

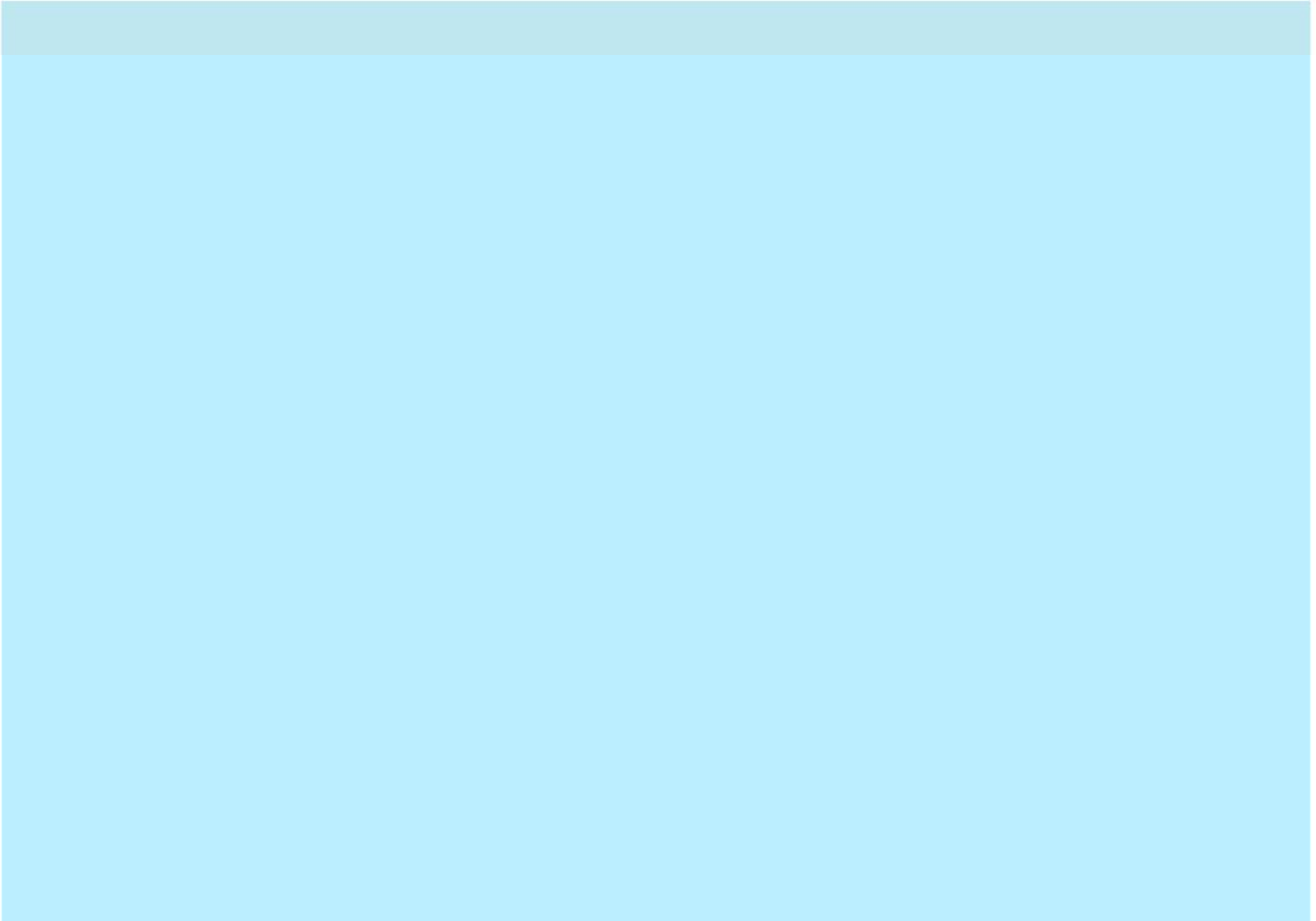


Environmental
Protection Authority
Te Mana Rauhi Taiao

Performance Standard for Secondary Containment

For Test Certifiers

JULY 2012



PERFORMANCE STANDARD

Preface

This standard document is one of a series produced by the Environmental Protection Authority (EPA) to assist test certifiers in their certification work. The EPA expects all test certifiers to adhere to the information given. The performance of test certifiers will be audited against these standards, as will any complaint made against a test certifier.

This document is not intended to be a comprehensive review of the relevant regulations. It covers those items subject to test certification. If in doubt, refer to the appropriate regulations or site and storage document.

This standard does not address the test certification of class 1 explosive substances.

This document includes checklists and supporting forms for test certifiers to use. These checklists (or equivalent) must be completed and kept for future reference and audit.

This standard was updated in 2012.

Introduction

This standard establishes the test certificate requirements for secondary containment under the emergency management provisions of the Hazardous Substances and New Organisms Act, 1996.

Test certificates must be held for:

- locations where flammable and oxidising classes¹ of hazardous substances are present, and
- stationary container systems, where combustible², toxic, corrosive or ecotoxic³ substances are present that do not have a flammable (other than combustible) or oxidising classification

The test certifier must certify that a hazardous substance location or a stationary container system has a secondary containment system in place, as required by the emergency management regulations.

Any non-compliance with the controls must be noted and the person in charge advised of the shortcomings. Non-compliances must be rectified before the test certificate can be issued or renewed. If the non-compliance is minor and technical the test certifier must consider issuing a conditional location test certificate. For further information see *Performance Standard for Conditional Location Test Certificates* (EPA0022). If a test certificate cannot be issued, you must notify the enforcement agency, the Ministry of Business, Innovation and Employment (MBIE).

This standard is designed to:

- set out the criteria specified in the legislation to ensure compliance with the secondary containment controls that are subject to test certification
- advise test certifiers of the components of the test certificate
- ensure assessments are consistent and that the test certifier is able to identify the reason for issuing or not issuing a test certificate
- provide test certifiers with a record of their assessment
- provide a point of reference against which the performance of test certifiers may be audited
- provide a point of reference for the investigation of any complaint levelled against a test certifier

It refers to the relevant parts of:

- Hazardous Substances (Emergency Management) Regulations 2001, referred to as the emergency management regulations
- Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001, referred to as the classes 1 to 5 controls regulations
- Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004, referred to as the Transfer Notice
- Group Standards
- Site and storage conditions for group standards⁴, referred to as the site and storage conditions
- Code of Practice for Secondary Containment Systems (CoP47)

¹ Classes 3, 4 or 5

² Class 3.1D

³ Classes 6, 8 and 9

⁴ The secondary containment conditions set out in the site and storage documents repeat the emergency management regulations controls. The clause numbers vary from group standard to group standard and consequently are not referenced in this document.

Hazardous substance location test certificates

A hazardous substance location test certificate must be issued where flammable and oxidising classes of hazardous substances exceed their respective threshold quantities. The threshold limits for a hazardous substance location are set out in Schedule 3, Table 4 of the classes 1 to 5 controls regulations or in the site and storage conditions. Toxic, corrosive and ecotoxic substances are not part of the location test certificate and do not need to be examined.

The test certificate must list the hazardous substance locations that have been certified at a place as well as the classifications involved so that the person in charge is in no doubt regarding the extent of the assessment.

When does secondary containment need to be test certified?

If a place holds or is likely to hold a quantity of hazardous substances of a particular hazard classification greater than the threshold specified in Schedule 4 of the emergency management regulations, a secondary containment system is needed.

Which regulations must be certified?

- Regulations 25 and 36 to 41 of the emergency management regulations are to be certified as being complied with
- Regulation 36 must be read in conjunction with regulation 25, it is the capacity of the container that must be considered and not what it might contain
- Regulation 36(2A) requires the quantities in different sized packages be aggregated
- Regulations 37 to 39 define the capacity of the secondary container system
- Regulation 40 is specific to storage below ground and requires the secondary containment system to have a capacity at least equal to the total pooling potential
- Regulation 41 is about excluding energy and ignition sources that are capable of causing ignition or thermal decomposition
- For a substance subject to a group standard, the conditions are set out in the site and storage conditions

What is the capacity of the secondary containment system?

The capacity required of the secondary containment system for flammable and oxidising classifications is set out in Table 1.

Table 1: Minimum Capacity Requirements for Secondary Containment

Container Size	Quantity – Total Pooling Potential (TPP)	
	Less than 5,000 litres	Greater than or equal to 5,000 litres
≤ 60 litres	At least 50% TPP	2,500 L or 25% TPP whichever is the greater
> 60 and up to 450 litres	At least 100% TPP	5,000 L or 50% TPP whichever is the greater
> 450 litres	At least 110% of the capacity of the largest container	
Below ground	At least 100% TPP	

Are there exceptions to the secondary containment controls?

The controls may have been varied in the Transfer Notice. These variations are then reflected in the site and storage documents. Of particular note is:

- the storage of petrol, aviation gasoline and racing gasoline
- the storage of fuel on farms
- an additional subclause to regulation 36 of the emergency management regulations that deals with secondary containment for pipe work
- that the Authority may, on application, modify the aggregate capacity limit of a group of stationary containers, Schedule 9, Clause 2 of the Transfer Notice
- that a reduction in the capacity of the secondary containment system may be approved by the Authority, or allowed if in accordance with a code of practice, Schedule 9, Clause 3 of the Transfer Notice

Exceptions to the HSNO regulations are allowed under certain conditions for 'existing' locations (i.e. those that were in place at the time of transfer). The exceptions are set out in the following approved codes:

- Code of Practice for the Management of Existing Stationary Container Systems up to 60,000 litres Capacity. See clauses 2.9, 3.2, 4.3, 5.2, 6.3, 7.2, 8.3, 8.4, and Appendix 4
- Code of Practice for the Management of Existing Stationary Container Systems at Timber Treatment Facilities
- Code of Practice for Above Ground Stationary Tanks with Integral Secondary Containment

What is to be test certified?

The test certifier must certify that:

- where the quantities of flammable and oxidising substances require secondary containment, secondary containment is in place
- the capacity of the secondary containment meets the legislative requirements
- the substance can, subject to unavoidable wastage, be recovered, and
- controls are in place to:
 - exclude any energy or ignition sources, and
 - prevent contamination

What must be achieved by the containment system?

For a secondary containment system, the following emergency management regulations must be satisfied:

- The secondary containment system has sufficient capacity to contain the minimum quantity required by the legislation, regulations 37, 38, 39 and 40
- The substances can be contained if they escape from the container, regulation 35(a)(i)
- The substances can be recovered subject to unavoidable wastage, regulation 35(a)(ii)
- The system complies with an approved Code of Practice, regulation 35(b)
- That where classes 3 to 5 substances are contained, sources of energy capable of causing them to ignite or decompose thermally are excluded, regulation 41(b)
- That controls prevent the substance from being contaminated by incompatible substances and materials, regulation 41(d)

See the Code of Practice for Secondary Containment Systems (CoP47) for further information.

What evidence is needed of the ability to contain the substance?

The person in charge must satisfy the test certifier that the regulations are being complied with. Sufficient evidence would be to demonstrate compliance with accepted engineering principles and practices designed to achieve these performance standards.

Confirmation might take the form of:

- compliance with a recognised standard such as AS 1940⁵, NZS/AS 3833⁶ or a Code of Practice approved by the Authority or other government agency
- an engineers' "as built" report and drawings

⁵ AS1940 *The storage and handling of flammable and combustible liquids.*

⁶ AS/NZS3833 *The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers*

- records of testing of the bund such as those recommended in the Ministry for the Environment publication *Above-ground Bulk Tank Containment Systems*, that deals with petroleum products in above-ground bulk storage tank containment systems. Section 8 deals with the means of achieving satisfactory containment standards, Section 10 refers to permeability testing
- an inspection programme that provides evidence that the bund holds water, there are no damp patches on the walls or at the base, and there are no drain holes or obvious breaches

See the Code of Practice for Secondary Containment Systems (CoP47) for further information.

Stationary container system test certificates

For stationary container systems, Part 4 of the emergency management regulations is relevant. In this case the secondary containment system must be test certified where a stationary tank contains a combustible, toxic, corrosive or ecotoxic substance that does not have another flammable or oxidising classification and stationary container system capacity criteria are exceeded. The requirement is set out in Schedule 8, clause 92(2)(d) of the Transfer Notice.

When does secondary containment need to be test certified?

The capacity criteria for a test certificate are:

- a below ground tank
- an above ground tank with a capacity of more than 5,000 litres
- a below ground process container, or
- an above ground process container with a capacity of more than 1,000 litres

Which regulations must be certified?

The emergency management regulations specified earlier (p. 4) have to be followed, but with the following variations:

- the references to packages will not apply, regulations 36(2A), 37 and 38
- control of energy sources will be relevant only to combustible substances, regulation 41(b)
- if the substance has a toxic or biological corrosive substance class, people must be prevented from being directly exposed to the substance, regulation 41(c)

What is the capacity of the secondary containment system?

The secondary containment provisions for storage tanks and process containers subject to test certification are the same as for tanks for flammable liquids.

Table 2: Minimum Capacity Requirements for Secondary Containment

Quantity – Total Pooling Potential (TPP)	
> 450 litres	At least 110% of the capacity of the largest container
Below ground	At least 100% TPP

Are there exceptions to the secondary containment controls?

The same exceptions apply to stationary container systems as to location test certificates (see *Are there exceptions to the secondary containment controls?* page 5).

What is to be test certified?

The test certifier must certify that:

- where the quantities of toxic, corrosive and ecotoxic substances require secondary containment, secondary containment is in place
- the capacity of the secondary containment meets the legislative requirements
- the substance can, subject to unavoidable wastage, be recovered, and
- controls are in place to:
 - prevent people from being directly exposed to the substance, if it is a toxic or biological corrosive substance, and
 - prevent contamination

See the Code of Practice for Secondary Containment Systems (CoP47) for further information.

What is required of a secondary containment system?

The same requirements apply to stationary container systems as to location test certificates (see *What must be achieved by the containment system?* page 6).

What evidence is needed of the ability to contain the substance?

The same requirements apply to stationary container systems as to location test certificates (see *What evidence is needed of the ability to contain the substance?* pages 6-7).

Appendix 1: Checklist for Secondary Containment

This assessment is for evaluating the secondary containment element of a location or stationary container test certificate.

Test certifiers should complete this checklist as part of their assessment when certifying a location. If any of the controls are not met a test certificate must not be issued. The test certifier must advise the client and MBIE of any deficient items.

Care must be taken to ensure that a conflict of interest does not arise as a result of any recommendation or advice given by a test certifier in the event a test certificate is not issued.

Premises/Company:	
Contact Name:	
Physical Address:	
Date of Assessment:	
Test Certifier:	
Notes:	

Threshold Quantities

Item	Details	Comments/Recommendations				
1	The facility has an inventory of hazardous substances	Yes/No	If "No" advise the person in charge to prepare one.			
2	The threshold quantities have been established	Yes/No	If "No" advise the person in charge to determine the threshold quantities.			
3	Thresholds quantity exceeded for the following hazard classifications	Substance	Classification	Quantity	Threshold	Exceeded Yes/No

Secondary Containment (Hazardous substance locations)

Item	Requirement	Complies Yes/No	Evidence of Compliance
4	The capacity of the secondary containment system to hold a pooling substance has been determined Regulations 37, 38, 39 and 40		
5	The secondary containment system has sufficient capacity to contain the minimum quantity required by the legislation		
6	The substances will be contained if they escape from the container. Regulation 35(a)(i)		
7	The substances can be recovered subject to unavoidable wastage. Regulation 35(a)(ii)		

Item	Requirement	Complies Yes/No	Evidence of Compliance
8	<p>The system complies with a Code of Practice approved by the Authority. Regulation 35(b)</p> <p><i>Note:</i> Codes of Practice that address secondary containment are:</p> <ul style="list-style-type: none"> • management of Existing Stationary Container Systems up to 60,000 litres Capacity • above Ground Stationary Tanks with Integral Secondary Containment, and • management of Existing Stationary Container Systems at Timber Treatment Facilities 		
9	<p>Sources of energy capable of causing ignition or thermal decompose are excluded where class 3 and 5 substances are present</p> <p>Regulation 41(b)</p>		
10	<p>Direct exposure of people is prevented where toxic or biological corrosive substances are present</p> <p>Regulation 41(c)</p>		
11	<p>Controls prevent the substance from being contaminated by incompatible substances and materials</p> <p>Regulation 41(d)</p>		

Secondary Containment (Stationary containment systems)

Location or Tank Number ⁷	Description ⁸	Total Pooling Potential (TPP) (litres)	Secondary Containment Capacity Required (litres)	Secondary Containment Capacity Provided (litres)	Complies Yes/No

⁷ Provide a unique tank number, location or identification on the site plan..

⁸ The description must be sufficient to ensure that each tank can be unequivocally identified.



Environmental
Protection Authority
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Level 10, 215 Lambton Quay, Wellington 6011, New Zealand

