

Information Reference Guide

This Information Reference Guide provides personnel with quick reference information and examples to support objective decisions when undertaking building surveys.

Contents

Information Reference Guide.....	1
Contents	1
Overview.....	3
Building Surveys	5
IR 30 Number of Escape Routes	5
IR 31 Escape Route Lengths.....	5
IR 32 Escape Route Height and Width	5
IR 33 Direction of opening	6
IR 33 Degree and width of opening	6
IR 34 Locking devices	6
IR 35 Final Exits	6
IR 36 Fire or smoke separation openings	7
IR 36 Doorset markings.....	7
IR 37 Smoke seals	8
IR 38 Signs.....	8
IR 39 Safe Condition Signs	8
IR 39 Illumination.....	8
IR 40 Emergency lighting	9
IR 42 Doors on escape routes.....	9
IR 42 Flammable liquids or like material	9
IR 43 Suspended Fabrics and Surface Finishes.....	10
IR 44 Internal Fire Separation	10
IR 45 Fire Alarm Type	11
IR 46 Sprinkler Systems.....	11
IR 47 Clear Space below Sprinkler Heads.....	11
IR 48 Compliance Schedules	12
Fire Evacuation Information	13
IR 49 Evacuation Procedures.....	13
Building Fire Safety.....	14
IR 50 Electrical Appliances.....	14

IR 51 Reasonable Fire Prevention Precautions	14
IR 52 Gas Appliances.....	15
IR 53 Reasonable Fire Prevention Precautions	15
IR 54 Liquid Fuel Appliances	16
IR 54 Reasonable Fire Prevention Precautions	16
IR 56 Open Flame Appliances.....	16
IR 57 Reasonable Fire Prevention Precautions	17
IR 58 Packing and Unpacking of goods.....	17
IR 59 Flammable packaging	18
IR 60 Storage of certain material	18
IR 61 Fire Spread.....	19
FireFighting Equipment.....	20
IR 62 Hosereels	20
IR 63 Fire extinguishers.....	20
IR 63 The maximum distance.....	21

Released under the Official Information Act

Overview

This guide has been developed for specific single reference information only. The evacuation scheme approval process - document review and the 409 building inspection report forms identify individual information reference numbers. e.g. IR 2

When reviewing evacuation scheme documentation or carrying out a building inspection and you are unsure of the requirements of the individual prompts - identify the IR reference number and locate the reference information in this guide.

Note: The building inspection information in this guide benchmarks the Approved Documents. In some situations buildings built before 1992 may not be required to meet the current requirements of the Approved Documents. If you require further clarification contact a senior fire safety practitioner for advice.

Released under the Official Information Act

Reference Number	Page	Reference Number	Page	Reference Number	Page
				IR 43	
				IR 44	
				IR 45	
				IR 46	
				IR 47	
				IR 48	
				IR 49	
				IR 50	
		IR 30		IR 51	
		IR 31		IR 52	
		IR 32		IR 53	
		IR 33		IR 54	
		IR 34		IR 55	
		IR 35		IR 56	
		IR 36		IR 57	
		IR 37		IR 58	
		IR 38		IR 59	
		IR 39		IR 60	
		IR 40		IR 61	
		IR 41		IR 62	
		IR 42		IR 63	

Released under the Official Information Act

Building Surveys

IR 30 Number of Escape Routes

Most buildings or occupied spaces are required to be served by two or more escape routes. There are some exceptions for single escape routes, e.g. total occupant load from all firecells on each level served by the escape route is no greater than 50.

Reference: C/AS1 - 3.2

ME01.1

IR 31 Escape Route Lengths

The length of escape route varies depending on the occupant load, purpose group or alarm type.

Technical Reference: C/AS1 - 3.4 & Table 3.3

ME01.2

IR 32 Escape Route Height and Width

The clear height must be no less than 2100 mm across the full width. Ceiling fittings cannot exceed 200 mm in diameter and project no more than 100 mm downwards. Smoke or fire doors must have a clear height of no less than 1955mm.

The width of escape routes varies depending on occupant numbers and the purpose group activity.

Technical Reference: C/AS1 - 3.3 & Table 3.2

ME01.3

IR 33 Direction of opening

Doors on escape routes must be hung to open in the direction of escape, and where escape may be either direction, doors must swing both ways. These requirements do not apply if the number of occupants using the door is no greater than:

- 20 in an open path, or
- 10 into and within an exitway.

Doors used for the passage of beds in purpose SC and SD must be capable of swinging in both directions, (preferable to be on hold opens devices) and in the case of SC the doors must be of sufficient width to allow the passage of a bed and essential patient life support equipment.

Reference: C/AS1 - 3.17.4 & 3.17.5

ME02.1

IR 33 Degree and width of opening

Open doors do not cause the door swing to obstruct the minimum required width of any escape route.

Reference: C/AS1 - 3.17.4 & 3.17.5

ME02.1

IR 34 Locking devices

Where the building is occupied, locking devices must be clearly visible, located where such a device would be normally expected, designed to be easily operated without a key or other security device, and allow the door to open in the normal manner.

Reference: C/AS1 - 3.17.2

ME02.2 & 2.3

IR 35 Final Exits

Final exits are commonly the external doors from a ground floor, but this applies only if such doors open directly onto a safe place.

If a safe place can only be reached by passing down an alley or across a bridge, then the final exit is not reached until the end of such an alley or bridge.

Final exits, therefore, should be seen strictly as a point of arrival rather than as any particular element of a building. They are determined entirely by the location of the safe place.

ME03.1

IR 36 Fire or smoke separation openings

Where activities within a building require openings in the fire or smoke separation (e.g. for the passage of people, etc.), closures to those openings must have the fire resistance and smoke control performance appropriate to their location.

Doorset - Both NZS 4232 and the acceptable solutions use the concept of a “doorset” to define the relevant features of a fire door. The doorset includes all parts of the door, including the leaf, frame, and any side or over panels or lights in the frame, all hardware and vision panels, and fixing to the surrounding construction. Although not part of the “doorset”, NZS 4232 includes the type of wall into which the door is installed as a relevant feature.

Door clearances – Clearances must be as specified by the doorset manufacturer. Most manufacturer’s clearance tolerance between the double leafs is 3mm to 5mm and contact by the brush seals is a critical factor. In all cases where the clearances are not recorded, then clearances between a door leaf and any part of the frame or adjacent leaf, in the case of double-acting doors, must not be less than 2mm. The clearance between a door leaf and the finished floor must be not less than 3mm and not greater than 10mm.

Note: NZS 1188 Fire & Smoke doors – Prior to 1988 the majority of doors were a combination of fire & smoke doors. Standards at the time these doors were installed did not require the fitting of smoke seals and only required the use of close-fitting fire-rated doors. In some situations requiring smoke seals on existing doors cannot be required. If unsure of requirements refer to a Specialist Officer: Fire Risk Management for advice.

IR 36 Doorset markings

Doorsets must be clearly marked to show their FRR and where required, with “Sm” (-/xx/xx sm) to indicate smoke stopping capability.

Signs - Every doorset required to possess fire or smoke stopping capabilities must have a sign fixed to both sides of the door.

For example:

- “Fire” or “Smoke” Door “Please keep closed”
- “Fire” or “Smoke” Door – for doors with hold open devices

Reference: C/AS1 - 6.19, Table 6.1, F8/AS1 4.2.2 & NZS 4232 1988 109.3

ME04.1

IR 37 Smoke seals

In most cases, smoke control doors must be fitted with:

- smoke seals at the head and all vertical edges
- in the gaps between the door leaf or leaves
- the frame
- between leaves in multi-leaf doorsets.

Smoke seals may be of the brush type and need not incorporate intumescent material.

Reference: C/AS1 - 6.19.2 (b) & variations refer to 6.19.4

ME04.2

IR 38 Signs

All-purpose groups, except within household units in propose groups SR and SH, must have signs complying with NZBC F8 in escape routes.

The owner must fix signs in appropriate places in the building that clearly indicate the fire exits.

Reference: C/AS1 - 3.20 & FSEBR - 6 (4)

ME05.1

IR 39 Safe Condition Signs

Safe condition signs must:

- Be rectangular or square with a background of safety green, and a white safety symbol or text placed centrally on the background, and
- Have the background displayed over no less than 50% of the sign face.

IR 39 Illumination

Exit signs must be provided with external or internal lighting or the sign may be self-luminous. In most situations the signs will be visible by means of illumination from the general lighting. Theatres, auditoria and the like where normal lighting levels are low, are examples of where specific lighting would be required.

Reference: F8/AS1 - 3.0 & F8/AS1 - 3.5

ME05.2

IR 40 Emergency lighting

Emergency lighting in buildings must be provided as appropriate for the escape height, occupant load, purpose group and the familiarity occupants are likely to have in respect to the building layout. These requirements are based on the associated assessed risk to occupants escaping from a fire. As a result, emergency lighting in many cases is only required in exitways.

Purpose groups that require emergency lighting in exitways or extended to open paths throughout the firecell refer to C/AS1 Table 4.1.

ME06.2

IR 42 Doors on escape routes

Doors on escape routes must open onto a floor area which:

- extends for a distance of no less than the arc of the door swing, and
- is at the same level on both sides of the door for the full width of the escape route.

Comment: A 20mm threshold weather stop is acceptable on external doors.

Landings - Landings are required to be provided at the top and bottom of every flight of stairs, ramp or where a door opens into the stairway. In some cases a landing is not required if the door open inwards.

Reference: C/AS1 3.17.5 & D1/AS1 4.3

ME07.2

IR 42 Flammable liquids or like material

Flammable liquids or like material must not be stored near or within any part of the escape routes.

Storage - flammable liquids or like material are required to have noncombustible containers with close-fitting lids when stored. Over certain limits must be stored in an external location.

Flammable material - is material that can be readily ignited and become rapidly involved in flames; it includes any material contaminated with substances that are capable of initiating spontaneous ignition.

Reference: FSEBR Reg.5

ME08.1 & 8.2

IR 43 Suspended Fabrics and Surface Finishes

Within individual household units of purpose groups SR and SH, there are no restrictions on the use of suspended flexible fabrics. The only surface requirements are for foamed plastics.

For other purpose groups the surface finish requirements will depend on the specific purpose group and locations within the building. The requirements may be modified in sprinkler buildings.

Reference: C/AS1 6.20 & Table 6.2

ME09.1

IR 44 Internal Fire Separation

The extent to which internal fire separation is used in buildings depends mainly on the purpose group and activities within the building.

Consideration is given to:

Separating high-risk activities from other activities, especially from sleeping purpose groups.

Separating one activity from another activity or simply reducing the number of people in adjacent similar spaces. e.g. Sleeping spaces from sleeping spaces, sleeping spaces from living and cooking spaces, escape paths from occupied floor areas, service ducts from floor spaces and escape paths, etc.

Preventing the movement of fire and smoke through concealed spaces and service ducts.

Penetrations in fire separation walls are required to be appropriately sealed.

This requires the application of validated passive fire protection materials and installation methods.

For example

- fire barrier panel systems
- fire stop collars
- fire resistant pillow systems
- foaming sealants
- fire stopping putty.
-

Reference: C/AS1 6.1 & Table 4.1

ME10.1

IR 45 Fire Alarm Type

The type of fire alarm required for different purpose groups will depend of the activity, number of occupants and the size or height of the building.

Every fire alarm system must be activated by methods appropriate to the occupant load and purpose group contained in the building. Compliance with Table 4.1 of the C/AS1 satisfies this requirement.

Fire alarm systems must be installed and maintained in accordance with New Zealand Standard NZS4512 and the specific requirements of F7/AS1.

Reference: F7/AS1 - 1.1, 2.1.1 & C/AS1 Table 4.1

ME11.1

IR 46 Sprinkler Systems

A sprinkler system does not comply with the standard unless, after completion of installation, it is tested, maintained and surveyed on a Regular basis by a qualified contractor.

Sprinklers are designed to protect complete firecells or complete buildings or groups of buildings. The sprinkler system has no integrity if there is partial protection of areas that are not physically fire separated from others.

Fire occurring in a stack of goods or packaging greater in volume, hazard or height than the sprinkler system has been designed for, could defeat the sprinkler system. A much larger fire or total loss is possible.

Sprinkler heads must not be painted subsequent to manufacture.

For purpose groups SC and SD - direct connection to the Fire Service is the only acceptable means of communication.

Reference: New Zealand Standard NZS 4541 - 509.1, 4515 - 3.2.4 & F7/AS1 - 2.2.3

ME12.1

IR 47 Clear Space below Sprinkler Heads

A clear space of at least 0.5m must be maintained below the level of the sprinkler deflectors throughout the room. For high pile combustible stock increased clearance of 1m or more must be provided.

Reference: New Zealand Standard NZS 4541 - 509.1

ME12.2

IR 48 Compliance Schedules

All buildings require a compliance schedule if the building contains one of the following building systems:

- SS 1 - Automatic systems for fire suppression.
- SS 2 - Automatic or manual emergency warning systems.
- SS 3 - Electromagnetic or automatic doors or windows.
- SS 4 - Emergency lighting systems
- SS 5 - Escape route pressurisation systems
- SS 6 - Riser mains for use by fire services
- SS 7 - Automatic back flow preventers
- SS 8 - Lifts, escalators, travelators or other systems for moving people or goods within buildings.
- SS 9 - Mechanical ventilation or air conditioning systems
- SS 10 - Building maintenance units
- SS 11 - Laboratory fume cupboards
- SS 12 - Audio loops or other assistive listening systems
- SS13 - Smoke control systems
- SS 14 - Emergency power systems for, or signs relating to, a system or feature in any of clauses 1 to 13.
- SS 15 - Other fire safety systems or features.
- SS 14/2 & 15/4 - Signs.
- SS 16 - Cable Cars.

Reference: Building Act 2004 Section 100

ME13.1

Fire Evacuation Information

IR 49 Evacuation Procedures

Procedure information should describe the following:

- Description of the fire alarm signal
- Location of escape routes to final exit
- Location of the assembly point(s)
- The required actions for the discovery of a fire or hearing the fire signal
- How to call the Fire Service
- Where provided, the firefighting equipment for use by the occupants

Reference: FSEBR Reg. 6

EP01.1

Released under the Official Information Act

Building Fire Safety

IR 50 Electrical Appliances

Appliances are required to be in good condition and safe working order. In particular:

- Heaters are clear of combustibles (radiated heat)
- Cords are not frayed, cracked or split
- Outlets are not overloaded
- Dangers from overheating and igniting are prevented
- Appliances are stable
- There are no broken fittings
- Adequate guards are provided
- Maintenance is adequately carried out
- Flammable atmospheres are prevented
- Clean with no building up of dust, grease, oil, etc

BFS01.1

IR 51 Reasonable Fire Prevention Precautions

This is a specialist field; the intent is to ensure that building owners or tenants are taking reasonable fire prevention precautions.

Reference: FSEBR Reg. 9

BFS01.2

IR 52 Gas Appliances

Appliances are required to be in good condition and safe working order. In particular:

- Pipe flexible hose connections are not damaged
- Flues are not damaged and are physically separated from combustible surfaces
- Ventilation is adequate
- Storage of cylinders is appropriate
- Appliances are stable
- Heaters are clear of combustibles
- Adequate guards are provided
- There are no broken fittings
- A flammable atmosphere (gas fumes) suggesting a possible leak or poor ventilation is not present
- Cylinders are securely attached to the appliance

BFS02.1

IR 53 Reasonable Fire Prevention Precautions

This is a specialist field; the intent is to ensure that building owners or tenants are taking reasonable fire prevention precautions.

Reference: FSEBR Reg. 9

BFS02.2

IR 54 Liquid Fuel Appliances

Appliances are required to be in good condition and safe working order. In particular:

- Hoses and fittings
- Storage of spare fuel
- Condition of fuel container
- Correct fuel and container and refuelling techniques
- Heaters clear of combustibles
- Stability of appliances
- Adequate guards
- Maintenance
- Ventilation – check for smells of fumes, possible leak or poor ventilation

BFS03.1

IR 54 Reasonable Fire Prevention Precautions

This is a specialist field; the intent is to ensure that building owners or tenants are taking reasonable fire prevention precautions.

Reference: FSEBR Reg.. 9

BFS03.2

IR 56 Open Flame Appliances

Appliances are required to be in good condition and safe working order. In particular:

- Hoses and fittings
- Storage of spare fuel
- Condition of fuel container
- Correct fuel and container and refuelling techniques
- Clear of combustibles – consider, convection, radiation and conduction
- Stability of appliances
- Adequate guards
- Constructed for purpose and appropriate venting and maintenance
- Welding processes & equipment (management)

BFS04.1

IR 57 Reasonable Fire Prevention Precautions

This is a specialist field; the intent is to ensure that building owners or tenants are taking reasonable fire prevention precautions.

Reference: FSEBR Reg.. 10

BFS04.2

IR 58 Packing and Unpacking of goods

In operations involving the packing and unpacking of goods (straw, paper wood-wool, or other flammable material), appropriate fire precaution must be in place. In particular:

- Public are excluded from packing and unpacking areas.
- Openings between packing/unpacking areas and stairways (etc) have fire-rated partitions and/or doors.
- There is no lighting or heating device that could be used in a manner that could cause the packaging materials to ignite.
- "NO SMOKING" signs in place (where appropriate).

Reference: FSEBR Reg.. 11

BFS05.1

IR 59 Flammable packaging

Flammable packaging material outside working hours are kept either:

- Away from the building (externally).
- In non-combustible containers with close-fitting lids.
- In a building designed to store the material.

Reference: FSEBR Reg.. 11

BFS05.2

IR 60 Storage of certain material

This requirement only applies to a building or part of the building that is mostly used for storage of the materials described below.

- timber:
- firewood or other wooden materials:
- hay, straw, or other dry plant cuttings:
- packaging materials:
- refuse of a type which is likely to burn if lit:
- any other flammable material:

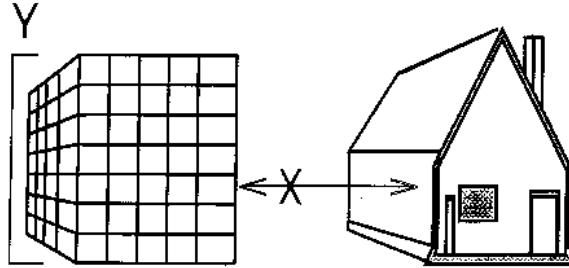
The building must be located in such a position that any fire in it cannot spread to any nearby building or any road or other public place.

BFS06.1

IR 61 Fire Spread

Each building must be carefully assessed considering content, ignition sources, windows, other openings and building construction, including fixed fire protection and the relationship to any adjacent exposures.

Check that the horizontal distance to any building, road or other public place would be equal to or greater than the vertical height of the material being stored.



DISTANCE X SHOULD BE GREATER
THAN OR EQUAL TO DISTANCE Y

Reference: FSEBR Reg..12

BFS06.2

FireFighting Equipment

IR 62 Hosereels

Hosereels are required to be in good working order. In particular:

Are easily seen and marked with clear conspicuous signs.

Have clear and readable labels, detailing the operating instructions.

Cabinets clear of obstructions to enable access to the hose and control taps.

Serviced on an annual basis.

The nozzles rotate smoothly and are in good working condition.

On/off taps show no sign of damage.

Hose-line connections show no sign of damage.

IR 63 Fire extinguishers

Fire extinguishers are required to meet the following requirements:

- Are clearly indicated with conspicuous signage.
- Have clear readable labels, detailing the operating instructions.
- Are free of obstructions and are easily accessible.
- Have a service label and have been serviced within the past 12 months.
- Tampering pin and seal in place.
- No signs of damage and corrosion.
- Wall brackets holding the fire extinguishers are secure and in good condition.
(Release the brackets to ensure that the extinguishers are easy to remove).

Mounting requirements:

- Maximum height: 1200mm from the ground to the top of the fire extinguisher handle.
- Minimum clearance: 100mm from the floor to the bottom of the fire extinguisher.

Reference: NEW ZEALAND STANDARD NZS 4503 & AS/NZS 1841.1:1997

BFS02.1

IR 63 The maximum distance

of travel from any point in the building to a fire extinguisher is no greater than 30 metres.

Note: If hose reels are installed throughout the building this would meet the minimum requirements. Fire extinguisher may only be required for specific risk areas. e.g. kitchen, electrical switch board.

Reference: NEW ZEALAND STANDARD NZS 4503

FE02.2

Released under the Official Information Act