land use (m)
Column 1	Column 2	Column 3	Column 4
Type A or B building	Type C building	Type D building	
250	1,000	20,000	0
500			1
750	2,000		2
2,000		50,000	3
		100,000	4
	10,000	200,000	5
		400,000 or more	6
10,000	100,000		10
25,000	400,000 or more		15
40,000			17
60,000 or more			20

**25 Storage of packages holding 3.1 flammable liquids in a store in a building**

- (1) Class 3.1 flammable liquids may be situated in a store inside a building provided that they are stored—
- (a) in a room with the walls and ceiling constructed with a 60/60/60 fire resistance rating and—
    - (i) not more than 450 L is situated in the store; and
    - (ii) the flammable liquids are stored in containers, each not exceeding 20 L capacity; or
  - (b) in a room with the walls and ceiling constructed of reinforced concrete or equivalent with a 120/120/120 fire resistance rating and—
    - (i) not more than 2,000 L is situated in the store; and

- (ii) the flammable liquids are stored in containers, each not exceeding 60 L capacity, provided that one container of a maximum capacity of 250 L may be located in the store; or
  - (c) in a type D building which shall have no openings to the interior of the building except for a door that is self-closing in the event of a fire and which opens into a type 1, 2, or 3 building.
- (2) For the purposes of subclause (1), where the quantity of flammable liquids in the store does not exceed 2,000 L, the door may open into the building if—
  - (a) the door of the room has a fire resistance rating of -/60/60 in the case of storage in accordance with subclause (1)(a) and -/120/120 in the case of storage in accordance with subclause (1)(b); and
  - (b) the door is fitted to be self-closing in the event of a fire near the doorway; and
  - (c) there are no combustible materials within 3 m of the doorway; and
  - (d) any portion of any structure within 3 m of the doorway must be constructed of non-combustible materials, and
  - (e) the door is kept closed except when goods are being placed in, or removed from, the store.
- (3) A building constructed in accordance with subclause (1)(c) or a building which has more than two walls in common with another building that is an area of regular habitation shall have walls constructed of reinforced concrete or equivalent with a fire resistance rating of 240/240/240 and shall not contain more than—
  - (a) 5,000 L of 3.1A and 3.1B flammable liquids in aggregate, in containers exceeding 60 L capacity; or
  - (b) 10,000 L in aggregate in the case of all other storage of 3.1A and 3.1B flammable liquids in containers not exceeding 60 L capacity and/or 3.1 C flammable liquids in containers not exceeding 250 L capacity.

**26 Separation of building holding transportable containers or packages of more than 60 L of 3.1A, 3.1B or 3.1C flammable liquid from area of high intensity land use**

- (1) This clause applies to every type A, type B, type C or type D building that holds one or more packages or transportable containers that comply with Chapter 6.5 of the UN Model Regulations that contains, or each contain, as the case may be, more than 60 L of a 3.1A, 3.1B or 3.1C flammable liquid, that is present in a location that is not a hazardous substance location.
- (2) A building to which this clause applies must be separated from an area of high intensity land use by not less than the distance specified in column 4 of Table 7 opposite the aggregate quantity of all transportable containers that comply with Chapter 6.5 of the UN Model Regulations or packages of flammable liquids specified in whichever of column 1, or column 2, or column 3 of that table relates to the building.

**Table 7. Calculation of distances**

Aggregate quantity of 3.1A, 3.1B or 3.1C flammable liquid (L)			Area of high intensity land use (m)
Column 1	Column 2	Column 3	Column 4
Type A or B building	Type C building	Type D building	
		10,000	0
	500		2
250	2,000		3
		20,000	4
1,000		100,000	6
		200,000	8
	10,000	400,000 or more	10
10,000	25,000		15
	40,000		17
20,000	60,000		20
	200,000 or more		25
40,000			27
60,000 or more			30

**27 Separation of transfer point for a flammable liquid from area of high intensity land use**

A transfer point used to fill a tank wagon with a flammable liquid, that is not a hazardous substance location, must be separated from an area of high intensity land use by the distance of 10 m in the case of a 3.1A, 3.1B or 3.1C flammable liquid, or 5 m in the case of a 3.1D flammable liquid.

**28 A flammable liquid being used or in open package or container to be held in building of a certain type**

- (1) This clause applies when a 3.1A, 3.1B or 3.1C flammable liquid that is present in a location that is not a hazardous substance location, is—
  - (a) being used; or
  - (b) contained in one or more packages or containers, one or more of which is open.
- (2) A 3.1A, 3.1B or 3.1C flammable liquid to which this clause applies and which is located in a building must be held in—
  - (a) a type 1 building; or
  - (b) a type 2 building; or
  - (c) a type 3 building; or
  - (d) a paint mixing room that complies with AS/NZS 4114.

## **29 Separation of building holding package containing a 3.1A, 3.1B or 3.1C flammable liquid from area of high intensity land use**

- (1) This clause applies to every type of building specified in clauses 28(2)(a) to (d) in which a flammable liquid, that is present in a location that is not a hazardous substance location, is—
  - (a) being used; or
  - (b) contained in one or more packages or containers, one or more of which is open.
- (2) A building to which this clause applies—
  - (a) if the building is a type 1 building or paint mixing room that complies with AS/NZS 4114, must not hold—
    - (i) a class 3.1 flammable liquid in a container that is more than 20 L in capacity; and
    - (ii) an aggregate quantity of class 3.1 flammable liquids of more than 450 L; and
  - (b) if the building is a type 2 or type 3 building, must not hold more than—
    - (i) in the case of a 3.1A or 3.1B flammable liquid, an aggregate quantity of 7,500 L; or
    - (ii) in the case of a 3.1C flammable liquid, 10,000 L; and
  - (c) must be constructed so as to hold any 3.1A or 3.1B flammable liquid that exceeds 60 L, or a 3.1C flammable liquid that exceeds 100 L, as close as practicable to ground level.
- (3) For the purposes of subclause (2)(b), where the building holds both 3.1A and/or 3.1B flammable liquids, and also 3.1C flammable liquids, the relevant quantity has been exceeded if the quantity-ratio is greater than 1.
- (4) Every building to which this clause applies must be separated from an area of high intensity land use by not less than—
  - (a) in the case of a 3.1A or 3.1B flammable liquid, the distance specified in whichever of column 2 or column 3 of Table 8 relates to that type of building opposite the aggregate quantity of the flammable liquid specified in column 1 of that table; or
  - (b) in the case of a 3.1C flammable liquid, the distance specified in whichever of column 2 or column 3 of Table 8 relates to that type of building opposite the aggregate quantity of the flammable liquid specified in column 1 of that table.

**Table 8. Calculation of distances**

Column 1 Aggregate quantity of 3.1A and 3.1B flammable liquid (L)	Area of high intensity land use (m)	
	Column 2 Type 2 building	Column 3 Type 3 building
Up to 1,750	0	0
3,000	5	0
7,500	8	5
Aggregate quantity of 3.1C flammable liquid (L)		
Up to 2,500	0	0
4,000	5	0
10,000	8	5

### **30 Repairs and servicing of tank wagons**

Notwithstanding the requirements of clause 22, a tank wagon may be taken into a building for repairs, vehicle inspection or servicing provided that the tank wagon load tank cannot vent inside the building, that the tank wagon is not located where it can be subject to heating, that no ignition source is permitted within 8 m of the load tank and, in the case of emergency repairs, that the driver or other responsible representative of the owner remains with the vehicle until the repair is completed.

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### **Part 3**

#### **Conditions Relating to the Unintended Ignition of Flammable Liquids Present at Hazardous Substance Location**

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### **31 Person in charge of flammable liquid must comply with this Part**

- (1) The person in charge of a flammable liquid must ensure that the adverse effects of unintended ignition of the flammable liquid are controlled in accordance with this Part.
- (2) Subclause (1) does not apply if a provision of these conditions states that a different person is responsible.

### **32 Requirement to establish controlled zone**

- (1) The person in charge of a hazardous substance location at which a 3.1A, 3.1B or 3.1C flammable liquid is present must—
  - (a) establish a controlled zone around the hazardous substance location that complies with this Part; and
  - (b) exclude all non-authorised personnel from that controlled zone.
- (2) Subclause (1)(b) does not apply if the controlled zone—
  - (a) includes one or more areas for the retail sale of a flammable liquid referred to in subclause (1) to which the public have access; and

- (b) warning signs are provided that are visible to persons in the controlled zone that specify that no ignition source may be brought within that controlled zone.

### **33 Separation of above ground stationary tank, transportable container or tank wagon containing a 3.1A, 3.1B or 3.1C flammable liquid from boundary of controlled zone**

- (1) This clause does not apply to—
  - (a) a domestic oil-burning installation that—
    - (i) includes a stationary tank that has a capacity that does not exceed 1,200 L; and
    - (ii) complies with clause 64 of Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004; or
  - (b) a stationary tank that complies with clause 62(3)(b) of Schedule 8 of that notice.
- (2) An above ground stationary tank or transportable container that complies with Chapter 6.7 of the UN Model Regulations or tank wagon that contains a 3.1A, 3.1B or 3.1C flammable liquid, that is present at a hazardous substance location, must be separated from the boundary of the controlled zone—
  - (a) if the controlled zone abuts an area of high intensity land use, by not less than the distance specified in whichever of column 2 (for 3.1A, 3.1B or 3.1C) or column 3 (for 3.1D) of Table 5 (see clause 22) is opposite the capacity of the above ground stationary tank or transportable container that complies with Chapter 6.7 of the UN Model Regulations or tank wagon in column 1 of that table; or
  - (b) if the controlled zone abuts an area of low intensity land use, by not less than the distance specified in column 4 of Table 5 (see clause 22) opposite the capacity of the above ground stationary tank or transportable container that complies with Chapter 6.7 of the UN Model Regulations or tank wagon in column 1 of that table.
- (3) Where an above ground stationary tank, transportable container or tank wagon, having multiple compartments is installed, the separation distance to areas of high intensity land use and low intensity land use will be based on the aggregate volume of the compartments and the lowest flash point substance stored in any of the compartments.

### **34 Requirement to hold certain packages or transportable containers of flammable liquids in building of a certain type**

- (1) A flammable liquid, that is present at a hazardous substance location, that is contained in one or more packages or transportable containers that comply with Chapter 6.5 of the UN Model Regulations, other than a package or container to which clause 40 applies, must be held in a building of a type specified in subclause (2).
- (2) The types are—
  - (a) a type A building; or
  - (b) a type B building; or

- (c) a type C building; or
  - (d) a type D building.
- (3) Despite subclause (1), a flammable liquid that is contained in one or more packages may be held in a storage cabinet—
- (a) that is constructed and installed in accordance with section 4.9 of AS 1940-2004; and
  - (b) if—
    - (i) each package does not contain more than 20 L of the flammable liquid; and
    - (ii) the aggregate quantity of all packages of 3.1A, 3.1B or 3.1C flammable liquid does not exceed 250 L.

**35 Separation of building holding packages up to 60 L of 3.1A or 3.1B flammable liquid or packages of any amount of 3.1C flammable liquid from boundary of controlled zone**

- (1) This clause applies to every type A, type B, type C or type D building that holds one or more packages that contains, or each contain, as the case may be—
- (a) up to 60 L of a 3.1A or 3.1B flammable liquid that is present at a hazardous substance location; or
  - (b) a 3.1C flammable liquid that is present at a hazardous substance location.
- (2) If the controlled zone in which a building to which this clause applies abuts an area of high intensity land use, the building must be separated from the boundary of the controlled zone by not less than the distance specified in column 4 of the Table 6 (see clause 24) opposite the aggregate quantity of all packages of flammable liquids specified in whichever of column 1, or column 2, or column 3 of that table relates to the building.

**36 Storage of packages holding 3.1 flammable liquids in a store in a building**

- (1) Class 3.1 flammable liquids may be situated in a store inside a building provided that they are stored—
- (a) in a room with the walls and ceiling constructed with a 60/60/60 fire resistance rating and—
    - (i) not more than 450 L is situated in the store; and
    - (ii) the flammable liquids are stored in containers, each not exceeding 20 L capacity; or
  - (b) in a room with the walls and ceiling constructed of reinforced concrete or equivalent with a 120/120/120 fire resistance rating and—

- (i) not more than 2,000 L is situated in the store; and
  - (ii) the flammable liquids are stored in containers, each not exceeding 60 L capacity, provided that one container of a maximum capacity of 250 L may be located in the store; or
- (c) in a type D building which shall have no openings to the interior of the building except for a door that is self-closing in the event of a fire and which opens into a type 1, 2, or 3 building.
- (2) For the purposes of subclause (1), where the quantity of 3.1 flammable liquids in the store does not exceed 2,000 L, the door may open into the building if—
- (a) the door of the room has a fire resistance rating of -/60/60 in the case of storage in accordance with subclause (1)(a) and -/120/120 in the case of storage in accordance with subclauses (1)(b) or (1)(c); and
  - (b) the door is fitted to be self-closing in the event of a fire near the doorway; and
  - (c) there are no combustible materials within 3 m of the doorway; and
  - (d) any portion of any structure within 3 m of the doorway must be constructed of non-combustible materials, and
  - (e) the door is kept closed except for when goods are being placed into or removed from the store.
- (3) A building constructed in accordance with subclause (1)(c) or a building which has more than two walls with a fire resistance rating of 240/240/240 in common with another building that is an area of regular habitation shall not contain more than—
- (a) 5,000 L of 3.1A and 3.1B flammable liquids in aggregate, in containers exceeding 60 L capacity; or
  - (b) 10,000 L in aggregate in the case of all other storage of 3.1A and 3.1B flammable liquids in containers not exceeding 60 L capacity and / or 3.1C flammable liquids in containers not exceeding 250 L capacity.

### **37 Deemed compliance with Parts 2 and 3 of the Site and Storage Conditions**

Where a building to which the public have access holds a flammable liquid that is—

- (a) available for retail sale; and
- (b) contained in closed containers of capacity not exceeding 10 L; and
- (c) the quantities are not greater than the quantities specified in Table 1 (see clause 3),

the separation distance specified in Parts 2 and 3 from the building may be zero.

**38 Separation of building holding transportable containers or packages of more than 60 L of 3.1A, 3.1B or 3.1C flammable liquid in controlled zone from boundary of controlled zone**

- (1) This clause applies to every type A, type B, type C or type D building that holds one or more packages or transportable containers that comply with Chapter 6.5 of the UN Model Regulations that contains, or each contain, as the case may be, more than 60 L of a flammable liquid that is present at a hazardous substance location.
- (2) If the controlled zone in which a building to which this clause applies abuts an area of high intensity land use, the building must be separated from the boundary of the controlled zone by not less than the distance specified in column 4 of Table 7 (see clause 26) opposite the aggregate quantity of all packages of flammable liquids specified in whichever of column 1, or column 2, or column 3 of that table relates to the building.

**39 Separation of transfer point for a flammable liquid from boundary of controlled zone**

A transfer point used to fill a tank wagon with a flammable liquid, present at a hazardous substance location, must be separated from the boundary of the controlled zone if the controlled zone abuts an area of high intensity land use by the distance of 10 m in the case of a 3.1A, 3.1B or 3.1C flammable liquid, or 5 m in the case of a 3.1D flammable liquid.

**40 A flammable liquid being used or in open package or container to be held in building of a certain type**

- (1) This clause applies to a 3.1A, 3.1B or 3.1C flammable liquid, that is present at a hazardous substance location, that is—
  - (a) being used; or
  - (b) contained in one or more packages or containers, one or more of which is open.
- (2) A 3.1A, 3.1B or 3.1C flammable liquid to which this clause applies, and which are located in a building, must be held in—
  - (a) a type 1 building; or
  - (b) a type 2 building; or
  - (c) a type 3 building; or
  - (d) a paint mixing room that complies with AS/NZS 4114.

**41 Separation of building holding package containing a 3.1A, 3.1B or 3.1C flammable liquid from boundary of controlled zone**

- (1) This clause applies to every type of building specified in clauses 40(2)(a) to (d) in which a 3.1A, 3.1B or 3.1C flammable liquid, that is present at a hazardous substance location, is—

- (a) being used; or
  - (b) contained in one or more packages or containers, one or more of which is open.
- (2) A building to which this clause applies—
- (a) if the building is a type 1 building or paint mixing room that complies with AS/NZS 4114, must not hold—
    - (i) a flammable liquid in a container that is more than 20 L in capacity; and
    - (ii) an aggregate quantity of flammable liquids of more than 450 L; and
  - (b) if the building is a type 2 or type 3 building, must not hold more than—
    - (i) in the case of a 3.1A or 3.1B flammable liquid, an aggregate quantity of 7,500 L; or
    - (ii) in the case of a 3.1C flammable liquid, 10,000 L; and
  - (c) must be constructed so as to hold any 3.1A or 3.1B flammable liquid that exceeds 60 L, or a 3.1C flammable liquid that exceeds 100 L, as close as practicable to ground level.
- (3) For the purposes of subclause (2)(b), where the building holds both 3.1A and/or 3.1B flammable liquids, and also 3.1C flammable liquids, the relevant quantity has been exceeded if the quantity-ratio is greater than 1.
- (4) Every building to which this clause applies must be separated from an area of high intensity land use by not less than—
- (a) in the case of a 3.1A or 3.1B flammable liquid, the distance specified in whichever of column 2 or column 3 of Table 8 (see clause 29) relates to that type of building opposite the aggregate in quantity of the flammable liquid specified in column 1 of that table; or
  - (b) in the case of a 3.1C flammable liquid, the distance specified in whichever of column 2 or column 3 in Table 8 (see clause 29) relates to that type of building opposite the aggregate quantity of the flammable liquid specified in column 1 of that table.
- (5) Despite the provisions of subclauses (1) to (4), when the maximum quantity of flammable liquids used in any building at any one time does not exceed 60 L of 3.1A and 3.1B flammable liquids in aggregate, or 250 L of 3.1C flammable liquids, the use of those flammable liquids other than in a type 1, type 2 or type 3 building is permitted under the following conditions:
- (a) the building must be occupied by the same organisation that is storing the flammable liquids; and
  - (b) that part of the building in which the activity involving exposure of the flammable liquids to the atmosphere is being carried out must be constructed of fire resisting materials to at least 6 m in all directions from any container in which flammable liquids are used; and

- (c) no source of ignition shall be permitted within 15 m of the area where work involving the exposure to the atmosphere of 3.1A and 3.1B flammable liquids in excess of 30 L in total is being carried out unless the working area is protected by an intervening wall.

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## Part 4

### Calculation of Separation Distances

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#### **42 Calculation of distances for intermediate capacities**

- (1) In Part 2 and Part 3 of the Site and Storage Conditions, if the—
  - (a) capacity of an above ground stationary tank; or
  - (b) aggregate quantity of a flammable liquid to which these clauses apply contained in—
    - (i) one or more packages; or
    - (ii) one or more packages or containers, one or more of which is open—

(as the case may be) is between any two successive capacities (an intermediate capacity) specified in relation to that capacity or quantity, the separation distance must be calculated in accordance with subclause (2).
- (2) The separation distance that applies to an intermediate capacity is the distance that is proportional to the difference in capacity or quantity, as the case may be.

#### **43 Distance not to extend beyond boundary unless agreed**

A separation distance calculated under Part 2 or Part 3 of the Site and Storage Conditions must not be calculated beyond the boundary of the property at which the flammable liquid is present unless the person in charge of any property beyond that boundary agrees that the separation distance may be calculated to include the property of which the person is in charge.

#### **44 Reduction of separation distance and variation of other matters in certain circumstances**

- (1) In respect of a flammable liquid under Part 2 or Part 3 of the Site and Storage Conditions, the Authority may reduce the separation distance required or vary other matters—
  - (a) upon application by the person in charge of a place at which a flammable liquid is located; or
  - (b) by approving a code of practice under section 78 of that Act that specifies requirements equivalent to the requirements specified in Part 2 or Part 3.
- (2) The Authority may reduce the separation distance by up to 50% if—
  - (a) in the case of a flammable liquid contained in an above ground stationary tank, the tank is designed and constructed in accordance with SWRI 95-03; or

- (b) there is an intervening wall, and—
  - (i) the distance is measured in the horizontal plane around the end of any intervening wall by the most direct line to—
    - (I) the area of high intensity land use; or
    - (II) the area of low intensity land use; or
    - (III) boundary of the controlled zone; and
  - (ii) the wall—
    - (I) has a fire resistance rating of 240/240/240 minutes or, where the site on the other side of the boundary adjacent to the premises is a low intensity land use, the wall is constructed of fire-resisting materials; and
    - (II) is vapour-tight; and
    - (III) is of sufficient size to protect the area of high intensity land use or area of low intensity land use (whichever is applicable) from a hazardous substance fire.
- (3) When considering an application under subclause (1), the Authority must take into account—
  - (a) the quantity and location of the flammable liquid, any other hazardous substance located at that place; and
  - (b) the capacity of any fire fighting facilities at that place; and
  - (c) the fire-resistance rating of any structure (for example, walls, floors, ceilings, and doors) that contain the flammable liquid; and
  - (d) in the case of a flammable liquid in an above ground stationary tank, whether the design and construction of the tank will protect the tank from fire.
- (4) When approving an application under this clause, the Authority may set the time within which the relevant requirements must be met or other such matters as it thinks fit.

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**Part 5**  
**Existing Type E Buildings – Grand-Parenting**

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**45 Compliance plans**

- (1) In this Part type E building means a building or storage place approved in accordance with the Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985 as a Type E building that was in use immediately before 1 July 2006 to store or house a flammable liquid.
- (2) A type E building is not required to comply with Parts 2 to 4 of the Site and Storage Conditions if—

- (a) it is used for the purpose for which it was used immediately before 1 July 2006; and
  - (b) the person in charge of it complies with subclauses (3) to (6).
- (3) The person in charge of a type E building must—
- (a) no later than 30 June 2008, engage a test certifier to undertake an assessment and prepare a report as to the extent to which the type E building complies with Parts 2 to 4 (as applicable); and
  - (b) no later than 30 June 2009, give the Authority a compliance plan setting out a programme for bringing the type E building into compliance with Parts 2 to 4 (which may include meeting the criteria set out in clause 44).
- (4) Upon receiving a compliance plan in accordance with subclause (3)(b) the Authority must either approve it or decline to approve it.
- (5) The Authority and the person who gave the compliance plan to the Authority may, after the compliance plan is approved, from time to time agree amendments to the compliance plan.
- (6) The person in charge of the type E building in respect of which a compliance plan has been approved must comply with the compliance plan (as amended from time to time).

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## **Part 6**

### **Conditions for Stationary Container Systems**

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#### **46 Stationary Container Systems**

Any stationary container system that contains, or is intended to contain, a hazardous substance must comply, to the extent applicable, with the controls for stationary container systems as set out in Parts 1 to 19 of Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004, notwithstanding clause 1(1) of that Schedule.

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## **Part 7**

### **Emergency Management**

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#### **47 Fire extinguishers required**

- (1) Every place must have the number of fire extinguishers specified in Table 9 if the quantity of flammable liquids present, or likely to be present, exceed the quantities listed in Table 9.
- (2) If substances of two or more hazard classifications are held in the place, or reasonably likely to be held in it on occasion—
  - (a) the numbers of fire extinguishers are not cumulative; and
  - (b) it is enough to have the highest of the numbers of fire extinguishers specified for substances of the various classifications.

**Table 9. Trigger quantities requiring fire extinguishers**

HSNO classification	Quantity	No. of fire extinguishers
3.1A	50 L 200 L	1 2
3.1B	250 L	2
3.1C, 3.1D	500 L	2

**48 Location of fire extinguishers**

- (1) In the case of a motor vehicle transporting flammable liquids, the fire extinguishers required by clause 47 must be in or on the vehicle.
- (2) In any other case, every fire extinguisher required by clause 47 must be so located that the distance of travel between it and the flammable liquids concerned is no more than 30 m.

**49 Capability of fire extinguishers**

Each fire extinguisher required by clause 47 must be able, when used by one person, to put out a fully ignited pool, 50 mm deep and at least 6 m<sup>2</sup> in area, of a flammable liquid with properties equivalent to those of n-heptane.

**50 Duties of persons in charge of places in respect of emergency response plans and secondary containment**

- (1) This clause applies to a place if—
  - (a) there is held in it, or reasonably likely to be held in it on occasion, an aggregate quantity of hazardous substances of a particular hazard classification greater than the quantity specified in Table 10; and
  - (b) it is not an aircraft subject to the Civil Aviation Act 1990 or a ship subject to the Maritime Transport Act 1994.
- (2) A person in charge of a place to which this clause applies must ensure that the requirements of clauses 51 to 68 are complied with.

**Table 10. Trigger quantities for emergency plans and secondary containment**

HSNO classification	Quantity
3.1A 6.1A, 6.1B, 6.1C 8.2A 9.1A	100 L
3.1B 6.1D, 6.5A, 6.5B, 6.7A 8.2B 9.1B, 9.1C	1,000 L
3.1C, 3.1D 6.6A, 6.7B, 6.8A, 6.9A 8.2C, 8.3A 9.1D	10,000 L

## **51 When emergency response plans required**

A place to which clause 50 applies must have in it a single emergency response plan if the aggregate quantity of hazardous substances of a particular hazard classification held in it or reasonably likely to be held in it is greater than the quantity specified in Table 10.

## **52 Plans to warn of likely emergencies**

An emergency response plan must describe all of the reasonably likely emergencies that may arise from the breach or failure of the conditions on substances of the hazard classifications concerned.

## **53 Contents of plans**

An emergency response plan must, for each reasonably likely emergency—

- (a) describe the actions to be taken to—
  - (i) warn people at the place, and in surrounding areas that may be adversely affected by the emergency, that an emergency has occurred; and
  - (ii) advise those people about the actions they should take to protect themselves; and
  - (iii) help or treat any person injured in the emergency; and
  - (iv) manage the emergency so that its adverse effects are first restricted to the area initially affected, then as soon as practicable reduced in severity, then if reasonably possible eliminated; and
  - (v) if any of the substances concerned remain, re-establish the conditions imposed on it when it was approved; and
- (b) identify every person with responsibility for undertaking any of the actions described in subclause (a) (or any part of any of those actions) and give information on—
  - (i) how to contact the person; and
  - (ii) any skills the person is required to have; and
  - (iii) any actions that person is expected to take; and
- (c) specify—
  - (i) how to obtain information about the hazardous properties of and means of controlling the substance or substances that may be involved; and
  - (ii) actions to be taken to contact any emergency service provider; and
  - (iii) the purpose and location of each item of equipment or material to be used to manage the emergency; and
  - (iv) how to decide which actions to take; and
  - (v) the sequence in which actions should be taken.

## **54 Extra information required in some cases**

An emergency response plan—

- (a) must specify the type and location of the fire extinguishers provided under clause 47, and any extra firefighting equipment, materials, and systems provided, if any of the reasonably likely emergencies identified in the plan is a fire; and
- (b) must provide for the retention of any flammable liquid to prevent its contacting any incompatible substance.

## **55 Availability of equipment, materials, and people**

All equipment and materials described in an emergency response plan, and all responsible people described in an emergency response plan who are on duty, must—

- (a) be present at the location concerned; or
- (b) be available to reach the location of the substance within the times specified in the plan; or
- (c) in the case of a trained person, be available to provide the advice or information specified in the plan within a time specified in the plan.

## **56 Availability of plans**

- (1) An emergency response plan must be available to every person identified under clause 53(b) as being responsible for executing the plan or a specific part of it, and to every emergency service provider identified in it.
- (2) The information in an emergency response plan must meet the standards of presentation required for information imposed by clause 1 of Part 1 (Information Requirements) of Schedule 1 to the Group Standard.

## **57 Testing plans**

- (1) An emergency response plan must be tested at least every 12 months; and the test must demonstrate that every procedure or action in the plan is workable and effective.
- (2) If there is a change to the persons, procedures, or actions specified in an emergency response plan, the plan must be tested within 3 months of the change; and the test must demonstrate that—
  - (a) the changed persons can perform their functions under the plan; and
  - (b) each changed procedure or action is workable and effective.
- (3) The carrying out and the results of every test must be documented; and the documentation must be retained for at least 2 years.

## **58 Plan can be part of other management documentation**

An emergency response plan can be part of any other management documentation for an emergency whether—

- (a) required by the Hazardous Substances and New Organisms Act 1996 or some other Act; or
- (b) undertaken by a person or organisation for some other reason.

## **59 Secondary containment systems**

- (1) A place to which clause 50 applies must have a secondary containment system if the aggregate quantity of pooling substances of a particular hazard classification held in it is equal to or greater than the quantity specified in Table 10.
- (2) Subclause (1) does not apply to a place that is a vehicle.
- (3) The secondary containment system must comply with clauses 60 to 63 depending on—
  - (a) the capacities of the container or containers in which the substances are held; and
  - (b) whether they are held in a place above or below ground.
- (4) If two or more containers of different capacities (as described in clauses 60 to 62) are held at one place, the system must have a capacity of at least the sum of each container category.
- (5) For the purposes of this clause, and clauses 60 to 63, where this substance is contained in pipework that is installed and operated so as to manage any loss of containment in the pipework it—
  - (a) is not to be taken into account in determining whether a place is required to have a secondary containment system; and
  - (b) is not required to be located in a secondary containment system.
- (6) In this clause, pipework—
  - (a) means piping that—
    - (i) is connected to a stationary container; and
    - (ii) is used to transfer a substance into or out of the stationary container; and
  - (b) includes a process pipeline or a transfer line.

## **60 Surface containers of up to 60 L**

If the pooling substances are held in a place above ground and are in containers each of which has a capacity of 60 L or less—

- (a) if the total volume at the place is less than 5,000 L, the secondary containment system must have a capacity of at least half that total pooling potential; or
- (b) if the total volume at the place is 5,000 L or more, the secondary containment system must have a capacity of the greater of—
  - (i) 2,500 L; and
  - (ii) a quarter of that total pooling potential.

#### **61 Surface containers of over 60 and up to 450 L**

If the pooling substances are held in a place above ground and are in containers one or more of which have a capacity of more than 60 L but none of which has a capacity of more than 450 L—

- (a) if the total volume at the place is less than 5,000 L, the secondary containment system must have a capacity of at least that total pooling potential; or
- (b) if the total volume at the place is 5,000 L or more, the secondary containment system must have a capacity of the greater of—
  - (i) 5,000 L; and
  - (ii) half that total pooling potential.

#### **62 Surface containers of over 450 L**

- (1) If the pooling substances are held in a place above ground and are in containers one or more of which have a capacity of 450 L or more, the secondary containment system must have a capacity of at least 110% of the capacity of the largest container.
- (2) Subclause (1) applies to a container that is so connected to some other container or containers that leakage from it will cause the other container or containers to empty, as if its capacity is the sum of the capacities of all the connected containers.

#### **63 Below ground containers**

- (1) If the pooling substances are held in a place and are in one or more below ground containers, the secondary containment system must have a capacity at least equal to the total pooling potential.
- (2) In subclause (1), below ground container—
  - (a) means a container that is situated below ground; and
  - (b) includes—
    - (i) a container below ground, the level of which has been raised to provide cover for the container; and
    - (ii) a container covered by other incombustible material instead of ground.

## **64 Particular controls on secondary containment systems**

There must be instituted or capable of being instituted in or in respect of a secondary containment system required by this Part, controls that—

- (a) if flammable liquids must be contained, exclude any energy source capable of igniting them or causing them to decompose thermally; and
- (b) if toxic or biological corrosive substances must be contained, prevent people from being directly exposed to them; and
- (c) prevent the substances retained from being contaminated by incompatible substances and materials.

## **65 Secondary containment system for storage of flammable liquids**

- (1) This clause applies to every secondary containment system to which clause 62 applies if any stationary container located within the secondary containment system is used to contain a flammable liquid.
- (2) The quantity of flammable liquid that may be held in a secondary containment system to which this clause applies must not exceed 75,000,000 L.
- (3) If the quantity of flammable liquid which may be held within a secondary containment system is greater than 25,000,000 L, and the flammable liquids are stored in more than one stationary container, the stationary containers must be divided into groups.
- (4) If a group consists of more than one stationary container, the aggregate capacity of the stationary containers in the group must not exceed 25,000,000 L.
- (5) Each group must be separated from all other stationary containers in the secondary containment system by a further secondary containment system (called an intermediate secondary containment system).
- (6) An intermediate secondary containment system must comply with all requirements applying to a secondary containment system except—
  - (a) it must have a capacity of at least 50% of the capacity of the largest stationary container located within it; and
  - (b) none of the walls that form a subdivision of the secondary containment system may be higher than 0.25 m lower than the height of the lowest wall of the secondary containment system in which it is located.

## **66 Authority may modify aggregate capacity limit for groups of stationary containers**

- (1) The Authority may, on application from a person, increase the aggregate capacity of stationary containers that may be in a group within a secondary containment system for the purposes of clause 65(4).
- (2) The Authority may not approve an aggregate capacity under subclause (1) that exceeds 40,000,000 L.

- (3) In considering an application under subclause (1) the Authority must have regard to the following matters:
- (a) the degree of hazard (i.e. whether 3.1A, 3.1B, 3.1C or 3.1D) associated with the flammable liquids which may be held within each intermediate secondary containment system in the secondary containment system to which the application relates; and
  - (b) the capacity of the largest stationary container within each intermediate secondary containment system to which the application relates, and the relationship of that capacity to the capacity of the relevant intermediate secondary containment system proposed in the application; and
  - (c) in relation to each intermediate secondary containment system to which the application relates, the capacity of intermediate secondary containment systems adjacent to it; and
  - (d) the availability of means to prevent unintended ignition, and of means to control the effects of unintended ignition, of flammable liquids stored within each intermediate secondary containment system to which the application relates; and
  - (e) any other matter the Authority considers relevant to its consideration of the application.

## **67 Authority may modify maximum capacity for secondary containment systems**

- (1) The Authority may, on application from a person, increase the aggregate capacity of stationary containers within a secondary containment system for the purposes of clause 65(2).
- (2) The Authority may not approve a capacity under subclause (1) that exceeds 120,000,000 L.
- (3) In considering an application under subclause (1) the Authority must have regard to the following matters:
- (a) the degree of hazard (i.e. whether 3.1A, 3.1B, 3.1C or 3.1D) associated with the flammable liquids which may be held within the secondary containment system to which the application relates and, if applicable, any existing secondary containment system; and
  - (b) the capacity of the largest stationary container within each secondary containment system and the relationship of that capacity to the capacity of any existing secondary containment system; and
  - (c) the type of design and construction of the stationary container; and
  - (d) the availability of means to prevent unintended ignition, and of means to control the effects of unintended ignition, of flammable liquids which may be held within the secondary containment system to which the application relates; and
  - (e) any other matter the Authority considers relevant to its consideration of the application.

## **68 Variation to requirements of clause 62**

- (1) The capacity that a secondary containment system is required to have to comply with clause 62 may be reduced either—
  - (a) by the Authority upon application by any person and subject to such conditions as the Authority thinks fit; or
  - (b) in accordance with a code of practice approved by the Authority under section 78 of the Act for the purposes of this clause.
- (2) The Authority may not approve a capacity under subclause (1) that is less than 100% of the capacity of the largest stationary container located in the secondary containment system to which the application relates.
- (3) In considering an application under subclause (1) the Authority must take into account any means provided to prevent the capacity of the secondary containment system to which the application relates being taken up by rainwater.

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## **Part 8 Signage**

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## **69 Duties of persons in charge of places in respect of signage**

- (1) This clause applies to a place if—
  - (a) there is held in it, or reasonably likely to be held in it on occasion, an aggregate quantity of hazardous substances of a particular hazard classification greater than the quantity specified in Table 11; and
  - (b) it is not an aircraft subject to the Civil Aviation Act 1990 or a ship subject to the Maritime Transport Act 1994 or a vehicle subject to the Land Transport Act 1998.
- (2) A person in charge of a place to which this clause applies must ensure that—
  - (a) signage required by clause 70 is provided; and
  - (b) its content, presentation and positioning comply with that clause; and
  - (c) it meets the general information requirement imposed by clause 1 of Part 1 (Information Requirements) of Schedule 1 to the Group Standard.

**Table 11. Trigger quantities requiring signage**

HSNO classification	Quantity <sup>1</sup>
3.1A 6.1A 8.2A	50 L
9.1A, 9.2A, 9.3A, 9.4A	100 L
3.1B 6.1B 8.2B	250 L
3.1C 6.1C 8.1A 8.2C, 8.3A 9.1B, 9.1C, 9.2B, 9.2C, 9.3B, 9.4B, 9.4C	1,000 L
3.1D 6.1D 9.1D, 9.2D, 9.3C	10,000 L

1. These are the trigger quantities given in the Hazardous Substances (Emergency Management) Regulations 2001. If no trigger quantities for a particular hazard classification are given in Part 2 (Site and Storage) of Schedule 1 to a Group Standard (as may be the case for class 9.2, 9.3 and 9.4 hazards), then there is no requirement for signage for these hazards.

## 70 Signage requirements

- (1) If hazardous substances are located in a building (but not a particular room or compartment within it) there must be positioned at every vehicular and pedestrian access to the building, and every vehicular and pedestrian access to land where the building is located, signage that—
  - (a) states that hazardous substances are present; and
  - (b) describes the general type of hazard of each of them; and
  - (c) advises the action to be taken in an emergency.
- (2) If hazardous substances are located in a particular room or compartment within a building, there must be positioned at each entrance to the room or compartment signage complying with subclause (4).
- (3) If hazardous substances are located in an outdoor area, there must be positioned immediately next to that area signage complying with subclause (4).
- (4) Signage required by subclauses (2) or (3) must—
  - (a) state that hazardous substances are present; and
  - (b) describe the general type of hazard of each of them; and
  - (c) describe the precautions necessary to prevent unintended ignition of flammable liquids; and
  - (d) advise the action to be taken in an emergency.

## Interpretation

**Act** means the Hazardous Substances and New Organisms Act 1996

**approved handler** means a person who has a test certificate that certifies that the person meets the competency requirements for approved handlers specified in the Hazardous Substances and New Organisms (Personnel Qualifications) Regulations 2001

**area of high intensity land use**, in relation to an area beyond the boundary of a place where a hazardous substance location is sited, includes an area of regular habitation, any other hazardous substance location, and a high density traffic route, but does not include a small office constructed of non-combustible materials associated with a hazardous substances location that is used by persons authorised to be at the location by the person in charge of that location

**area of low intensity land use**, in relation to an area beyond the boundary of a place where a hazardous substance location is sited, includes an area where any person may legally be present occasionally, and also includes a public park or reserve and a traffic route of low or medium traffic density, but does not include an area of regular habitation

**area of regular habitation** includes any dwelling, hospital, school, airport, commercial premises, office, or other area where people regularly congregate

**AS** refers to the Australian Standard

**AS 1940-2004** means the standard on: The Storage and Handling of Flammable and Combustible Liquids

**AS 2380.1: 1989** means the Australian standard on: Electrical equipment for explosive atmospheres—Explosion protection techniques, Part 1: General requirements

**AS/NZS** refers to the Joint Australian and New Zealand Standard

**AS/NZS 1020: 1995** means the standard on: The control of undesirable static electricity

**AS/NZ 2381.1: 2005** means the standard on: Electrical equipment for explosive gas atmospheres – Selection, installation and maintenance – General requirements

**AS/NZS 2430.3** refers to the following:

- (a) AS/NZS 2430.3.1: 2004 Classification of hazardous areas: examples of area classification: General:
- (b) AS/NZS 2430.3.2: 2004 Classification of hazardous areas: examples of area classification: Vehicle workshops, vehicle parking, fuel dispensing stations and aircraft hangars:
- (c) AS/NZS 2430.3.3: 2004 Classification of hazardous areas: examples of area classification: Flammable liquids:

- (d) AS/NZS 2430.3.4: 2004 Classification of hazardous areas: examples of area classification: Flammable gases:
- (e) AS/NZS 2430.3.5: 2004 Classification of hazardous areas: examples of area classification: Refineries and major installations:
- (f) AS/NZS 2430.3.6: 2004 Classification of hazardous areas: examples of area classification: Laboratories including fume cupboards and flammable medical agents:
- (g) AS/NZS 2430.3.7: 2004 Classification of hazardous areas: examples of area classification: Landfill gas, sewage treatment and sewage pumping plants:
- (h) AS/NZS 2430.3.8: 2004 Classification of hazardous areas: examples of area classification: Surface coatings and adhesives:
- (i) AS/NZS 2430.3.9: 2004 Classification of hazardous areas: examples of area classification: Miscellaneous

**AS/NZS 4360: 2004** means the standard on: Risk Management

**AS/NZS 60079.10: 2004** means the standard on: Electrical apparatus for explosive gas atmospheres – Classification of hazardous areas

**ASTM, when followed by numbers**, means the document identified by those numbers that is published by the American Society of Testing and Materials

**auto-ignition temperature** means the minimum temperature at which a mixture of flammable vapour and air, or gas and air, is marginally self-igniting when tested in accordance with—

- (a) ASTM Standard E 659-78 (1978; reconfirmed 1994) Standard test method for Autoignition Temperature of Liquid Chemicals; or
- (b) AS 1896 (1976) Gas vapour ignition: Ignition Temperature; or
- (c) IEC 79-4 (1975) Method of test for ignition temperature

**compatible** means that the substance—

- (a) is chemically inert if brought into contact with any other substance for the range of temperatures and pressures at which the substances are brought into contact; or
- (b) if it is chemically reactive when brought into contact with any other substance, it does not—
  - (i) cause combustion; or
  - (ii) generate an explosion; or
  - (iii) generate a new hazardous substance of a different class, subclass or category

**condition** means any obligation or restriction imposed upon a substance by a Group Standard

**controlled zone** means an area abutting a hazardous substance location that is regulated so that—

- (a) within the zone, the adverse effects of a hazardous substance are reduced or prevented; and
- (b) beyond the zone, members of the public are provided with reasonable protection from those adverse effects

**fire resistance rating**, in relation to an object or item, means that the object or item is able to maintain its stability, insulation, and integrity, and is able to offer protection against heat radiation for the time specified by the relevant rating in minutes, where **stability**, **insulation**, and **integrity**, respectively, have the meanings ascribed to them in clause A2 of Schedule 1 of the Building Regulations 1992

**general type**, in relation to a hazardous substance, means a general indication of its subclass (for example, “dangerous when wet”) whether given in words or by any other means

**Group Standard** means an approval for a hazardous substance issued by the Authority under Part 6A of the Act

**hazardous substance location** in relation to a class 3.1 flammable liquid—

- (a) means an area where an amount of the flammable liquid that is in excess of the relevant amount specified in Table 1 (see clause 3) is located for more than—
  - (i) 18 hours, in the case of a 3.1B or 3.1C flammable liquid; or
  - (ii) 2 hours, in the case of a 3.1A flammable liquid:
- (b) does not include a vehicle, ship, or aircraft while it remains under the direct control of its driver, master, or pilot and under the jurisdiction of the Land Transport Rules, the Maritime Rules, or the Civil Aviation Rules, as the case may be

**high density**, in relation to a public traffic route, means greater than medium density

**IEC**, when followed by numbers, means the document identified by those numbers that is published by the International Electrotechnical Commission; and **IEC 79-4:1975** means the document on the Method of test for ignition temperature

**ignition source**—

- (a) means any agency or agent (including any item, product, part of a facility structure, or piece of equipment) capable of igniting a flammable gas, vapour, or other form of combustible substance; and
- (b) includes a fire, flame, or spark, or anything capable of producing a fire, flame, or spark

**inspection** means inspection under Part 7 of the Act

**LEL** means lower explosive limit, being the concentration of flammable gas, vapour, or mist in standard air, below which an explosive gas atmosphere will not be formed at 20°C and at 101.3 kPa absolute pressure

**liquid** has the same meaning as in regulation 3 of the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

**low density**, in relation to a public traffic route, means up to an average per 24 hours of—

- (a) 1,000 vehicles on a road; or
- (b) 50 rail wagons on a railway; or
- (c) 400 people on a waterway; or
- (d) 200 people along a public right of way

**medium density**, in relation to a public traffic route, means greater than low density and up to an average per 24 hours of—

- (a) 5,000 vehicles on a road; or
- (b) 250 rail wagons on a railway; or
- (c) 1,800 people on a waterway; or
- (d) 900 people along a public right of way

**NFPA** refers to documents published by the National Fire Protection Association, Quincy, Massachusetts, USA; and **NFPA 86 (1999)** refers to the Standard for ovens and furnaces

**NZS** refers to the New Zealand Standard published by the Standards Association of New Zealand

**NZS 4232.2 (1988)** means the standard on *Fire Resisting Glazing Systems*

**permanent gas** means a gas that has a critical temperature at or below 0°C, where **critical temperature** is the temperature above which the gas cannot be liquefied by increasing the pressure

**person in charge**, in relation to a place, a hazardous substance location, a transit depot, or a place of work, means a person who is—

- (a) the owner, lessee, sublessee, occupier, or person in possession of the place, location, or depot, or any part of it; or
- (b) any other person who, at the relevant time, is in effective control or possession of the relevant part of the place, location, or depot

**place** includes any vehicle, ship, aircraft, or other means of transport

**pooling substance** means a hazardous substance that—

- (a) is a liquid; or
- (b) is likely to liquefy in a fire

**process container** means a stationary container that contains or is intended to contain a hazardous substance in the course of manufacture or use of the hazardous substance (for example, a mixing container, reaction vessel, distillation column, drier, or dip tank)

**quantity-ratio** has the same meaning given to it by regulation 6 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001

**revised minimum ignition energy** means the minimum amount of ignition energy required to ignite a mixture of flammable gas, vapour, or mist in an atmosphere containing a different proportion of oxygen than standard air, when that mixture is within a flammable range

**revised auto-ignition temperature** means the minimum temperature required to ignite a mixture of flammable gas, vapour, or mist in an atmosphere containing a different proportion of oxygen than standard air, when that mixture is within a flammable range

**RLEL<sub>(O)</sub>** means revised lower explosive limit, being the concentration of flammable gas, vapour, or mist in an atmosphere containing a different proportion of oxygen than standard air, below which an explosive gas atmosphere will not be formed

**RUEL<sub>(O)</sub>** means revised upper explosive limit, being the concentration of flammable gas, vapour, or mist in an atmosphere containing a different proportion of oxygen than standard air, above which an explosive gas atmosphere will not be formed

**SADT** (self-accelerating decomposition temperature) has the same meaning as in Schedule 2 of the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

**secondary containment system**, in relation to a place,

- (a) means a system or systems—
  - (i) in which pooling substances held in the place will be contained if they escape from the container or containers in which they are being held; and
  - (ii) from which they can, subject to unavoidable wastage, be recovered; and
- (b) includes a system or systems that comply with a code of practice approved by the Authority under section 78 of the Hazardous Substances and New Organisms Act 1996

**standard air** means air containing 20.9% oxygen (by volume)

**stationary container system** means a stationary tank or process container and its associated equipment, pipework, and fittings, up to and including all transfer points

**stationary tank—**

- (a) means a tank that is—
  - (i) used or intended to be used for the storage or supply of one or more hazardous substances; and
  - (ii) normally located at a specific place; and
- (b) includes—
  - (i) all parts and materials (for example, coatings) that contribute to maintaining the structural and functional integrity of the tank; and
  - (ii) any means of closing the tank (for example, a lid or fitted cover); and
  - (iii) any component of the tank intended to protect the contents of the tank from harm (for example, lightning protection); and
  - (iv) any other component that is an integral part of the tank (for example, a liquid height indicator, heating coil, or internal valve); but
- (c) does not include—
  - (i) packaging to which Part 4 (Packaging) of Schedule 1 to the Group Standard applies; or
  - (ii) packaging to which chapter 6.5, chapter 6.6, and chapter 6.7 of the UN Model Regulations apply; or
  - (iii) a cylinder to which the Hazardous Substances (Compressed Gases) Regulations 2004 apply

**SWRI** means the Southwest Research Institute

**SWRI 95-03** means Test Procedures 95-03: Method for Evaluating the Fire Performance of Testing Requirements for Protected Aboveground Flammable Liquids/Fuel Storage Tanks

**total pooling potential**, in relation to a place, means the aggregate quantity of all pooling substances held in the place

**transit depot** means, in the case of 3.1 flammable liquids, a permanent place (excluding a means of transport, and excluding any place where the substances are held for sale or supply) used as a transport depot that is designed to hold flammable liquids in containers that remain unopened during the time that they are present at the depot for periods that—

- (a) are more than—
  - (i) 18 hours, in the case of a 3.1B or 3.1C flammable liquid; or
  - (ii) 2 hours, in the case of a 3.1A flammable liquid; but
- (b) are in no case more than 3 days

**type 1 building** means a building or room—

- (a) that is constructed in accordance with the following:
  - (i) the floor, walls, ceiling and doors have a minimum fire-resistance rating of 60/60/60 minutes; and
  - (ii) every door—
    - (I) opens towards the outside of the building or room; and
    - (II) is self-closing; and
  - (iii) every window in the building or room complies with NZS 4232.2: 1988; and
- (b) no part of which is occupied as a dwelling; and
- (c) that has a secondary containment system with a capacity of at least 100% of the total pooling potential

**type 2 building** means a building or room—

- (a) that is constructed in accordance with the following:
  - (i) the floor, walls, ceiling and doors have a minimum fire-resistance rating of 120/120/120 minutes; and
  - (ii) every door—
    - (I) opens towards the outside of the building or room; and
    - (II) is self-closing; and
  - (iii) every window in the building or room complies with NZS 4232.2: 1988; and
- (b) no part of which is occupied as a dwelling; and
- (c) that has a secondary containment system with a capacity of at least 100% of the total pooling potential

**type 3 building** means a building or room—

- (a) that is constructed in accordance with the following:
  - (i) the floor, walls, ceiling and doors have a minimum fire-resistance rating of 240/240/240 minutes; and
  - (ii) every door—
    - (I) opens towards the outside of the building or room; and
    - (II) is self-closing; and

- (iii) every window in the building or room complies with NZS 4232.2: 1988; and
- (b) no part of which is occupied as a dwelling; and
- (c) that has a secondary containment system with a capacity of at least 100% of the total pooling potential

**type A building** means a building—

- (a) that is—
  - (i) constructed to provide a platform on which 1 or more containers are located; and
  - (ii) secured to prevent unauthorised access; and
  - (iii) part of a secondary containment system; and
- (b) the following parts of which are made of non-combustible materials:
  - (i) the platform; and
  - (ii) the shelter roof (if any)

**type B building** means a framed building that—

- (a) has non-combustible cladding; and
- (b) is part of a secondary containment system

**type C building** means a building that—

- (a) has a fire rating of 120/120/120 minutes and which is made of structurally strong materials such as brick, block concrete or reinforced concrete; and
- (b) has a roof made of wood and iron or equivalent products; and
- (c) is part of a secondary containment system

**type D building** means a building that—

- (a) has a fire-resistance rating of 240/240/240 minutes and which is made of structurally strong materials such as brick, block concrete or reinforced concrete; and
- (b) has a reinforced concrete roof with a fire rating of 240/240/240 minutes; and
- (c) is part of a secondary containment system

**UEL** means upper explosive limit, being the concentration of flammable gas, vapour, or mist in standard air, above which an explosive gas atmosphere will not be formed

**UN Manual of Tests and Criteria** means the fourth revised edition of the *Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria*, published in 2003 by the United Nations (New York and Geneva)

**UN Model Regulations** means the 14<sup>th</sup> revised edition of the *Recommendations on the Transport of Dangerous Goods Model Regulations*, published in 2005 by the United Nations

**vehicle** means a motorised land transport vehicle

## Source Regulations and Controls

This section links each clause specified in this document to the source regulation or transfer notice from which the clause is based. The requirements of these regulations and controls have been incorporated as conditions verbatim, save for simplification to remove redundant text that does not apply to class 3.1 flammable liquids.

Clause in this document	Relevant regulation/transfer notice
1	Classes 1 to 5 Controls <sup>1</sup> – Regulation 6
2	Classes 1 to 5 Controls – Regulation 7
3	Classes 1 to 5 Controls – Regulation 55
4	Classes 1 to 5 Controls – Regulation 58
5	Classes 1 to 5 Controls – Regulation 59
6	Classes 1 to 5 Controls – Regulation 60
7	Classes 1 to 5 Controls – Regulation 61
8	Classes 1 to 5 Controls – Regulation 62
9	Classes 1 to 5 Controls – Regulation 63
10	Classes 1 to 5 Controls – Regulation 64
11	Classes 1 to 5 Controls – Regulation 65
12	Classes 1 to 5 Controls – Regulation 66
13	Classes 1 to 5 Controls – Regulation 67
14	Classes 1 to 5 Controls – Regulation 68
15	Classes 1 to 5 Controls – Regulation 69
16	Classes 1 to 5 Controls – Regulation 70
17	Classes 1 to 5 Controls – Regulation 76
18	Classes 1 to 5 Controls – Regulation 77
19	Classes 1 to 5 Controls – Regulation 81
20	Classes 1 to 5 Controls – Regulation 83
21	Dangerous Goods Transfer Notice <sup>2</sup> – Schedule 10, Clause 4
22	Dangerous Goods Transfer Notice – Schedule 10, Clause 10
23	Dangerous Goods Transfer Notice – Schedule 10, Clause 11
24	Dangerous Goods Transfer Notice – Schedule 10, Clause 12
25	Dangerous Goods Transfer Notice – Schedule 10, Clause 12A
26	Dangerous Goods Transfer Notice – Schedule 10, Clause 13
27	Dangerous Goods Transfer Notice – Schedule 10, Clause 14
28	Dangerous Goods Transfer Notice – Schedule 10, Clause 15
29	Dangerous Goods Transfer Notice – Schedule 10, Clause 16
30	Dangerous Goods Transfer Notice – Schedule 10, Clause 16A
31	Dangerous Goods Transfer Notice – Schedule 10, Clause 4
32	Dangerous Goods Transfer Notice – Schedule 10, Clause 18
33	Dangerous Goods Transfer Notice – Schedule 10, Clause 23
34	Dangerous Goods Transfer Notice – Schedule 10, Clause 24
35	Dangerous Goods Transfer Notice – Schedule 10, Clause 25
36	Dangerous Goods Transfer Notice – Schedule 10, Clause 25A
37	Dangerous Goods Transfer Notice – Schedule 10, Clause 25B

Clause in this document	Relevant regulation/transfer notice
38	Dangerous Goods Transfer Notice – Schedule 10, Clause 26
39	Dangerous Goods Transfer Notice – Schedule 10, Clause 27
40	Dangerous Goods Transfer Notice – Schedule 10, Clause 28
41	Dangerous Goods Transfer Notice – Schedule 10, Clause 29
42	Dangerous Goods Transfer Notice – Schedule 10, Clause 31
43	Dangerous Goods Transfer Notice – Schedule 10, Clause 32
44	Dangerous Goods Transfer Notice – Schedule 10, Clause 33
45	Dangerous Goods Transfer Notice – Schedule 10, Clause 34
46	Dangerous Goods Transfer Notice – Schedule 8
47	Emergency Management <sup>3</sup> – Regulation 21
48	Emergency Management – Regulation 22
49	Emergency Management – Regulation 23
50	Emergency Management – Regulation 25
51	Emergency Management – Regulation 27
52	Emergency Management – Regulation 28
53	Emergency Management – Regulation 29
54	Emergency Management – Regulation 30
55	Emergency Management – Regulation 31
56	Emergency Management – Regulation 32
57	Emergency Management – Regulation 33
58	Emergency Management – Regulation 34
59	Emergency Management – Regulation 36, with changes to the regulation by the Dangerous Goods Transfer Notice.
60	Emergency Management – Regulation 37
61	Emergency Management – Regulation 38
62	Emergency Management – Regulation 39
63	Emergency Management – Regulation 40
64	Emergency Management – Regulation 41
65	Dangerous Goods Transfer Notice – Schedule 9, Clause 1
66	Dangerous Goods Transfer Notice – Schedule 9, Clause 2
67	Dangerous Goods Transfer Notice – Schedule 9, Clause 2A
68	Dangerous Goods Transfer Notice – Schedule 9, Clause 3
69	Identification – Regulation 51 <sup>4</sup>
70	Identification – Regulation 52; Emergency Management – Regulation 42

1. Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.
2. Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.
3. Hazardous Substances (Emergency Management) Regulations 2001.
4. Hazardous Substances (Identification) Regulations 2001.