



**154.02.05**

# **Standard for Avian Transitional Facilities**

**MAF Biosecurity New Zealand  
Ministry of Agriculture and Forestry  
P O Box 2526  
Wellington  
New Zealand**

# MAF Standard for Avian Transitional facilities.

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## Introduction

This MAF Standard is divided into four parts.

1. **Part One** specifies the planning and approval requirements.
2. **Part Two** covers construction requirements for operators of facilities holding eggs and birds that have been directed on arrival in New Zealand to a transitional (quarantine) facility as a requirement of an import health standard.
3. **Part Three** specifies the operating requirements for operators of transitional facilities.
4. **Part Four** specifies the requirements for the supplier of supervision of transitional facilities for birds to ensure that operators are in compliance with Parts One, Two and Three.

The primary purpose of quarantine is to minimise the risk of introducing infectious agents and their transmission into susceptible species in New Zealand.

## ***Endorsement***

This Standard is approved pursuant to sections 39 and 40 of the Biosecurity Act 1993.

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Matthew Stone  
Deputy Chief Technical Officer  
[Acting pursuant to delegated authority]

Date:

## ***Review***

This MAF Standard is subject to review and amendment at any time, to ensure that it continues to meet current needs. Amendments will be issued to holders of controlled copies and operators of transitional facilities approved under this Standard.

## ***Amendment Record***

Amendments to this Standard will be given a consecutive number and will be dated.

Please ensure that all amendments are inserted, obsolete pages removed and the record below is completed.

| Amendment No: | Entered by:  | Date:      |
|---------------|--------------|------------|
| 1             | Sally Aitken | 23/03/2010 |
| 2             |              |            |
| 3             |              |            |
| 4             |              |            |
| 5             |              |            |

## ***References***

This Standard is an approved standard in terms of sections 39 and 40 of the Biosecurity Act, 1993.

The following publications are referred to in this MAF Standard:

- AS/NZS ISO 9001:2000 Quality management systems - Requirements.
- ISO/IEC 17020 General criteria for the operation of various types of bodies performing inspection.
- Import health standards for birds that have a requirement for transitional facilities.
- NZ Building Code Handbook
- SMACNA Sheetmetal and Air Conditioning Contractors National Association Standard (high or low pressure as applicable)
- DW-142 'Specification for Sheetmetal Ductwork' published for the Heating and Ventilation Contractors Association, London.
- AS 1807.10 for determination of air pressure in the rooms.
- ASHRAE Standard 111-1988 for measurement of air flow-rates
- CIBSE Commissioning Code Series A for measurement of air flow-rates.

## ***Definitions***

For the purposes of this Standard the following definitions apply:

### **Approval**

Means approved by the Director-General, MAF, or any person that has delegated power for this Standard.

### **Approved Disinfectant**

A disinfectant approved by MAF for animal disease prevention at the border. The supervisor has access to the list and it is also available on the MAF Biosecurity New Zealand web-site:

<http://www.maf.govt.nz/biosecurity/border/transitional-facilities/index.htm>

**Approved Seal**

A seal e.g. Tyden seal or padlock, approved by MAF to ensure that between application and removal security has been maintained.

**Audit**

An evaluation to determine the degree of conformity with prescribed criteria and provide a basis for ongoing improvement.

**Biosecurity clearance**

A clearance under section 26 of this Act for the entry of goods into New Zealand: Biosecurity Act, 1993.

**Biosecurity direction**

Authority from an inspector, given under section 25 of the Biosecurity Act, to move uncleared goods to a transitional facility, containment facility or biosecurity control area.

**Compliance certificate**

The compliance certificate provides verification of the physical construction and performance of critical containment components as required in this Standard.

**Chief technical officer**

Is the Deputy chief technical officer [as defined in section 101 of the Biosecurity Act, 1993] of MAF with responsibility for animal health in New Zealand.

**Containment perimeter**

All surfaces and other components that together make up the enclosure which is intended to contain the Risk Goods.

**Director-General**

The chief executive of the Ministry of Agriculture and Forestry or his/her delegate.

**HVAC**

Heating, ventilation and air conditioning systems.

**Import health standard**

A document issued under section 22 of the Biosecurity Act, 1993, which specifies the requirements to be met for the effective management of risks associated with importation of risk goods before those goods may be imported, moved from a biosecurity control area or a transitional facility, or given a biosecurity clearance.

**Inspector**

A person appointed as an inspector under the Biosecurity Act, 1993.

**Internal audit**

An audit carried out by the company or organisation to evaluate its own performance in relation to the Standard or prescribed criteria.

**Laboratory**

The National Centre for Biosecurity and Infectious Disease at Wallaceville and any other laboratory approved by the chief technical officer.

**Operator**

The person who has overall responsibility for the facility, its maintenance and operation in terms of section 40 of the Biosecurity Act, 1993.

**Permit**

Authorisation issued by the supervisor for entry/exit of people, birds and goods onto or off the transitional facility. For the purpose of this Standard a permit will include biosecurity directions.

**Permit to import**

A numbered document issued as a requirement of the import health standard.

**Procedure**

A document that specifies, as applicable, the purpose and scope of an activity; what must be done and by whom; when, where, and how it shall be done; what materials, equipment, and documentation shall be used; and how it shall be controlled.

**Quarantine**

Confinement of organisms or organic material that may be harbouring pests or unwanted organisms. Section 2, Biosecurity Act, 1993.

**Quarantine period**

A minimum period of quarantine as specified in the import health standard.

**Risk goods**

Any organism, organic material, or other thing or substance, that (by reason of its nature, origin, or other relevant factors) it is reasonable to suspect constitutes, harbours, or contains an organism that may-

- (a) Cause unwanted harm to natural and physical resources or human health in New Zealand; or
- (b) Interfere with the diagnosis, management, or treatment, in New Zealand, of pests or unwanted organisms: Section 2, Biosecurity Act, 1993.

**Supervisor**

A registered veterinarian and inspector employed, or contracted by the supplier, who inspects the transitional facility and audits the operation of quarantine [See 5.2.2].

**Supplier**

The party responsible for the performance of the inspection and audit.

**Technical Representative**

A registered engineer or mechanical services consultant/engineer who is fully experienced in and has the qualifications required to issue a compliance certificate, and who has no financial interest in the facility or the imported birds and eggs (other than proper remuneration for services rendered).

**Transitional facility**

Any place approved as a transitional facility in accordance with section 39 for the purpose of inspection, storage, treatment, quarantine, holding, or destruction of specified types of uncleared goods; or part of a port declared to be a transitional facility in accordance with section 39.

**Uncleared goods**

Imported goods for which no biosecurity clearance has been given.

**Unwanted organisms**

Any organism that a deputy chief technical officer believes is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health: Section 2, Biosecurity Act 1993.

**Vermin**

Includes wild birds, mammals (except people) and flying insects.

# **Part One: Planning and approval**

## **1.1 General Requirements**

The transitional facility must be constructed and operated in a manner that contains in isolation the imported eggs, birds, their progeny and any associated organisms – particularly avian pathogens.

During the quarantine period the operator must ensure that no eggs or birds, or any other material may be removed from quarantine without approval of the supervisor. The supervisor must use a permit system and the conditions of removal must address the risk of removing organisms from the facility.

When approved as a transitional facility the facility must not be used for any purpose other than the quarantine of eggs and birds. (The approval can be revoked, by contacting MAF on completion of quarantine, and approved again before the next scheduled quarantine.)

The operator, or member of staff authorised to take charge in the operator's absence, must live on or near the facility.

If birds are to be imported then the facility must be located within 3 hours of the international airport of arrival. Planning for the transport must take into account the welfare needs of the imported birds as well as those of biosecurity.

### **1.1.1 Construction standards**

It is important that the facility is constructed according to construction standards in common use. This is to ensure that the design intent is met, and to minimise the risk of breakdown or failure of the systems or enclosure due to the use of components or practices that have not been proven reliable in service.

### **1.1.2 Layout**

The facility must consist of a quarantine area and an ancillary service area attached to the quarantine area. The quarantine area must, as a minimum, provide areas for:

- Egg incubation (for egg imports).
- Bird accommodation (the bird room).
- Feed storage.
- Clothes washing and drying facilities.
- Refrigeration or freezer facilities.
- Solid waste and liquid waste storage.

The ancillary service area must, as a minimum, provide:

- An outer changing room with space for the storage of street clothes and footwear.
- This room may be part of the ancillary area, or may be separate but must adjoin the ancillary area.

Doors must be provided between the ancillary area and outside, and between the ancillary area and the quarantine area, arranged so that the ancillary area acts as an air-lock between the quarantine area and outside. The containment perimeter must encompass the whole of the quarantine area, and the ancillary area when the door between the quarantine area and the ancillary area is open. The containment perimeter must thus oscillate in position, aligned with either the outer or inner door as the two doors open and close. When the facility is in use all access into and out of the quarantine area must be via the ancillary area.

A prominent sign must be displayed at entrances to the facility to show that it is a quarantine facility and that unauthorised entry is prohibited. To deter the entry of unauthorised people the transitional facility shall be surrounded by a rigid stock proof fence at least 2 metres high and a minimum of 6 metres distance from the facility.

### **1.1.3 Systems**

Systems must be provided for ventilation air supply, creation of internal negative pressure, air filtration, waste treatment and disposal.

## **1.2 Approval of a Facility and an Operator**

### **1.2.1 Approval of a Facility**

A transitional facility must be approved in accordance with section 39 of the Biosecurity Act 1993. It must have an approved operator and be constructed and operated in accordance with this Standard.

[It is also expected that the facility will comply with the requirements of the Resource Management Act, 1991, Building Act, 1991 and any other relevant legislation.]

A facility must not be approved unless there is an approved operator.

#### **1.2.1.1 Procedure for approval of a transitional facility**

Any person wishing to have a facility approved and to be approved as an operator must establish contact with the supervisor. [The supervisor's identity may be obtained from the supplier.]

The supervisor will consider applications before construction or alteration of a facility, in order to provide advice on whether the proposed facility is likely to comply with this Standard.

#### **1.2.1.2 Site approval**

An application for site approval must be submitted to MAF through the supervisor before construction of a facility is considered. [If the site is not approved then there is no value in investing resources into developing the facility.]

Site approval is required even if a building is already in place. The application for site approval must provide the following:

- Details of the proposal, including the proposed importation programme, the species, and the maximum number and type of birds that can be held in the facility.
- A site plan of the property which shows the location of the proposed facility and the entrances to the site. Boundaries of neighbouring properties must be shown. The physical location of the property must be clearly shown in relation to roads in the area.
- Agreement from the operator to pay the costs associated with the inspection visits. The operator needs to be aware of that the supervisor is required to make frequent visits to the facility (see Part 4).
- Procedures for the transport and handling of birds or eggs from the port of arrival in New Zealand to placement within the facility. In relation to the transport of birds show that the facility is located within a three-hour journey of the port of arrival in New Zealand.
- Procedures to ensure that the birds are isolated from other birds and contained to prevent escape on the journey. Identify the animal welfare measures that will be instituted for birds on the journey.
- Evidence from the relevant regional council and/or district council that the proposed operation satisfies planning requirements under the Resource Management Act, Building Act or any other relevant legislation under which these Councils have jurisdiction. The Director-General must also be satisfied that the Local Authority has been properly informed about the project and, if appropriate, has issued a building consent to construct the facility.
- A recommendation from the supervisor for site approval, which includes verification of the site's physical location.

Site approval from MAF must be in writing.

### **1.2.1.3 Facility approval**

When the operator has met the requirements of sections 1.2.1.2, 1.2.1.3, & 1.2.1.4 of this Standard, the supervisor shall be requested to inspect the quarantine manual and the facility. When the supervisor is satisfied that:

- the operator has met the structural requirements of a facility as required in this Standard,
- the quarantine manual (section 1.3) meets the requirements of this Standard,
- the application form for approval of a Transitional Facility for Birds in Section 4.2.4.10 of this Standard has been completed satisfactorily by the prospective operator,

the application form and a copy of the quarantine manual must be sent by the supervisor to MAF, together with the supervisor's written recommendation for approval of the facility.

The prospective operator may apply for registration as an operator at this time (see section 4.2.4.10).

Approval of a transitional facility will be in writing. A facility will usually be approved for a specific event, i.e. a quarantine period, but it may be approved for an unspecified time.

Only when the facility has been approved may it be used for the quarantine of imported eggs and birds.

### **1.2.1.4 Modifications to an approved facility**

Subsequent to approval, the supervisor must be notified of any modifications or changes to the facility.

A new floor and/or site plan may be required. A major modification is defined as a modification that potentially affects the integrity of quarantine. When modifications have been completed they must be inspected by the Supervisor to check that the facility continues to meet this Standard. Minor modifications should be recorded and checked by the supervisor at the next visit.

### **1.2.1.5 Renewal of approval**

If approval was cancelled at the end of a quarantine period the operator must apply to the supervisor for renewal of approval before a permit to import may be issued for another shipment of eggs or birds.

## **1.2.2 Approval of the Operator**

The operator is responsible for the operation of a facility and ensuring that mechanisms are in place for resourcing the facility.

An operator must be approved in accordance with section 40 of the Biosecurity Act, 1993. If the Director-General is satisfied:

- that the applicant is a fit and proper person to be the operator of the facility specified in the application and
- the applicant is able to comply with the operating standards for that facility,

s/he may approve the applicant as the operator of the facility.

The operator must provide the Director-General with consent as required in the form in Section 4.2.4.10, 'Consent to Disclosure of Convictions'. This information provides a basis for the approval decision (see also section 1.2.2.2).

The operator must satisfy the supervisor that s/he has the technical and financial resourcing mechanisms in place to maintain that facility. The technical resources must be provided by a person or persons in authority (identified in section 1.3.3) with the qualifications, training and experience for ensuring that both the structure of the facility and the operating procedures used in the facility are appropriate for the quarantine of birds.

Approval of the operator will be in writing.

### **1.2.2.1 Leased facilities**

If the facility is leased, the lessee is responsible for the operation of the facility must apply to be the operator. The contract with the owner must clearly identify who is responsible for the maintenance of the premises and the resourcing of the operation. The supervisor must be satisfied that no part of the lease contract shall override the requirements of this Standard for the operation of the facility.

### **1.2.2.2 Collection of personal information on individuals**

In regard to any information being collected on the application for approval as an operator, this is personal information [being information identifying or being capable of identifying an individual person]. Notification is hereby provided, in accordance with Principle 3 of the Privacy Act 1993, to individuals of the following matters:

- This information is being collected for the purposes relating to the approval as an operator as per section 40 of the Biosecurity Act, 1993.
- The recipient of this information, which is also the agency that will collect and hold the information, is the Ministry of Agriculture and Forestry, PO Box 2526 Wellington.
- You are reminded that under Principles 6 and 7 of the Privacy Act, 1993, you have the right of access to, and correction of, any personal information which has been provided.

### **1.2.3 Cancellation of Approval**

A facility is no longer approved when the time specified in the approval expires or an event specified in the approval occurs. In addition a chief technical officer may cancel approval of a facility if:

- the facility no longer complies with this Standard,
- the chief technical officer is satisfied that the facility is no longer used for the purpose(s) specified in the approval,
- the operator ceases to be an operator of the facility,
- the operator is no longer a fit and proper person,
- the operator requests cancellation.

The chief technical officer may cancel approval of an operator if:

- no longer satisfied that the facility is being operated according to this Standard,
- the operator ceases to be an operator of the facility,
- the operator is no longer a fit and proper person,
- the operator requests cancellation.

Notice of cancellation must be given in writing to the operator.

## **1.3. Quarantine Manual**

The operator must prepare, maintain and implement a quality assurance programme and procedures based on the principles of AS/NZ 9002, code of good manufacturing practice or similar quality system. Accreditation with other agencies such as IANZ is not required.

The quality assurance programme and any amendments must address the requirements of this Standard. It must be documented in a quarantine manual or in an alternative quality system e.g. standard operating procedures.

The supervisor must approve the quality assurance programme and any amendments.

The items listed below are the minimum requirements for the quarantine manual or alternative quality system.

### **1.3.1 General**

Describe the main purpose of the business associated with the import of birds.

### **1.3.2 Quarantine Requirements**

Document the procedures used in the transitional facility to meet all of the requirements of the import health standard and section 1.3.8 of this Standard.

Identify the technical representative.

### **1.3.3 Management**

Identify the operator. Identify the manager if the operator nominates one. Identify the staff working in the facility.

Specify and document the responsibilities of the operator, the manager, technical representative and staff.

### **1.3.4 Training**

Nominate a person or position responsible for ensuring that all people who work in the facility are familiar with the principles of quarantine and the procedures of the facility which ensure quarantine and containment.

Describe how the training programme is to be implemented, the time scale for implementation and refresher courses.

Document training records for all staff.

### **1.3.5 Internal Controls**

Identify quality systems used in the facility.

The operator must ensure that an internal audit is carried out at least once every six months to verify that the activities associated with the facility continue to comply with the quality assurance programme. If the facility is not in continuous use the operator must perform an internal audit on each occasion that it is used.

The operator must ensure that the quality system is reviewed at least once a year to ensure that it is appropriate and effective, and to introduce any necessary changes or improvements.

All audit and review findings and any corrective actions must be documented.

### **1.3.6 Operating and Maintenance Manual**

The Quarantine Manual must also include an Operation and Maintenance Manual for the facility and its systems that must provide:

- A detailed description of any structural components of the facility that require periodic inspection or maintenance to preserve the integrity of the containment perimeter;

- A clear description as to how all the functioning systems of the facility operate, with particular attention paid to the design principles involved. The functioning systems include HVAC, water supply, liquid waste, alarms, power supply, standby power supply, fire protection and security;
- Clear instructions on how to use the functioning systems, including procedures to be followed in the event of any reasonably foreseeable emergency;
- Clear maintenance instructions for all components of the functioning systems that require periodic inspection or maintenance to preserve the integrity of the containment perimeter;
- A complete list of spare parts required for the systems, taking into account the geographical location of the facility and the lead time for supply of spare parts from the manufacturer.
- A complete set of “as built” and “as modified” drawings, including a plan showing the location of the facility in relation to the access road.

The Operating and Maintenance Manual and drawings are to be neatly updated whenever any changes are made to the layout, structure or functioning systems and submitted as approved by the operator’s technical representative.

### ***1.3.7 Version of quarantine manual***

Record the version number and issue date of the quarantine manual on each page. Updates are to be approved by the supervisor who must also hold an up to date copy of the manual.

### ***1.3.8 Procedures***

Develop procedures for all the operational aspects of the facility including the following.

#### **1.3.8.1 Liquid waste**

- Monitor the level of liquid waste in the storage tanks, and to carry out treatment as required (refer section 3.1.2.2).
- Minimise the risk of contaminated or potentially contaminated liquid escaping from the facility via toilets and urinals.
- Minimise the risk of a drain valve being left open on a liquid waste treatment tank, allowing untreated waste to flow out of the facility.

#### **1.3.8.2 Solid waste**

- The provision of special clothing and footwear for use only within the facility.
- Minimise the risk of transport of solid waste on personnel leaving the containment area. This procedure must include the requirement for showering as in Section 3.2.2.1.
- Minimise the risk of contaminated or potentially contaminated solid waste escaping from the facility via toilets and urinals.

### **1.3.8.3 Other procedures**

Refer to Section 3 for further procedures that are to be adopted.

## **Part Two: Construction requirements**

### **2.1 Introduction**

Many of the aspects of successful quarantine are dependent on the quality of construction of the building, so the format of Part Two has been chosen to reflect that of the NZ Building Code. Part Two sets out the following:

- The objectives that are to be met in order to minimise the risk of escape of infectious agents from the facility.
- Functional requirements that must be met in order to achieve the objectives.
- An acceptable solution that, if followed, will result in compliance with this Standard.
- Tests that must be carried out to verify that the objectives have been met.

#### ***2.1.1 Means of compliance with this standard***

The owner is free to use any materials, components or construction methods that comply with the relevant objectives and functional requirements of this Standard. For those who prefer specific guidance the Approved Documents issued by the Building Industry Authority and the Acceptable Solution contained in this Standard provide detailed methods for establishing compliance with this Standard

There is no obligation to adopt any particular solution. Materials, components and construction methods that differ from those in the Approved Documents and Acceptable Solution may be used if they comply with this Standard. The owner may be required to demonstrate that any such method does in fact comply, prior to any commitment being made for construction.

Note: this envisages that owners will approach MAF for approval to adopt an alternative method during the design stage, prior to commencing construction.

#### ***2.1.2 Verification methods***

Verification that the Standard has been met may be by calculations using recognised analytical methods and mathematical models, laboratory tests, or inspections and/or tests in-situ. The technical representative shall be responsible for verifying that the Standard has been met. Refer to Section 3.1.3 for information on the required Compliance Certificate.

### **2.1.3 Special terms**

The following terms are used in the NZ Building Code Handbook, and are included for the convenience of users.

#### **Building Certifier**

Means a person approved as a Building Certifier by the Building Industry Authority under Part VII of the Building Act 1991.

#### **Building Consent**

Means consent to carry out building work granted by a Territorial Authority under Part V of the Building Act 1991; and includes all conditions to which the Consent is subject.

#### **Building Warrant of Fitness.**

An annual written statement by the building owner that the requirements contained in the compliance schedule have been fully complied with during the previous 12 months.

#### **Code Compliance Certificate**

Means a certificate to that effect issued by a Territorial Authority or a Building Certifier pursuant to section 43 of the Building Act 1991.

#### **Compliance Schedule**

Means a compliance schedule issued under section 44 of the Building Act 1991.

#### **Independent Qualified Person**

This person certifies to the owner that the systems or features (s)he covers are operating correctly and have been properly maintained over the last 12 months.

## **2.2 Construction requirements**

The following requirements have been written in a form similar to that of the NZ Building Code, in recognition that quarantine requirements will be jeopardized by poor quality construction.

### **2.2.1 Objectives**

The following are the objectives that must be achieved.

### **2.2.1.1 Structure**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through structural failure.

### **2.2.1.2 Durability**

Objective: To minimise the escape of infectious agents from the quarantine area and ancillary area by ensuring that the facility will throughout its life continue to satisfy the other objectives of this Standard.

### **2.2.1.3 Fire safety**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through fire by:

- Reducing the risk of outbreak of fire.
- Providing suitable Means of Escape from fire
- Limiting the spread of fire.
- Ensuring structural stability during a fire.

Note that the consequences of fire may include:

- Failure of the walls or roof.
- Loss of pressure-control fans.
- Suspension of normal exiting hygiene procedures during emergency evacuation.
- Violation of the containment barrier during fire fighting or rescue operations.

### **2.2.1.4 Access**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area by minimizing the risk of people being harmed through the effects of inadequate access to the facility (it is assumed that containment could be jeopardized through suspension of normal exiting procedures during the rescue of an injured person).

### **2.2.1.5 Surface water**

Objective: To minimise the risk of escape of infectious agents from the facility through flooding or similar effects of surface water.

### **2.2.1.6 External moisture**

Objective: To minimise the risk of escape of infectious agents from the facility that could result from external moisture entering the facility. (It is envisaged that escape could occur due to transport in running water, or after premature deterioration of the quarantine barrier (walls, floor or roof) through rot or corrosion).

### **2.2.1.7 Internal moisture**

Objective: To minimise the risk of escape of infectious agents from the quarantine area or ancillary area that could result from the accumulation of internal moisture.

### **2.2.1.8 Safety of users**

Objective: To minimise the risk of escape of infectious agents from the quarantine area or ancillary area resulting from the need to respond as a priority to a person or persons who fall ill or are injured in the facility.

### **2.2.1.9 Services and facilities**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area resulting from the absence or inadequacy of services and facilities for the use of people in the facility.

### **2.2.1.10 Containment perimeter**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through the containment perimeter.

### **2.2.1.11 Air leakage**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through outward airflow from any openings that may exist in the containment perimeter.

### **2.2.1.12 Hygiene**

Objective: To minimise the opportunity for infectious agents to accumulate and remain within the containment perimeter through inability to clean and decontaminate all surfaces and components within the containment perimeter effectively.

### **2.2.1.13 Comfort**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through behaviour of people in the facility who are uncomfortable.

### **2.2.1.14 Provision for maintenance**

Objective: To minimise the risk of escape of infectious agents from the quarantine area and ancillary area through the inability to maintain functioning components.

## ***2.2.2 Functional requirements***

The building must meet the following functional requirements to ensure that the objectives are met. The clause numbers have been chosen to match those of the relevant objectives.

### **2.2.2.1 Structure**

Functional requirement: Buildings, building elements and sitework must, during construction or alteration and throughout their lives:

- Withstand the combination of loads that they are likely to experience.
- Have a low probability of causing escape of infectious agents through undue deformation, differential expansion or contraction, vibratory response, degradation or other physical characteristic.

A full list of the structural requirements for the building are given in Approved Document B1 of the NZ Building Code. Examples of physical conditions that are to be taken into account are:

Self-weight, loads imposed during use (particularly differential pressure across walls and ceilings), temperature, water, earthquake, wind, fire, differential movement.

### **2.2.2.2 Durability**

Functional requirement: Building materials, components and construction methods must be sufficiently durable to ensure that the facility, without reconstruction or major renovation, satisfies the other functional requirements of this Standard throughout the life of the facility.

*Note:* that Approved Document B2 of the NZ Building Code provides for a building to be designed for a specified intended life and, if no life is specified, sets out the minimum life of various components, e.g. not less than 50 years for structural components, 15 years for items moderately difficult to access and replace, and 5 years for elements that are easy to access and replace.

### **2.2.2.3 Fire safety**

Functional requirements:

#### **2.2.2.3.1 Outbreak of fire**

Fixed appliances using the controlled combustion of solid, liquid or gaseous fuel must be installed in a way that reduces the likelihood of fire.

#### **2.2.2.3.2 Means of escape**

Facilities must be provided with escape routes that give people adequate time to reach a safe place without being overcome by the effects of fire.

#### **2.2.2.3.3 Spread of fire**

Facilities must be provided with safeguards against fire spread so that:

- People have time to escape to a safe place without being overcome by the effects of fire.
- Firefighters may undertake rescue operations and protect property.
- The risk of loss of quarantine through the effects of fire is minimised.

#### **2.2.2.3.4 Structural stability during fire.**

Facilities must be constructed to maintain structural stability during fire to:

- Allow people adequate time to evacuate safely.
- Allow fire service personnel adequate time to carry out rescue and fire fighting operations.

### **2.2.2.4 Access**

Functional requirement: The facility must be provided with reasonable and adequate access routes that allow people to safely and easily move up to, into and within the facility.

### **2.2.2.5 Surface water**

Functional requirement: The facility and sitework must be constructed in a way that protects the facility from the adverse effects of surface water.

### **2.2.2.6 External moisture**

Functional requirement: The facility must be constructed to provide adequate resistance to penetration by, and the accumulation of moisture from outside. (Note that this covers rainwater, melting snow, dampness from the ground, condensation and moisture that enters during construction).

### **2.2.2.7 Internal moisture**

Functional requirement: The facility must be constructed to avoid the likelihood of

- Fungal growth or the accumulation of contaminants on linings and other building elements.
- Potentially contaminated water running out of the facility.
- Damage to building elements caused by use of water.

### **2.2.2.8 Safety of users**

Functional requirements for the various aspects of safety are shown in Table 1.

### 2.2.2.9 Services and facilities

Functional requirements for the various services and facilities are shown in Table 2.

| Clause    | Topic                               | Functional requirement   |
|-----------|-------------------------------------|--|
| 2.2.2.8.1 | Hazardous agents on site            | The facility must be constructed to avoid the likelihood of people within the building being adversely affected by hazardous agents or contaminants on the site. (Relates to contaminants such as chemicals in the ground the facility is built on)  |
| 2.2.2.8.2 | Hazardous building materials        | Building materials that are potentially hazardous must be used in ways that avoid undue risk to people. (Relates to asbestos, glazing, and materials that emit harmful substances)   |
| 2.2.2.8.3 | Hazardous substances or processes   | Buildings where hazardous substances are stored and hazardous processes undertaken must be constructed to provide adequate protection to people. (relates to flammable, corrosive, or toxic substances).   |
| 2.2.2.8.4 | Safety from falling                 | Buildings must be constructed to reduce the likelihood of accidental fall (relates to safety barriers).  |
| 2.2.2.8.5 | Construction and demolition hazards | Construction or demolition work on the facility must: <ul style="list-style-type: none"> <li>a. Avoid the likelihood of objects falling onto people and</li> <li>b. Not be carried out whilst the facility is contaminated or potentially contaminated if there is any risk of violation of the quarantine barrier.</li> </ul>   |
| 2.2.2.8.6 | Lighting for emergency              | The facility must be provided with adequate lighting within all escape routes in an emergency  |
| 2.2.2.8.7 | Warning systems                     | The facility must be provided with appropriate means of warning people to escape to a safe place. A warning system must consist of combined fire detection and warning system that will alert people in adequate time for them to reach a safe place. (This section identifies the various types of fire detection and alarm systems available, and the circumstances under which they must be used).  |
| 2.2.2.8.8 | Signs                               | Signs must be provided in and about buildings to: <ul style="list-style-type: none"> <li>a. Identify escape routes, emergency-related safety features, potential hazards.</li> <li>b. Inform users of the correct use of features provided in the facility which aid in quarantine (Relates to systems for liquid waste treatment and disposal, solid waste disposal, exit procedure, etc).</li> </ul> |

**Table 1: Functional requirements relating to safety of users**

| <b>Clause</b> | <b>Topic</b>  | <b>Functional requirement</b>   |
|---------------|---|---|
| 2.2.2.9.1     | Personal hygiene  | Buildings must be provided with appropriate spaces and facilities for personal hygiene. (relates to toilet and hand-washing facilities as well as to facilities to minimise the risk of infectious agents being carried out of the facility by departing people)  |
| 2.2.2.9.2     | Laundrying  | Buildings must be provided with adequate space and facilities for laundrying (refers to laundrying of clothing and other items used in the facility)  |
| 2.2.2.9.3     | Food preparation and prevention of contamination            | Buildings must be provided with space and facilities for the hygienic storage, preparation and cooking of food, that are appropriate for the intended use of the building (may refer to tea rooms etc. for facilities occupied for long periods, or may prohibit the preparation and eating of food)  |
| 2.2.2.9.4     | Ventilation   | Spaces within buildings must be provided with adequate ventilation consistent with their maximum occupancy and intended use. (Refers to ventilation to control odours, temperature, humidity and pressure; fresh air for people and birds; and filtration to minimise the risk of escape of infectious agents.                                    |
| 2.2.2.9.5     | Interior environment  | Buildings must be constructed to provide adequate activity space for the intended use (refers to spaces provided for housing and attending to the needs of the birds in the facility)   |
| 2.2.2.9.6     | Artificial light  | Spaces within buildings used by people must be provided with adequate artificial lighting which, when activated in the absence of sufficient natural light, will enable safe movement (refers to moving safely within the facility as well as to safely carrying out the associated tasks such as tending the birds, cleaning, disinfecting, etc. |
| 2.2.2.9.7     | Electricity   | Buildings must be provided with an electrical installation that:<br>Has safeguards against the outbreak of fire and personal injury.<br>Provides for reliable operation of equipment necessary for quarantine in normal operation and in the event of failure of the normal power supply.   |
| 2.2.2.9.8     | Piped services<br>Gas as an energy source<br>Water supplies | In buildings provided with potentially hazardous services containing hot, cold, flammable, corrosive or toxic fluids, the installations must be constructed to provide adequate service and safety for people (refers to natural gas, LPG, hot water, cold water).  |

**Table 2 Functional requirements for buildings, services and facilities**

| Clause     | Topic                   | Functional requirement  |
|------------|-------------------------|---|
| 2.2.2.9.9  | Foul water              | Facilities must be provided with an adequate plumbing and drainage system to:<br>Capture all liquid waste created within the facility, with the exception of waste from toilet pans and urinals.<br>Effectively treat all captured wastewater.<br>Sample and test treated water.<br>Carry correctly treated water to outfall(s).<br>See also section 2.2.2.14 |
| 2.2.2.9.10 | Industrial liquid waste | Buildings in which industrial liquid waste is generated must be provided with adequate spaces and facilities for the safe and hygienic collection, holding, treatment and disposal of the waste.  |
| 2.2.2.9.11 | Solid waste             | Buildings must be provided with space and facilities for the collection, safe hygienic holding, and effective treatment or quarantine prior to disposal, of solid waste arising from the use of the building.   |

**Table 2 cont'd. Functional requirements for buildings, services and facilities**

### **2.2.2.10 Containment perimeter**

Functional requirement: All parts of the containment perimeter including floor, walls, doors and ceiling must be capable of containing dust particles larger than 5 microns in diameter when doors and any other openable accessways are closed and there is no static pressure difference across the envelope. Air filters must remove at least 98% of particles 5 microns and larger in diameter from the air flowing through them, when tested in operation. Air filters must be constructed and installed so that the filter media and edges seals can be closely inspected and tested for leakage.

The leakage rate of air through the containment perimeter must not exceed 0.2 litres per second per square metre of surface area of the containment perimeter (including the floor), when the quarantine area is at a static pressure of 40Pa below outside air pressure.

### **2.2.2.11 Air system**

Functional requirements:

#### **2.2.2.11.1 Static pressure in quarantine area**

The static pressure inside the quarantine area must be kept at least 40 Pascals (Pa) lower than that outside at all times when the facility is in use, to give additional protection against escape of infectious agents in the event that openings exist in the containment perimeter.

Means must be provided for continuously indicating and recording the static pressure difference between the air in the quarantine area and the air outside the containment perimeter.

#### **2.2.2.11.2 Static pressure in ancillary area**

The static pressure in the ancillary area must be kept at least 20 Pa lower than that outside at all times when the ancillary area is in use, and for at least ten minutes after use.

Means must be provided for continuously indicating the static pressure difference between the air in the ancillary area and the air outside the containment perimeter.

#### **2.2.2.11.3 Time in ancillary area**

Means must be provided to ensure that, when the facility is in use, a person cannot pass out of the quarantine area without remaining in the ancillary area for a time at least as long as that taken for the ventilation system to achieve an airflow equivalent to one air change in the ancillary area.

#### **2.2.2.11.4 Wind effect on static pressure**

The pressure differences must be maintained during all foreseeable wind conditions of strength, direction and gustiness.

### **2.2.2.12 Hygiene**

Functional requirements

#### **2.2.2.12.1 Inner surfaces**

All inner surfaces of the quarantine area and ancillary area must be impervious to moisture and free of cracks, crevices and similar locations where dirt and infectious agents could accumulate and which are not readily cleanable. They must be resistant to the substances to be used to decontaminate the facility. Provision must be made to enable all internal surfaces to be effectively cleaned without compromising containment.

#### **2.2.2.12.2 Decontamination**

Provision must be made to introduce formaldehyde or similar gaseous decontaminant into all parts of the containment area, including inlet and exhaust air ducts and filters, to hold the gas for not less than 10 hours, and to vent the gas safely to outside afterwards.

### **2.2.2.13 Comfort**

Functional requirements:

#### **2.2.2.13.1 Air temperature in shower area**

The air temperature in the shower area and dressing areas must be maintained at not less than 22°C when the area is occupied.

#### **2.2.2.14 Liquid waste disposal**

Functional requirements

#### **2.2.2.14.1 Floor drainage**

Floors must fall to a collection point so that liquid cannot accumulate on the floor.

#### **2.2.2.14.2 Liquid waste collection**

All liquid waste produced within the quarantine area and ancillary area, except for that from toilet pans and urinals, must be collected and provision made for effective treatment before it is able to leave the facility. While liquid waste can be stored until biosecurity clearance is given and discharged without treatment the facility must have the capability to treat liquid waste if an exotic disease occurs.

#### **2.2.2.14.3 Water seal on drains**

All drains from toilet pans and urinals must be fitted with traps and vents so that the water seal is maintained under all conditions of operation of the facility and of the drainage system.

#### **2.2.2.15 Maintenance**

Functional requirements:

##### **2.2.2.15.1 Maintenance of plant**

Wherever possible, any plant component that may need attention to maintain its performance must be located outside the containment perimeter, with the exception of primary filters on exhaust outlets. This includes items that require regular maintenance, such as fans, and items that do not normally require servicing, such as sensors, relays, contactors and timers.

##### **2.2.2.15.2 Filter pressure-drop indication**

Means must be provided for continuously indicating the pressure drop across each air filter.

##### **2.2.2.15.3 Testing of secondary filters**

Means must be provided for testing the integrity of each secondary filter in accordance with an approved standard.

##### **2.2.2.15.4 Protection of plant from weather**

All items of plant that may need servicing to maintain performance, or that may suffer deterioration in performance or condition through exposure to the weather, must be located such that they are protected from the weather and can be conveniently and safely worked on during inclement weather.

##### **2.2.2.15.5 Operating and Maintenance Manual**

A comprehensive Operating and Maintenance Manual for the systems in the facility must be produced prior to commencement of use of the facility (refer section 1.3.6).

### **2.2.3 Acceptable solution**

This section describes a method of construction that, if followed, will result in compliance with this Standard.

#### **2.2.3.1 Structure**

Compliance with Approved Document B1 of the NZ Building Code and demonstration that the materials which create the containment perimeter are capable of accepting the expansion and contraction that they will be subject to without leakage.

#### **2.2.3.2 Durability**

Compliance with Approved Document B2 of the NZ Building code.  
Choose sealants that have adequate durability.

#### **2.2.3.3 Fire safety**

##### **2.2.3.3.1 Outbreak of fire**

Compliance with the Approved Document for NZ Building Code Fire Safety Clauses. Note that this would apply to combustion appliances used for heating of the facility, heating of hot water, or incineration of waste.

##### **2.2.3.3.2 Means of escape**

Compliance with the Approved Document for NZ Building Code Fire Safety Clauses. Note that this would reduce the risk of rescue operations having to be carried out.

##### **2.2.3.3.3 Spread of fire**

Compliance with the Approved Document for NZ Building Code Fire Safety Clauses. Note that this covers the use of materials and construction details that limit the spread of fire and smoke, the provision of systems such as fire alarms and sprinklers, and the provision of first aid appliances such as extinguishers and hose-reels.

##### **2.2.3.3.4 Structural stability during fire**

Compliance with the Approved Document for NZ Building Code Fire Safety Clauses. Note that this covers the fire resistance ratings needed for various structural members.

#### **2.2.3.4 Access**

Compliance with Approved Document D1 of the NZ Building Code.

#### **2.2.3.5 Surface water**

Compliance with Approved Document E1 of the NZ Building Code.

#### **2.2.3.6 External moisture**

Acceptable solution:

Compliance with Approved Document E2 of the NZ Building Code.

### **2.2.3.7 Internal moisture**

Acceptable solution:

Compliance with Approved Document E3 of the NZ Building Code.

### **2.2.3.8 Safety of users**

An Acceptable Solution for the various aspects of safety is compliance with the Approved Documents of the NZ Building Code and the sections of this standard referred to in Table 3.

| <b>Clause</b> | <b>Subject</b>                      | <b>Acceptable solution</b> |
|---------------|-------------------------------------|----------------------------|
| 2.2.3.8.1     | Hazardous agents on site            | F1                         |
| 2.2.3.8.2     | Hazardous building materials        | F2                         |
| 2.2.3.8.3     | Hazardous substances or processes   | F3                         |
| 2.2.3.8.4     | Safety from falling                 | F4                         |
| 2.2.3.8.5     | Construction and demolition hazards | F5                         |
| 2.2.3.8.6     | Lighting for emergency              | F6                         |
| 2.2.3.8.7     | Warning systems                     | F7                         |
| 2.2.3.8.8     | Signs                               | F8                         |

**Table 3 Acceptable solution for safety of users**

### **2.2.3.9 Services and facilities**

An Acceptable Solution for the services and facilities for the building is compliance with the Approved Documents of the NZ Building Code and the sections of this Standard referred to in Table 4.

| <b>Clause</b> | <b>Topic</b>   | <b>Acceptable solution</b>  |
|---------------|--|---|
| 2.2.3.9.1     | Personal hygiene   | a. G1<br>b. Refer to section 1.1.2 defining layout requirements   |
| 2.2.3.9.2     | Laundrying   | a. G2<br>b. Refer to section 1.1.2 defining layout requirements   |
| 2.2.3.9.3     | Food preparation and prevention of contamination               | G3  |
| 2.2.3.9.4     | Ventilation  | a. G4<br>b. Refer to section 2.2.3.11 and 2.2.3.12.   |
| 2.2.3.9.5     | Interior environment   | Refer to section 1.1.2 for layout requirements  |
| 2.2.3.9.6     | Artificial light   | G8  |
| 2.2.3.9.7     | Electricity  | a. G9<br>b. NZS 3000:1997 NZ Wiring Rules   |
| 2.2.3.9.8     | Piped services.<br>Gas as an energy source.<br>Water supplies. | a. G10<br>b. G11<br>c. G12<br>d. NZS 5261: 1996 Installation of gas-burning appliances and equipment<br>e. AS/NZS 3500 National Plumbing and Drainage Code<br>f. Refer to section 2.2.3.13.3.           |
| 2.2.3.9.9     | Foul water   | a. G13<br>b. AS/NZS 3500 National Plumbing and Drainage Code<br>c. Refer to section 2.2.3.14<br>d. Implementation of a procedure to minimise the risk of infectious agents entering the toilet fittings |
| 2.2.3.9.10    | Industrial liquid waste  | G14   |
| 2.2.3.9.11    | Solid waste  | G15   |

**Table 4 Acceptable solution for services and facilities**

## **2.2.3.10 Containment perimeter**

### **2.2.3.10.1 Floor**

Construct the floor of concrete on damp-proof course to structural requirements, with provision for expansion joints as necessary to control cracking. Position construction joints on wall lines wherever possible. Clean out construction joints and seal with a flexible adhesive sealer. Ensure that fall is towards drainage chamber to avoid ponding.

### **2.2.3.10.2 Walls and ceiling**

Construct walls and ceilings that form part of the containment perimeter from sandwich panel consisting of polystyrene core and pre-finished steel surfaces, to structural requirements and in accordance with manufacturer's instructions. Fit aluminum extrusions at floor, and at all corners, and seal all joints and fixings in accordance with manufacturer's instructions. Ensure that walls and ceiling are designed to withstand the maximum differential pressure that could be applied upon the most onerous failure of fans and/or controls.

Doors that form part of the containment perimeter are to be cool room-type, complete with continuous double rubber or neoprene edge seals, adjustable hinges and latches, and are to be self-closing (it is recognized that the closer may not be able to cause the door to latch because of the resistance of the seals and latch). Doors are to swing outwards in the direction of egress from the facility, and are to be openable from both sides. Fit rubber or neoprene seal to the door latch operator. All outer doors are to be fitted with locks.

Walls and doors that do not form part of the containment perimeter may be constructed of other materials provided the objectives and functional requirements are met.

### **2.2.3.10.3 Windows**

Provide windows in the containment perimeter as required for operational or safety reasons. Windows are to be as small as possible, and non-openable. The window material is to be Perspex or toughened glass, to minimise the risk of accidental breakage, thick enough to resist the differential pressure as for the walls.

### **2.2.3.10.4 Shower**

All walls, ceiling and doors for the shower that form part of the containment perimeter or part of the separation between the quarantine area and the ancillary area are to be as specified in clause 2.2.3.10.2.

The floor is to form a tray with up-stand all round, thoroughly sealed to the walls. The tray is to be of impervious material, with falls to the outlet, fully supported. It is to be supported high enough to allow the drain to flow to the drainage chamber via an accessible trap. The trap is to be deep enough to remain sealed under the maximum differential pressure that could be developed across it upon the most onerous failure of fans and/or controls serving the shower area and drainage discharge point.

The space underneath the shower is to be fully enclosed or accessible for cleaning.

The water temperature is to be comfortable for showering.

### **2.2.3.11 Ventilation and temperature control**

#### **2.2.3.11.1 Supply air for quarantine area**

Install a fresh air supply system for the quarantine area, with adequate flow-rate to provide ventilation and temperature control. Heat and cool the fresh air as needed to maintain the room air temperature.

Locate all plant that requires routine maintenance in a weatherproof enclosure attached to the outside of the containment perimeter, and draw fresh air from the enclosure. The enclosure is to have at least two air inlets from outside that:

- Are located on different faces of the enclosure, to minimise the effect of wind from varying directions.
- Are mounted at least 1 metre above ground level, and protected with weatherproof louvers or cowls fitted with insect mesh.
- Have a static pressure drop across them of not more than 10 Pa at the design airflow without the assistance of wind forces.

Alternatively, air may be drawn directly from outside provided the designer can show that the required differential air pressure between the quarantine area and outside will not be compromised by any likely wind influence.

Fit a primary air filter at the air inlet to the ductwork, with a mesh cover. Fit a secondary air filter in the supply ductwork just before it enters the containment perimeter, and fit a mesh cover or grille on the downstream side. Select filters to be within the allowable maximum and minimum face velocity specified by the manufacturer. Mount the filters into a fixed frame sealed into the ductwork, with compressible neoprene seals and effective retaining clips to minimise leakage. Sliding filter frames, and fluid or grease seals, are not acceptable.

Ensure that the frames are strong enough to resist movement under the differential pressure developed across a dirty filter. Access to remove the secondary filter must be from inside the quarantine area. Fit the following:

- A manometer across each filter.
- A filter equivalent to the secondary filter, and an isolating valve, at the manometer's sensing point on the downstream side of the secondary filter.

The secondary filter is to be accessible from within the containment perimeter for scanning the face of the filter and the edge seals for leakage.

Filter details must be as in Table 5.

| <b>Details</b>  | <b>Primary filter</b>                   | <b>Secondary filter</b>  |
|-----------------|---|--|
| Type            | Flat panel or deep bed extended surface | Pleated fiberglass paper-type media, corrugated aluminum or glue-type separators and metal frame |
| Performance     | At least 80% arrestance                 | At least 90% efficiency  |
| Test substance  | ASHRAE synthetic arrestance dust.       | ASHRAE atmospheric dust spot efficiency test.  |
| European rating | F3 or F4                                | F8   |

**Table 5: Requirements for supply and exhaust air filters**

*Note:* that filters with an efficiency of 90% when tested to the ASHRAE Atmospheric Dust Spot Efficiency Test should be able to achieve an efficiency of at least 98% at 5 microns, as required in Clause 2.2.2.10. Clause 2.2.4.1 allows a lower initial efficiency when testing a new installation.'

The operator must submit a copy of a test certificate for each type of filter issued by an independent air filter testing agency using ASHRAE, Australian Standard or European Standard test methods.

The test certificates must be bound into the Operating and Maintenance Manual and any change in the supply of filters must require the issue of a new test certificate.

The technical representative must inspect the filter test certificate against the filters installed.

The secondary filter must be leak-tested using laser particle counting in accordance with Sections 2.2.4.1 and 3.1.1. The leakage rate of the media is to be recorded and used as a benchmark for future testing. A test certificate is to be issued for each filter after each test and kept in the Operating and Maintenance Manual.

Fit an airtight damper and fumigation port in the supply ductwork upstream of the secondary damper to enable the secondary filter to be decontaminated (refer 2.2.3.13.2), and to enable the ductwork to be closed off whilst the secondary filter is being replaced.

Fit a manually adjustable damper in the supply duct to regulate the air flow-rate as necessary to create the required differential pressure.

Position all fans, sensors, dampers, heating and cooling equipment upstream of the secondary filter in the supply ducting.

Fabricate ducting from galvanized sheet-metal to SMACNA (Sheetmetal and Air Conditioning Contractors National Association) Standard (high or low pressure as applicable), or DW-142 'Specification for Sheetmetal Ductwork' published for the Heating and Ventilating Contractors Association, London. Construct to minimise joints and ensure that all joints are thoroughly sealed. Support ducting to SMACNA standard, and brace to ensure it cannot break free of the containment perimeter during an earthquake.

Do not fit absorbent linings inside the ductwork between the secondary filters and the containment perimeter, and do not fit combustible linings in any ductwork. Do not fit any flexible ductwork between the secondary filter and the containment perimeter.

Note:

Designs that use methods other than secondary filters for ensuring that containment is maintained whenever there is no inward airflow will be evaluated, and approved if they meet the Objectives and Functional Requirements of this Standard.

#### **2.2.3.11.2 Exhaust air for quarantine area**

Install an exhaust air system to remove air from the quarantine area at a rate equal to that of the supply system plus all inward leakage. The system is to comprise ductwork, primary filter, secondary filter, filter manometers and filter test fittings, airtight damper, fumigation port and dual fans with back-draft dampers, all mounted in a weatherproof enclosure attached to the outside of the containment perimeter. Select fans so that each alone is capable of creating the specified room differential pressure as well as meeting the pressure drop through the filters and ductwork.

All components of the exhaust system are to be as specified for the supply air system except that:

- The primary filter is to be located at the containment perimeter
- The secondary filter is to be fitted as close to the primary filter as possible
- The damper is to be downstream of the secondary filter.
- The fan is to be downstream of the damper.

Note that a manually adjustable damper is not required on the exhaust system.

Access for replacing the primary filter must be from within the containment perimeter, arranged so that the integrity of the ducting and the secondary filter is maintained whilst the primary filter is out. Access for removing the secondary filter must be from inside the containment perimeter, arranged so that the integrity of the ductwork from the containment perimeter to the close-off damper is maintained whilst the secondary filter is out.

All manometer sensing points on the air filters are to be fitted with filters and isolating valves except for the one on the outlet of the downstream secondary filter. Fit an access panel downstream of each secondary filter so the filter media and edge seals can be scanned for leakage.

The exhaust system is to discharge to outside vertically upwards at least two metres above the highest point on the roof of the facility.

#### **2.2.3.11.3 Ancillary area**

Provide supply and exhaust air systems for the ancillary area as for the quarantine area, except that the room air temperature is to be maintained at not less than 22°C when the system is on. Locate the exhaust to draw air from the shower area.

#### **2.2.3.12 Air movement through containment perimeter**

##### **2.2.3.12.1 Leakage paths**

Use construction techniques that minimise joints in the containment perimeter, for example by using large sheets of material.

Thoroughly seal all possible air leakage paths, on both sides of the containment perimeter, including:

- Joints in wall, floor and ceiling material.
- Screws and pop-rivets used in construction of the walls and ceiling.
- Penetrations for fixings used to support doors, benches, basins etc.
- Penetrations for pipes and cables.
- Screws or rivets used to secure pipes, conduits, light fittings, switches, socket outlets, etc.
- Install all cables in conduit and seal inside the conduit after installation of cables is complete.

Arrange the overflow from any toilet or urinal cistern to discharge into the toilet pan or urinal, and provide venting on the soil drain downstream of the fitting's water seal as necessary so that the seal is preserved under all operating and weather conditions.

##### **2.2.3.12.2 Differential air pressure**

The ventilation systems are to maintain the pressure in the quarantine area between 40 and 50 Pa lower than outside, and the pressure in the ancillary area between 20 and 30 Pa lower than outside. This will maintain a pressure difference between the quarantine area and ancillary area of about 20 Pa when the ancillary area ventilation system is running, and about 40 Pa when it is not running. Provide diaphragm-type pressure gauges such as Magnehelic both inside and outside the containment perimeter to indicate the differential pressure for both the quarantine area and ancillary area. Fit filters to the pressure sensing lines that penetrate the containment perimeter as for the air filter manometers, with a three way valve to isolate the filter and vent the sensing line so that the gauge will operate whilst the valve is closed.

### 2.2.3.12.3 Controls

Arrange the control system so that:

- The door between the ancillary area and outside, and the door between the ancillary area and the quarantine area are interlocked so that only one can be open at once, and so that once a door has been closed the other door will remain locked for the time taken by the ventilation system to achieve an airflow equivalent to one air change in the ancillary area.
- The supply and exhaust systems for the quarantine area operate continuously while the facility is in use, except that the supply system must stop whenever the door into the quarantine area is unlatched.
- The supply and exhaust systems for the ancillary area start immediately when a door into the ancillary area is opened, and continue running until 10 minutes after all doors to the ancillary area have been closed.
- Speed controllers are unable to be set below the minimum speed required to maintain the required differential pressure under the most unfavourable circumstances.
- Controls fail to safety (i.e. so as not to compromise containment) as far as possible.
- Control switches and set-points are located in a secure location but are readily accessible to authorized staff.
- There are appropriate signs to inform users of the use and performance of the systems.

The supply fan for each system is to run at a constant speed.

The dual exhaust fans for each system are to be set up so that the standby fan starts automatically if the operating fan should fail.

The fan in use must be fitted with an automatic control system to regulate its capacity, so that the room differential pressure is maintained under changes such as variations in the supply air flow-rate and progressive contamination of filters.

Alternatively, a manual damper may be installed in the exhaust system downstream of the secondary filter, and adjusted to give the required differential pressure. If the manual damper is used then the operator must develop and implement a management plan to ensure that the differential pressure is monitored and the damper adjusted as necessary so that the required differential pressure is maintained.

Interlock the fans so that the supply fan will stop if the exhaust fan fails, to avoid creating a positive pressure in the quarantine area.

Provide a battery type back-up power supply and automatic changeover system so that the supply and exhaust fans, controls and alarms continue to operate for a period of at least 8 hours without interruption on the loss of mains power. Also provide terminals at the main switchboard to enable a standby generator to be used to operate all the ventilation, control and alarm systems in the event of a prolonged power failure.

Alternatively, provide a standby generator permanently connected to the system and designed to start automatically with minimum delay on loss of normal power supply.

#### **2.2.3.12.4 Alarm system**

Provide an alarm system that:

- Provides audible and visible alarms inside and outside the containment perimeter if the specified differential pressure diminishes by over 50% for more than 30 seconds.
- Provides audible and visible alarms inside and outside the containment perimeter if either or both the interlocked doors are unlatched for more than 30 seconds.
- Has mute switches on audible alarms, with indicator lights to show that an audible alarm has been muted.
- Has a filter and isolating valve on each pressure sensing line that penetrates the containment perimeter as for the pressure gauges.
- Provides audible and visible warning if the supply or exhaust fan should fail.
- Has data logging facilities to record the differential pressure in the quarantine area at least once every 30 seconds, with the facility to print a hard copy and to transmit the data via modem.

The information recorded by the data logger is critical to the operation of the quarantine facility so it must be established as a stand-alone unit with:

- Extended operating temperature range for dependable operation.
- Reliable operation under the vibration intensity likely to be present on the site.
- Customised programming for the exact application requirements.
- Storage of the operating programme and point database in non-volatile memory (EEPROM) for protection against power loss.
- Battery backup for power failure protection.
- Universal inputs and outputs for application flexibility.

#### **2.2.3.12.5 Feed entry**

Where food is introduced through the containment perimeter via a mechanical system, provision must be made to maintain room pressure and prevent room air from passing out through the feed system as feed is introduced.

### **2.2.3.13 Hygiene and de-contamination**

#### **2.2.3.13.1 Construction and sealing**

Cover with vinyl flooring in accordance with good trade practice. Weld all joints, and ensure vinyl turns down into drainage chamber to form an over-flashing and seal. Cove vinyl up at walls and at any penetrations for pipes, ducts or cables, and seal with suitable waterproof sealant such as neutral-cure silicone.

#### **2.2.3.13.2 De-contamination**

The whole of the quarantine area and ancillary area, including secondary filters and ductwork between the containment perimeter and secondary filters, is to be able to be sealed off and decontaminated with formaldehyde. This will require:

- The ability for the supply and exhaust air systems to be shut down.

- Airtight dampers and fumigation ports in the supply and exhaust ductwork, or other effective means of passing formaldehyde through the secondary filters and holding it in the system for the required period.
- Means of safely clearing the formaldehyde from the building and safely venting it to outside on completion of the de-contamination procedure.

#### **2.2.3.13.3 Hot and cold water supply**

Hot and cold water must be provided in both the quarantine area and ancillary area, to enable the areas to be effectively cleaned. Provide sufficient storage of cold water to enable the facility to operate without risk of loss of containment for a period of 24 hours on loss of normal water supply. Provide a reduced-pressure-type backflow preventer at each point of entry of water to the facility.

#### **2.2.3.13.4 Surface-mounted items**

Mount all pipes and conduit within the containment perimeter clear of walls, floor and ceiling, to allow effective cleaning. Seal all items such as switches, power outlets, light fittings, hose-taps and sink-benches against the walls or ceilings to prevent accumulation of dirt in crevices.

#### **2.2.3.14 Liquid waste disposal**

##### **2.2.3.14.1 Collection tank**

Provide a plastic or stainless steel tank in a pit in the floor in the quarantine area to collect all liquid waste from all sources except toilet pans and urinals - such as showers, hand-basins, sinks, washing machines, and cleaning activities. Ensure that the tank is thoroughly sealed to the floor at the top edges, and is free of potential leaks. The tank must be large enough to catch the maximum flow-rate of water without splashing, and must have:

- A removable cover for safety.
- A submersible pump with cutting ability to pump liquid waste to treatment tanks.
- Float switches for automatically starting and stopping the pump.
- A high-level alarm.

##### **2.2.3.14.2 Treatment tanks**

Provide at least two plastic or stainless steel storage tanks within the quarantine area, each with sufficient capacity to hold the maximum volume of liquid waste likely to be produced in the time that the other tank is being treated, or in the time that staff are not available to attend to water treatment (whichever is the greater). Mount tanks on a stand high enough to allow drain lines to be fitted. Fix stand to floor, ensure tanks cannot slide off stand, and fit restraints at top of tanks to ensure they stay in place during an earthquake. Provide each tank with:

- Isolating valve on the water inlet, to enable either tank to be filled whilst the other is being treated.
- Sight-glass or other form of visual indication of contents.
- Sampling valve to enable a sample of water to be drawn off for testing.
- Drain valve to enable the tank to be drained to waste on completion of treatment.

- Access hatch for the addition of treatment chemicals to the water.
- Vent to pass air between the tank and the quarantine area.
- Overflow pipe back into the floor tank.
- High level alarm.
- Electrically driven agitator to stir the water during treatment.

#### **2.2.3.15 Solid waste disposal**

Provision may be made for the storage of solid waste (including bird carcasses) within the facility until the end of quarantine. Alternatively, combustible waste (including carcasses) associated with imported birds and eggs must be sterilized by autoclaving or by incineration in a high temperature, high efficiency Environmental Protection Agency approved incinerator within the facility.

A deep freeze must be provided to preserve dead birds if there is no provision within the facility for autoclaving or incinerating birds.

#### **2.2.3.16 Provision for Maintenance**

Locate all mechanical and electrical equipment in a covered area out of the weather, outside the containment perimeter, with convenient access for maintenance.

Locate all sensors, dampers, fans, heating elements, cooling coils etc. upstream of secondary filters and air-tight dampers on inlet ducts, and downstream of secondary filters and air-tight dampers on exhaust ducts, so that maintenance can be carried out without the need for de-contamination, and so that if necessary, the systems can be shut down and the facility sealed off whilst essential maintenance is carried out.

Locate switchboards, control switches, pressure sensors, pressure switches, pressure controllers, speed controllers, timers etc. outside the containment perimeter.

Provide slave switches, remote set-points etc. within the containment perimeter as necessary for use by staff whilst inside the facility, to minimise the need for travel across the containment perimeter.

### **2.2.4 Verification of containment**

#### **2.2.4.1 Tests required**

The following tests are required on completion of construction, before putting the facility to use, to prove that the facility complies with this standard.

1. Measurement of the upstream particle concentration, followed by scanning of the downstream face of the media and edge seals of all secondary filters, using a laser particle counter. The test method is to be agreed with MAF prior to commencement of the tests.

The count of 5 micron particles downstream of the filter media must be not more than 10% of the upstream count i.e. an efficiency of at least 90%. (Note that this is lower than required in Clause 2.2.2.10 to allow for the lower initial efficiency of new filters. 90%

efficiency at 5 microns is expected to be readily attainable with a filter that has an overall initial efficiency of 70% when tested with the ASHRAE Atmospheric Dust Spot Efficiency Test. Also note that prior to a quarantine period the filter efficiency must have risen to at least 98% at 5 microns - refer to Clause 3.1.1.).

The edge seals must show efficiency at least as good as that of the filter media. During testing, the upstream particle concentration must be high enough to produce a downstream concentration that is within the acceptable range of the laser particle counter. Refer to Section 3.1.1 for further testing prior to commencement of a quarantine period.

2. Leakage testing of the containment perimeter, by measuring the air flowrate extracted from the quarantine area when at a static pressure of 40 Pa below outside air pressure, with all other air inlets and outlets closed by their normal closing device. The measured flowrate shall not exceed 0.2 litres per second per square metre of surface area of the containment perimeter (including the floor).

3. Measurement of static pressure between quarantine area and outside, and between ancillary area and outside, in accordance with AS 1807.10, with the facility in normal operating mode.

4. Measurement of all air flow-rates, in accordance with CIBSE Commissioning Code Series A, Appendix A3.1, or ASHRAE Standard 111-1988, to verify air leakage and air change rates in the quarantine area and ancillary area.

5. Proving of operation of automatic controls and alarms.

6. Calibration of controls and pressure gauges.

7. Proving of operation of systems under standby power.

8. Any tests or checks required by local authorities, such as health checks, or storage of hazardous substances.

#### **2.2.4.2 Certification required**

The following certificates are to be produced on completion of construction, before putting the facility into use:

1. Compliance Certificate for the facility (refer section 3.1.4).

2. Code Compliance Certificate confirming compliance with the NZ Building Code (issued by the local Territorial Authority).

3. Certificate of Compliance with Electrical Wiring Rules, issued by the electrical contractor.

4. Certificate recording the results of any tests or checks required by local authorities.

## **Part Three: Operating requirements**

### **3.1 Inspection, testing and maintenance**

The Standard requires quarantine facilities to be inspected, tested and maintained so that the integrity of the containment perimeter is preserved over time. The following are the activities to be carried out, with details recorded on a check-sheet.

#### **3.1.1 Before the quarantine period**

- Check that all systems are operating correctly, and are free of indications of impending failure (such as hot smells, bearing noise or abnormal vibration).
- Check that all systems operate correctly under standby power.
- Check that all primary filters look clean, are securely mounted in place, and have a pressure drop close to that of clean filters (it is envisaged that primary filters may have to be replaced or washed during a lengthy quarantine period).
- Check the pressure drop across each secondary filter and replace if necessary so that they should not need changing during the quarantine period.
- Carry out laser particle counting for leakage of all secondary filters and their edge seals as specified in Section 2.2.4.1, except that the media efficiency must be at least 98% at 5 microns. Note: It may be necessary to run the system for some time on completion of construction or after replacement of filters, to raise the dust loading to the level necessary to achieve the required efficiency prior to commencement of a quarantine period. The test method is to be agreed with MAF prior to commencement of the tests.
- Check the static pressure in the quarantine area and in the ancillary area as specified in Section 2.2.4.1, and ensure they are in accordance with the requirements of this standard.
- Check that all alarm systems are working correctly.
- Check that the required spare parts are held readily available and are clearly identified.

There must be no birds or eggs in quarantine during these tests.

#### **3.1.2 During the quarantine period**

##### **3.1.2.1 Daily inspection tasks**

- Check pressure drop of primary filters. Replace at or below the maximum pressure drop stated by the manufacturer to maintain their performance and thus minimise contamination of the secondary filters.
- Check pressure drop of each secondary filter.

- Check that all systems are operating correctly. Should any problems be identified carry out repairs in accordance with contingency plan so that containment is not jeopardized.
- Check that the static pressures in the quarantine area and in the ancillary area are in accordance with the requirements of this standard.
- Check that all procedures are being followed.
- Keep written records of each check in a prominent position for inspection by the supervisor.

### **3.1.2.2 Treatment of liquid waste**

Liquid waste must be sterilized before discharge during quarantine by a chlorine based disinfectant. An amount of chlorine compound must be added to the effluent in order to achieve a minimum concentration of available chlorine of 2100 mg/L (2100 ppm) at 30 minutes post-treatment.

Tanks not achieving this level shall be re-treated for a further 30 minutes or successive cycles of 30 minutes until this requirement is achieved. Before the treatment period commences, the chlorinated effluent must be brought to between pH 5.0 and 7.0. The tank shall be continuously agitated over the treatment period.

Chlorine and its by-products are hazardous chemicals and discharge may require compliance with the Resource Management Act and local council regulations. The chlorine in the liquid waste may be neutralised by chemicals or neutralised with carbon filters.

Chlorination records must be maintained noting:

- amount of compound added,
- volume of effluent,
- time that treatment period commenced,
- pH at commencement of the treatment period,
- time treatment period terminated
- pH at termination of treatment
- available chlorine concentration at termination of treatment, determined by an approved test method.

Alternatively liquid waste maybe held in holding tanks until biosecurity clearance of the birds.

### **3.1.2.3 Solid waste storage and handling**

Solid waste must be collected and stored or disposed of in accordance with the procedure in the Quarantine manual. On satisfactory completion of quarantine any remaining solid waste may be disposed of at the discretion of the operator.

### **3.1.2 Throughout the year**

- Carry out regular inspection, testing and maintenance of the systems in accordance with the Operating and Maintenance Manual.
- Keep written records and produce a warrant of fitness as required by the NZ Building Code every twelve months. The warrant of fitness must show that all necessary inspection and maintenance work has been carried out over the last 12 months, and all records have been kept, for all the systems or features listed on the Compliance Schedule issued by the local Territorial Authority.
- Carry out any tests or checks and produce documentation required by local authorities, such as health checks, or checks on storage of hazardous substances.

### **3.1.3 Compliance Certificate for the Facility**

The operator must obtain a Compliance Certificate on completion of construction and every 12 months thereafter. However, if repairs or modifications have been carried out on the containment perimeter or ventilation system then a new Compliance Certificate must be obtained.

The compliance certificate is to provide verification of the physical construction and performance of critical containment components as required in this Standard, and must contain the following information:

- Name and address of facility.
- Date of certificate
- Results of the following tests:
  - Pressure drop across each air filter.
  - Leakage testing of all secondary filters
  - Room leakage rate, and method of measurement.
  - Static pressure difference between quarantine area and outside.
  - Static pressure difference between ancillary area and outside.
  - Air flow-rate through each air handling system.
  - Correct operation of alarms.
  - Correct operation of automatic control systems.
  - Correct calibration of room pressure gauges.
  - Correct operation of systems on standby power.
- Confirmation that all in-line bio-containment filters on the liquid waste system, pressure sensors and pressure gauges are intact.
- Any other information such as test data to show that any aspects of the design which differ from the Approved Solution is functioning as intended.

The technical representative shall be responsible for providing the compliance certificate.

Any variations at any time that would modify the original design intent, modifications to equipment, or the installation of alternative equipment to the originally specified or designed items will require the issue of a new Compliance Certificate.

Defective systems found in non-compliance must be upgraded fully before certification is obtained.

The Compliance Certificate must be mounted in a prominent position for inspection by the supervisor.

## **3.2 Security of the Transitional Facility**

### **3.2.1 Security provisions**

Procedures must be adopted to prevent unauthorised access to the facility.

The entrances to the facility must be kept locked, except when in active use. All external doors except the personnel entrance must be sealed using an appropriate seal by the supervisor at the commencement of each quarantine period.

All access gates, non-personnel entrances and any windows must be kept locked and may be sealed (by the supervisor) during the quarantine period.

### **3.2.2 Access to the Facility**

During quarantine access to the facility must be restricted to the personnel entry. All access must be via the ancillary area.

#### **3.2.2.1 Procedures for access and exit**

Procedures for access must be available at the entrance.

Access to the facility must, in the main, be limited to those people identified in section 1.3.3, the supervisor and any representative of the chief technical officer.

People essential for the operation of the facility such as the veterinarian and service people may also be permitted entry. This group of 'visitors' must be authorised by the operator. The supervisor must approve any other visitors. Visitors must adhere to access procedures and be accompanied by a staff member (i.e. one of the people identified in the section 1.3.3.).

All people on entering the facility must sign a declaration to the effect that they will observe the operating instructions for the quarantine facility and the stand-down period if it is applicable. In the case of staff who are regularly employed at the facility the declaration only needs to be completed once at the commencement of each quarantine period. The logbook must also record the names, addresses, occupation and telephone numbers of all people who enter the facility.

The instructions of the operator or supervisor are to be followed at all times.

People in the facility must wear quarantine clothing and footwear supplied by the operator. This clothing must remain within the facility and be laundered using the facilities provided.

On entry all street clothing and footwear must be removed and stored in the outer changing room before personnel put on newly laundered quarantine clothing. Quarantine clothing that is not newly laundered must remain in the inner changing room together with the quarantine footwear.

On exit quarantine clothing must be left in the inner changing room and all personnel must shower. Sufficient time must be taken in the shower to ensure a thorough body-wash including hair with soap and shampoo.

#### **3.2.2.2 Stand-down period**

As people may serve as carriers for Newcastle disease, a stand-down period of seven days must apply to all people visiting the facility. During this stand-down period people who have visited the quarantine facility must have no contact with any other birds for a minimum of seven days from the time of that visit.

### **3.3 Transport of Birds to the Transitional Facility**

On arrival in New Zealand the imported birds are directed to the transitional facility named in the permit to import. All birds must be transported in an approved transport, as in section 3.3.2.

A sign must be displayed in the cab, or at the rear of the approved transport that states: "In the event of an accident or emergency phone these people as soon as possible....."

The driver must be given contact phone numbers in the case of an emergency between the quarantine facility and the destination.

If the driver has contact with the birds he/she must follow the protective clothing and showering requirements for people who work with quarantined birds.

#### **3.3.1 Disinfection and prevention of weed establishment**

The vehicle and transport containers must be cleaned and disinfected with an approved disinfectant after unloading.

Special attention must also be given to prevent the introduction of weed seeds that may arrive in the feed or via the faeces. Waste matter including faecal material must be incinerated.

### **3.3.2 Approved transport**

The operator must identify a transport service for the transportation of birds. The approved transport must be a vehicle or trailer which meets the following minimum requirements:

- The birds must be held in containers within a covered vehicle or trailer. Material such as feathers, faeces, dirt and bedding must be contained.
- Each container or external gate to the vehicle or trailer must be capable of having an approved seal applied to it.
- Provision for towing the conveyance, so that in the event of a breakdown it can be effectively towed to its destination, e.g. a Hard Tow System.

During transport an approved seal must be applied to the container or external gate(s) by the supervisor.

### **3.3.3 Preparations before the birds arrive**

Sufficient equipment and supplies to meet all normal operational requirements must be installed in the facility before the birds arrive.

If feed is stored within the facility then the store must preferably be large enough to contain all the feed needed during the quarantine period. Alternatively, silos may be permitted inside the perimeter fence and feed augured into the facility. The feed must be inaccessible to vermin. The operator may carry additional quantities of feed in with approval from the supervisor.

### **3.3.4 Identification of birds and register**

Birds must be identified as required by the import health standard.

If identification is required then a register of birds must be maintained which records the identity and fate of all birds within the facility.

## **3.4 Disease Surveillance**

The birds must be subjected to such examinations, testing or treatment as is required:

- by the import health standard,
- for disease investigation, or
- as required by the chief technical officer.

The operator must observe birds for signs of illness, injury, and abnormal behaviour periodically throughout the day. The level of daily surveillance must be sufficient to ensure that sick and dead birds are found in sufficient time for follow up procedures by the supervisor.

The operator must report immediately to the supervisor any serious illness, death or changes of behaviour in the birds.

Birds must be available for inspection by the supervisor who reserves the right to take specimens at any time for disease testing.

No medication or drugs are to be administered to birds without the approval of the chief technical officer. Treatments or prophylactic measures must not interfere with disease surveillance.

Necropsies to establish the cause of death must be carried out as soon as is possible after death.

The supervisor is to advise the chief technical officer of all test results.

### ***3.4.1 Autopsy of birds***

Facilities must be provided for the necropsy of birds and the preparation of samples for dispatch to the laboratory.

The post-mortem room must be located within the quarantine area. Access must be provided to hot and cold water. The facility must have, or access to, sufficient equipment to perform a full necropsy, and provide for the collection and submission of samples.

The carcasses of dead birds, must be kept under refrigeration, until post-mortem or as directed by the supervisor

### ***3.4.2 Occurrence of infectious disease***

If an infectious disease occurs during quarantine the cause must be established and reported to the deputy chief technical officer by the supervisor. If the disease is exotic to New Zealand the chief technical officer may direct the management of disease control and extend the period of quarantine or order the destruction of the birds.

Equipment and supplies must be available (offsite is acceptable) to clean and disinfect, using an approved disinfectant, the quarantine facility in the event of a disease occurrence.

If the birds are to be destroyed and/or the facility requires decontamination then contingency plans must be prepared to ensure that birds are humanely destroyed and all waste is disposed without contaminating the environment.

The facility, pens and accessories etc. must be thoroughly cleaned and sprayed with an approved disinfectant.

Approval must be sought from the chief technical officer before the facility can be used again.

### **3.4.3 Shared quarantine**

If a subsequent shipment of birds or genetic material arrives during quarantine then the release of all birds must be delayed until the last shipment is authorised for biosecurity clearance.

### **3.4.4 Veterinary practitioner**

The practitioner may attend to birds in the facility provided that the rules for visitors are followed.

If surgical and anaesthetic equipment is brought to the facility it must be cleaned and autoclaved or disinfected with an approved disinfectant under direction of the supervisor before removal.

## **3.5 Management matters**

### **3.5.1 Vermin control**

Surveillance and pest control systems must be maintained for insects, rodents and other vermin.

### **3.5.2 Contingency plans**

Contingency plans must be in place to take account of an inadvertent liberation, vehicle breakdown during transport, fire, exotic disease occurrence, or any other emergency. Resources must be identified and accessible for the contingency.

If there is an escape of birds from the facility action must be immediately taken to prevent further escape and to recover and return to containment the escaped birds. Similarly, if birds or animals enter the facility. Procedures must address the fate of in-contact animals. The supervisor must be advised as soon as is possible. The contingency plan must include procedures to minimise the risk of escape of infectious organisms if any of the protective systems should fail. The plan must identify all reasonably foreseeable failures, (such as blockage of a drain, failure of a fan, failure of an electrical component etc.), and detail the actions to be taken for each. The plan must cover:

- Sealing of any openings that may be created in the containment perimeter as a result of the failure or as required to permit repair work to be carried out.
- Control of entry and egress through the containment perimeter during the emergency.
- The activities of service staff.

### **3.5.3 Costs**

The operator is required to pay all costs associated with the operation of the facility. The costs of approval and supervision of the facility must be in accordance with the Biosecurity Act 1993 and its regulations.

### **3.5.4 Biosecurity clearance**

The supervisor is responsible for biosecurity clearance of the birds from quarantine when the requirements of the import health standard are met (section 4.2.4.6).

### **3.5.5 External audit**

The operator must provide the supervisor or any other representative of the chief technical officer access to the facility, records and documents for inspection and audit. The operator must be available to assist and ensure that all relevant procedures and records are made available to the supervisor.

The supervisor will conduct inspections and on-site audits as specified in section 4.2.4. Additional audits will be conducted as required, especially if non-compliance is found.

For incidents of non-compliance see section 4.2.4.5.

Constant or excessive breaches will require a full inspection and testing of the system prior to re-certification.

### **3.5.6 Records**

The operator is required to demonstrate compliance with this Standard by keeping records as required for the quality assurance programme and documented in the quarantine manual. The operator must, for auditing purposes, maintain for three years the following records filed with each permit to import:

- Exporter, country of origin, import health certification, number and identity of birds imported, date of arrival, number released, release date and name and address of owner receiving the released birds, biosecurity clearances.
- Details of diseases diagnosed, the bird's morbidity and mortality records and treatments given.
- Entrance logbook and declarations.
- Biosecurity directions and permits to move goods and birds from the facility.
- Records of internal audits and corrective actions.
- Records of external audits and corrective actions.

## **Part Four: Requirements for the supplier of supervision**

### **4.1 Service Requirements**

#### **4.1.1 Service outline**

The supplier must provide the chief technical officer with a service to supervise the activities of operators who are required to operate transitional facilities according to Parts One, Two and Three of this Standard.

#### **4.1.2 General requirements**

Supervision must be administered in accordance with this Standard, a national quality system based on ISO/IEC 17020 and any relevant legislation.

The supplier must provide quarterly reports to the chief technical officer giving an update on the supplier's management structure and key personnel (refer section 4.2.3), and results of internal audits and corrective actions.

The supplier and employees must have no financial interest in the transitional facilities or any other affiliations, apart from proper remuneration for services rendered, that could be construed as conflict of interest.

The chief technical officer may audit the supervisor at each transitional facility.

#### **4.1.3 Key personnel**

Within one month of receipt of this Standard, the supplier must make formal arrangements for provision of the key personnel listed below. The deputy chief technical officer must be notified in writing of these arrangements.

##### **4.1.3.1 Management representative**

The management representative (reporting to senior management) must have defined authority and responsibility for ensuring that there are systems in place to meet the requirements of this Standard and that these systems are implemented and maintained.

### **4.1.3.2 Supervisors**

The deputy chief technical officer must approve supervisors before they are appointed. Qualifications: The supervisor must be a registered veterinary surgeon and an inspector as defined by the Biosecurity Act, 1993. The supervisor must be able to demonstrate that s/he has received training in avian diseases or has some experience with avian disease investigations. S/he must have an understanding of the principles of quarantine, quality systems and auditing, the import health standard, the requirements of this Standard, the relevant legislation and some appreciation of the business and objectives of the operator.

The supplier must ensure that a person appointed to be a supervisor of a transitional facility is able to describe in a way that can be clearly understood by the operator of these facilities:

- the commonly used means for meeting the transitional facility requirements as specified in this Standard,
- the circumstances in which such means can fail to comply, and
- the steps that should be taken to re-establish compliance.

The supplier must be responsible for the training of supervisors, so that they know their responsibilities for this Standard.

## **4.2 Technical Requirements**

### ***4.2.1 Approval of a facility***

The supervisor must be prepared to consider applications before construction of a facility, in order to provide advice on whether the proposed facility is likely to comply with the Standard.

The requirements for approval are described in section 1.2.1 of this Standard and the supervisor must inspect the facility before making a recommendation on approval.

If the quality system is accredited by an external agency as described in section 1.3, the supervisor must satisfy him/herself that the requirements of this Standard are addressed in the quality assurance programme.

### ***4.2.2 Approval of an operator***

Requirements for approval are described in section 1.2.2.

Where the facility is leased, the supervisor must examine the contract and be satisfied that the contract does not override the requirements of the Standard.

The supervisor shall make a recommendation to MAF taking these requirements into consideration.

### **4.2.3 Cancellation of approval**

The supervisor must refer to section 1.2.3, and if satisfied that the facility

- no longer complies with this Standard, or
- is no longer being used for the purpose(s) specified in the approval,

he/she must discuss the issue with the operator. If the issue is not resolved to the satisfaction of the supervisor, and after informing the operator of his/her intention in writing, the supervisor must make a recommendation to the chief technical officer that approval of the facility should be cancelled.

If the supervisor is satisfied that the operator;

- is not operating the facility according to this Standard,
- is no longer a fit and proper person,
- ceases to act as the operator or requests cancellation,
- he/she must discuss the issue with the operator.

If the issue is not resolved to the satisfaction of the supervisor, and after informing the operator of his/her intention in writing, the supervisor must make a recommendation to the chief technical officer that approval of the operator should be cancelled. If an alternative operator cannot be approved then approval of the facility must also be cancelled.

### **4.2.4 Supervision of a facility**

#### **4.2.4.1 Minimum requirements for inspection**

The supervisor must have a schedule for regular inspection of the facility and audit of operator's procedures. S/he must make as many visits as considered necessary but the minimum number of visits are:

**Before a permit to import is issued**, the supervisor must advise MAF that the facility meets the requirements of the Standard. [If a facility approval had been cancelled then the supervisor shall also recommend approval (see section 1.2.1.5)],

- the supervisor must audit the facility and procedures to ensure that the facility meets the requirements of this Standard,
- the supervisor must recommend to MAF that the facility is approved and/or that a permit to import is issued.

**Within 24 hours of the arrival of the eggs or birds**,

- check the exporter's certification against the requirements of the import health standard,
- oversee the destruction of the fillers and packaging by incineration, and the fumigation of the crates and cartons,
- check the health and identity of the birds (if appropriate),
- attend to the requirements of the import health standard.

### **After hatching,**

once a week until biosecurity clearance of the birds.

At every visit the supervisor must:

- Inspect the birds for any sign of disease,
- Check that the operator and the facility continue to meet the requirements of this Standard,
- Take action as appropriate.

#### **4.2.4.2 Disease surveillance and treatment**

The supervisor must subject the birds to such testing and treatment as is required:

- By the import health standard,
- for disease investigation, or
- as required by the chief technical officer.

The supervisor has the responsibility for ensuring that, wherever possible, the cause of disease or death is established.

The supervisor must contact the MAF Exotic Disease Hotline 0800 80 99 66 and the Animal Imports & Exports Group immediately if a new or unwanted organism is suspected.

#### **4.2.4.3 Submission of specimens to the laboratory**

The supervisor must phone the laboratory before submitting samples to advise the laboratory and receive direction on the type of samples to send. The packaging of specimens of infectious material must be in accordance with instructions from the laboratory. Samples are to be dispatched in a clearly addressed sealed box by the fastest secure method.

#### **4.2.4.5 Non-compliance**

For incidents of non-compliance the supervisor must issue:

- A **critical situation report** for situations that may present a risk to biosecurity. For example, when a bird was moved out of a transitional facility without approval.

The supervisor must advise the chief technical officer immediately and the action taken may be in accordance with section 126 of the Biosecurity Act:

The supervisor must give a direction in writing to the operator of the facility specifying the suspected failure to comply or unsatisfactory circumstances, stating what the operator is required to do to remedy the situation and specifying the time within which the direction must be complied with.

The chief technical officer may direct that all permits to import are cancelled and may not be re-issued until the non-conformity is rectified.

If the chief technical officer considers it necessary s/he may intervene in the management and operation of the facility in order to ensure compliance with the standards for that facility.

The chief technical officer may direct that all birds are kept for an extended quarantine period.

- A **corrective action request** [CAR] for a non-compliance that is not a serious risk to biosecurity. For example, a notice is not placed at the entrance of the transitional facility showing that access is restricted.

Quarantine be will permitted to continue but the operator will be given a specified period of time to rectify the non-conformity.

The issuance of a CAR during any of the above audits/visits will necessitate that follow up audits be performed which specifically address compliance to the subject of the CAR.

#### **4.2.4.6 Biosecurity clearance**

At the end of the quarantine period the supervisor may authorise biosecurity clearance for the birds once satisfied that:

- The conditions of the import health standard have been met and the exporter's certification is in order.
- The transitional facility has been operating according to this Standard.
- The birds are in good health and there is no evidence of exotic disease.

The recommendation must include, but is not limited to:

- Species and source of birds,
- Date of arrival and proposed date of release,
- Probable cause of disease,
- Mortality and morbidity,
- Laboratory findings.

When approved the supervisor must issue a biosecurity clearance in writing to the operator.

#### **4.2.4.7 Cost recovery**

The supervisor must recover the costs associated with supervision in accordance with the Biosecurity Act 1993 and its regulations.

#### **4.2.4.8 Reporting requirements**

The supervisor must provide MAF every six months with a written report for each facility supervised that shows:

- The number and species of birds imported,
- Biosecurity clearances issued,
- CARs issued and progress toward compliance.

#### **4.2.4.9 Records**

The supervisor is required to keep records of inspections and audits of the operation of quarantine. These records which are to be archived must include:

- Reports to MAF,
- Audit findings,
- Reports of critical situation reports, CARs and the results of follow-up visits.

The supervisor must also maintain the following records for each shipment imported:

- Permit to import number, date of arrival and health certification documents from the country of origin,
- Country of origin, description of birds,
- Owners name and address,
- Laboratory test results to meet import health standard requirements,
- Details of significant behavioural changes, sickness, injuries, treatments, post-mortem results,
- Date of biosecurity clearance.

#### **4.2.4.10 Transitional Facility/Operator Registration Forms**

Application forms and information on registering as a transitional facility and operator can be found on the MAF Biosecurity New Zealand website at:

<http://www.biosecurity.govt.nz/regs/trans/register>