

**THE PAINT
MANUFACTURERS'
ASSOCIATION**



**GUIDE TO THE
NEW ZEALAND
BUILDING CODE**

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The Building Act which came into effect in July 1992, repealed numerous existing Acts and Regulations replacing them with a performance based rather than a prescriptive National Building Code. This booklet is a guide to the aspects of the Building Code which relate to paint systems.

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QUICK REFERENCE TO PAINT SYSTEMS COMPLYING WITH THE PERFORMANCE REQUIREMENTS OF NEW ZEALAND BUILDING CODE

There are four clauses of the N Z Building Code particularly pertinent to the paint industry;

- | | |
|--------------------------------|--------------------------------|
| 1. B2 DURABILITY | 2. C3 SPREAD OF FIRE |
| 3. E2 EXTERNAL MOISTURE | 4. E3 INTERNAL MOISTURE |

1. B2 DURABILITY

There is no durability requirement for decorative coatings, but a 5 year minimum period for protective coatings. However, in the absence of a specified life of a protective coating a 5 year durability against moisture is required (see Table 1 page 7).

In relation to paint, whether a paint coating is only decorative or also protective is often in practice not clear cut. As a guide-line, the following definitions are provided:

Decorative Paint Coating:

“a paint coating whose function is essentially only to adorn a surface (see definition of protective coating).”

Protective Paint Coating:

“a paint coating whose function is to protect substrate building materials from the harmful effects of moisture, chemical attack and weather and the absence of the coating would render the substrate inadequate to meet the requirements of the NZ Building Code.”

NEW ZEALAND BUILDING CODE, SECTIONS C2, C3, C4 PURPOSE GROUP CLASSIFICATIONS <i>Refer to Table A1 on pages 13 and 14 for examples</i>	
PRIMARY USE OF SPACE	DISTINCTION BETWEEN USE
CROWDS C	CS = Small CL = Large CO = Open air CM = Mercantile
SLEEPING S	SC = Care SD = Detention SA = Accommodation SR = Residential SH = detached House
WORKING W	WL = Low fire hazard WM = Moderate fire hazard WD = Dangerous
INTERMITTENT USE I	IE = Exitways IA = Ancillary ID = Dangerous

2. C3 SPREAD OF FIRE

Approved Documents C3's fire safety requirements for paint finishes depend on the building purpose classification as noted on the previous page.

There are however NO requirements for fire inhibiting properties to wall and ceiling surface finishes within individual household units of purpose groups SR and SH.

For other purpose groups refer to Table 4 in Section C3 for surface finish requirements (refer page 15).

PMA COMMENTS

Paint manufacturers can provide details of the following properties of selected paint systems on selected substrates

- (a) Ignitability index*
- (b) Spread of flame index (SFI)*
- (c) Heat evolved index*
- (d) Smoke developed index (SDI)*

when tested to:

AS 1530 methods of fire tests on building materials, components and structures – Part 3: simultaneous determination of ignitability, flame propagation, heat release, and smoke release.

- In Firecells equipped with sprinklers only the ceilings need comply with the SFI and SDI requirements of Table 4.
- In Exitways in all purpose groups and sleeping areas in purpose groups SC and SD the SFI = 0 and SDI not > 3.

EXCEPTIONS

Surface finish requirements do not apply to:

- *Handrails, architraves and skirting*
- *Door leaves*
- *Timber joinery*

3. E2 EXTERNAL MOISTURE

Approved Document E2 refers primarily to external building elements such as roof and wall cladding materials and NOT paint finishes, although in some cases an applied finish may be a necessary part of the element.

4. E3 INTERNAL MOISTURE

Paint manufacturers can advise on paint systems which meet the requirements (non-absorption and easy cleaning) of Approved Document E3

EXEMPT BUILDINGS AND BUILDING WORK

All building work is required to comply with the New Zealand Building Code, but various types of building work are exempted from the need for building consents. Exempt work includes "like-for-like" repair and maintenance except in certain cases, particularly when the component or assembly concerned contributes to the fire-safety properties of the building.

BRIEF EXPLANATION OF THE NEW ZEALAND BUILDING CODE

Since 1 January 1993 the old system of building bylaws has been replaced by a new system for controlling “building work”, which includes alterations and repairs. The new system is set out in the Building Act 1991 and the Building Regulations 1992, and differs from the previous system in that it is performance based rather than prescriptive. In other words architects, designers, specifiers and builders are given the freedom to use any method or material of construction provided the building meets the performance criteria specified in the New Zealand Building Code (the First Schedule to the Building Regulations).

The Building Act established the Building Industry Authority as a central focus for building controls, and the Building Industry Authority has issued a series of “Approved Documents” specifying “acceptable solutions” and “verification methods” for use in establishing compliance with the New Zealand Building Code. There is no legal requirement to comply with the Approved Documents, but compliance with them is legally equivalent to complying with the New Zealand Building Code, although not the only means of complying with it.

The current list of Approved Documents is set out on page 12. Each Approved Document corresponds to one of the 35 “functional requirement” clauses of the New Zealand Building Code. Approved Document C3 deals with spread of fire, and references, definitions, and appendices relevant to C3 are included in an Annex to Approved Document C4, some of which is shown on pages 13 to 16.

The new system is operated in detail by Territorial Authorities (i.e. local councils) who will continue to make checks and inspections to satisfy themselves that building work complies with the New Zealand Building Code. However, the “owner” has the additional option of engaging building certifiers registered with the BIA, to make checks and inspections instead of the Territorial Authority.

CONFORMING TO THE CODE

It should be noted that the “acceptable solutions” provide only one means of compliance with the codes mandatory performance statement. There are two other ways of conforming to the performance standards of the building code;

- (a) “Alternative Solutions” which are allowable at the discretion of the Territorial Authority (TA) or by a “determination” of the BIA.
- (b) The BIA may “accredit” the use of materials, components and construction methods. Accreditation will require an independent technical review. Accreditation certificates are issued by the BIA, which must be accepted by the Territorial Authorities.

BODIES AND DOCUMENTS

Building Industry Authority - (BIA):

An agency established by Government to formulate a simplified building code and to oversee the new building control system. The BIA replaces the Building Industry Commission.

Territorial Authority - (TA):

A district or city council.

Building Certifier:

An independent person, registered with the BIA, commissioned by the building owner to certify that plans and specifications comply with the building code.

Approval by a Building Certifier, acting within the predefined limits, must be accepted by the Territorial Authority.

Building Consent:

This document will replace the current building permit. It will be applied for by the building owner and will supply sufficient information for the Building Certifier or Territorial Authority to check that plans and specifications meet the performance requirements of the building code.

Code Compliance Certificate:

Issued by a Building Certifier or Territorial Authority to show that the work carried out complies with the building code.

Compliance Schedule:

A compliance schedule will be issued for a building that contains certain automatic systems whose proper maintenance is necessary to prevent risk to health or safety, such as fire alarms, sprinkler systems, lifts, ventilation systems and emergency lighting etc. The compliance schedule will specify inspection and maintenance procedures for those systems, and also for additional features such as means of escape from fire. It will also identify those procedures that are to be undertaken by “independent qualified persons” with an appropriate level of expertise accepted by the territorial authority. The compliance schedule is issued by the territorial authority and the owner is responsible for ensuring that its procedures are followed. Compliance schedules are not required for an ordinary house even if it contains a lift or a fire alarm system.

Building Warrant of Fitness:

This document is the result of a Compliance Schedule. It is the building owner's confirmation to the public that the special systems of the building have been properly maintained.

This Warrant of Fitness will be undertaken annually, copied to the Territorial Authority and displayed in a public place within the building.

EXPANDED NOTES TO: DURABILITY - B2

The performance specified in Clause B2 “Durability” of the New Zealand Building Code states: ... building elements shall with only normal maintenance continue to satisfy the performance of this code for the lesser of the specified intended life of the building.

or:

“**B2.3.** From time to time a code compliance certificate is issued, building elements shall with only normal maintenance continue to satisfy the performance of this code for the lesser of: the specified intended life of the building if any,

or:

- (a) For the structure, including building elements such as floors and walls which provide structural stability: the life of the building being not less than 50 years.
- (b) For services to which access is difficult, and for hidden fixings of the external envelope and attached structures of a building: the life of the building being not less than 50 years.
- (c) For other fixings of the building envelope and attached structures, the building envelope, lining supports and other building elements having moderate ease of access but which are difficult to replace: 15 years.
- (d) For linings, renewable protective coatings, fittings and other building elements to which there is ready access: 5 years.”

WHAT DOES THIS MEAN?

Specifically, it means that buildings, building components, and construction methods are sufficiently durable to ensure that the building as a whole can be properly looked after so that it will continue to comply with the NZ Building Code throughout its life.

Components having a shorter life than the building as a whole must be able to be replaced at the end of their lives without the need for major reconstruction or renovation.

As the words “decorative” and “protective” are not defined in Section B2, they are not deemed to have a specific Code meaning.

PMA COMMENTS

There is no durability requirement for decorative coatings but a 5 year minimum period for protective coatings.

The life of a paint system will vary depending on location, environment, atmospheric conditions i.e. coastal or geothermal areas, new work or repaint, preparation, colour and application.

Paint manufacturers can advise on products and specifications to meet particular demands.

In relation to paint, whether a paint coating is only decorative or also protective is often in practice not clear cut. Professional advice sought from Consulting Civil Engineers stated the following definitions would be appropriate:

Decorative Paint Coating:

“a paint coating whose function is essentially only to adorn a surface (see definition of protective coating).”

Protective Paint Coating:

“a paint coating whose function is to protect substrate building materials from the harmful effects of moisture, chemical attack and weather and the absence of the coating would render the substrate inadequate to meet the requirements of the NZ Building Code.

The BIA do not intend to provide a definitive interpretation of a general nature on what is a “decorative” paint vs a “protective” paint.

Durability guidelines given by reputable paint manufacturers on their premium products can be used to help establish the suitability of a paint coating for an end use.

PMA COMMENTS

Protective Coating

This mainly applies to “Barrier” type coatings where the undercoated substrate would fail to meet the Building Code if uncoated.

Decorative Coating

Most paint systems fall into this category, where the paint system serves to enhance the aesthetics and performance of the substrate, but the substrate would meet the Building Code alone.

TABLE 1: EXAMPLES OF BUILDING ELEMENTS REQUIRED TO HAVE 5 AND 15 YEARS DURABILITIES

Paragraph 1.0 Comment 2

5 YEAR DURABILITY	15 YEAR DURABILITY
<i>Wall and ceiling linings</i>	<i>Structural suspension systems for ceilings</i>
<i>Floor coverings in wet areas (bathrooms and laundries etc.)</i>	<i>Internal wall and floor secondary elements (doors, windows, trapdoors)</i>
<i>Internal and exterior coatings used as protection against moisture</i>	<i>Internal stairs/ramps/balustrades</i>
<i>Exposed plumbing and electrical fittings</i>	<i>Waterproof linings in showers and around wet areas such as baths</i>
<i>Signs</i>	<i>Impervious barriers to protect adjoining occupancies</i>
<i>Hot water cylinders</i>	<i>External wall (cladding/sheathing)</i>
	<i>External wall secondary elements (windows/doors)</i>
	<i>Roof (cladding/sheathing)</i>
	<i>Roof secondary elements (windows/skylights/doors)</i>
	<i>Services: High temperature flues (A 5 year durability is acceptable for high temperature flues which are readily accessed and easy to replace).</i>

EXPANDED NOTES TO: EXTERNAL AND INTERNAL MOISTURE

EXTERNAL MOISTURE -E2

The performance specified in Clause E2 “External Moisture” of the New Zealand

Building Code states: “... Roofs and walls shall prevent the penetration of water that could cause undue dampness, or damage to building elements.”

PMA COMMENTS

Approved Document E2 primarily refers to external building elements such as roof and wall cladding materials, joinery, vapour barriers, exterior joinery, and not paint finishes. Where a paint system is the building element that is intended to prevent penetration of water, Approved Document E2 applies to that paint system.

INTERNAL MOISTURE-E3

Clause E3 “Internal Moisture” of the New Zealand Building Code states:

“E3.3.3 Floor surfaces of any space containing sanitary fixtures or laundering facilities shall be impervious and easily cleaned.”

“E3.3.4 Wall surfaces adjacent to sanitary fixtures or laundering facilities shall be impervious and easily cleaned.”

“E3.3.5 Surfaces of building elements likely to be splashed or become contaminated in the course of the intended use of the building, shall be impervious and easily cleaned.”

PMA COMMENTS

Paint manufacturers can advise on paint systems to meet this requirement.

Approved Document E3 lists the following linings and finishes for floors and walls as adequate for “impervious and easily cleaned” surfaces:

3.1.2 Floors

- (a) Polyvinylchloride sheet.
- (b) Ceramic tiles with waterproof grouted joints.
- (c) Concrete with steel trowel finish.

3.1.3 Walls

- (a) Polyvinylchloride sheet.
- (b) Ceramic tiles with waterproof grouted joints.
- (c) Decorative high pressure laminate bonded to water resistant substrate.
- (d) Washable vinyl wallpaper on water resistant wall board, or sealed gypsum plasterboard.
- (e) Semi-gloss or gloss paint on water resistant wall board, or sealed gypsum plasterboard.
- (f) Modular or multiple lining units which are themselves impervious and easily cleaned and are installed with impervious joints.

PMA COMMENTS

In summary, for Section E3;

- *Paint is not an approved floor finish in E3 where an impervious finish is required however paint systems may be used providing it can be demonstrated that they comply with the codes performance criteria.*
- *Matt/flat paints are excluded from walls.*
- *There are no exclusions under this section for painted ceiling finishes.*

EXPANDED NOTES TO: SPREAD OF FIRE - C3

Clause C3 “Spread of Fire” of the New Zealand Building Code states:

“C3.3.1 ...Interior surface finishes on walls, floors, ceilings and suspended building elements, shall resist the spread of fire and limit the generation of toxic gases, smoke and heat, to a degree appropriate to:

- (a) The travel distance
- (b) The number of occupants
- (c) The fire hazard, and
- (c) The active fire safety systems installed in the building...”

“Surface finish” is defined in Approved Document C3 as follows:

“... The material on surfaces normally exposed to view, on either interior or exterior building elements. It can be a decorative coating or the uncoated lining or cladding itself.”

Approved Document C3, Paragraph 2.16 refers to surface finishes over wooden floors, walls and ceiling lining materials.

Paragraph 2.16 states:

2.16 WOOD AND WOOD PRODUCTS

2.16.1 Floors

In any firecell which has another firecell below, and where the required F or S rating is:

- (a) 60 minutes or more, the flooring within that firecell shall, if constructed of wood products, be covered by a non-combustible overlay, unless the firecell is sprinklered.
- (b) 30 minutes or less, the flooring may be of wood products, provided it has a thickness of no less than 20mm.

Note: Wood products include boards manufactured from wood fibres or chips bound by an adhesive as well as solid timber.

PMA COMMENTS

“F” ratings are the “Firecell” fire rating. The F rating is the time in minutes for which it is intended to prevent the fire spreading to another firecell within a building. “S” rating are the “Security” fire rating. The S rating is the time in minutes within which a fire should not cause structural failure, resulting in fire spread to “other property”.

2.16.2 Walls and ceilings

In any firecell when the required F or S rating is:

- (a) 60 minutes or more and the internal walls and ceilings are lined with wood products thicker than 1.0mm; unless the firecell is sprinklered S rating shall be increased to the level required by the higher fire hazard category of Table 1.
- (b) 30 minutes or less; linings of wood products may be of any thickness provided they comply with the surface finish requirements for linings in Paragraph 8.1.

Approved Document C3, Paragraph 4.9 refers to **Exterior** Surface Finishes.

Paragraph 4.9.1 states:

4.9.1 ROOFS

For roofs in purpose groups SC and SD, combustible materials shall not be used as an external cladding except that, a combustible surfacing which is in close contact with and adhered to, either a non-combustible substrate or timber no less than 18mm thick, is acceptable.”

PMA COMMENTS

Combustible paint coatings over non-combustible roof claddings, or timber greater than 18mm thick, is acceptable.

Paragraph 4.9.2 states:

“4.9.2 EXTERNAL WALLS

For external walls the acceptable properties of exterior surface finishes depend on the purpose groups exposed to the fire hazard, the building height, and distance from the relevant boundary. The requirements are given in Table 2.”

PMA COMMENTS

Table 2 on page 16 summarises exterior surface finishes, ignitability and combustibility requirements with regards to purpose group, distance to relevant boundary and height of building. Special requirements apply to purpose groups SC, SD, SA and SR. For sleeping use buildings (except detached houses) irrespective of the building height or distance from the boundary, there is a minimum requirement or Ignitability Index + 0 for surface finishes.

Paragraph 4.9.3 states:

4.9.3

Where a combustible surface finish of thickness greater than 1.0mm is fixed or applied to an external wall, the area to be regarded as unprotected area shall be:

- (a) Half the surface finish area for walls requiring a FRR.
- (b) The total surface finish area for walls not requiring a FRR.

Note: Combustible surface finishes increase the risk of vertical fire spread up the exterior of a building.”

PMA COMMENTS

Paragraph 4.9.3 will not apply to the majority of paint coatings as they are less than 1.0mm thickness. When the combustible surface finish is of thickness greater than 1.0mm on exterior walls, Paragraph 4.9.3 effectively increases the required minimum distance between the external wall and the relevant boundary by placing a minimum 50% of the wall to be regarded as an “unprotected area”. An unprotected area is an external wall of a building is defined in the definitions section of the Acceptable Solution C3 as:

“...

- (a) Any part of the external wall which has less than the required FRR. For example, a non fire rated window, door or other opening, or sheet metal.*
- (b) Any part of the external wall which has combustible material more than 1.0mm thick attached or applied to its external face, whether for cladding or any other purpose.”*

Acceptable solutions C3, Paragraphs 8.1 and 8.2 specify **Internal** surface finishes requirements that apply to paint systems as follows:

“8.1 GENERAL PRINCIPLES

8.1.1

There are no requirements for fire-inhibiting properties to surface finishes and suspended flexible fabrics within individual household units of purpose groups SR and SH.

PMA COMMENTS

Wall and ceiling surface finish requirements do not apply to multi unit dwellings, flats, apartments or detached dwellings or houses.

8.1.2

Specific requirements depending on purpose groups and location are given in Table 4 on page 14. These may be modified in accordance with Paragraph 8.1.5 where sprinklers are used.

8.1.3

In unsprinklered firecells, in any position not covered by the exceptions of paragraph 8.1.4, interior surface finishes on walls and ceilings shall have a SFI of no greater than 9, and where the SFI exceeds 5, and SDI shall not exceed 8.

8.1.4 Exceptions

Surface finish requirements do not apply to;

- Electrical switches, outlets, cover plates and similar small discontinuous areas.
- Handrails, architraves and skirtings.
- Damp-proof courses, seals, caulking, flashings, thermal barriers in cold store walls, and ground moisture barriers.
- Door leaves.
- Timber joinery.
- Flexible sheet material used as a building paper in wall construction or as a roof underlay, where not exposed to view from the interior.
- Pipes and cables.

8.1.5 Sprinklered spaces

In firecells equipped with sprinklers, only the ceilings need comply with the SFI and SDI requirements of Table 4.

8.2 Flooring

8.2.1

Flooring shall be either non-combustible, or have a pass in the standard test for flammability of floor coverings, wherever that flooring serves:

- (a) Exitways for all purpose groups.
- (b) Any space occupied by purpose groups SC or SD.

8.2.2

Paragraph 8.2.1 applies to flexible finishes such as carpets, vinyl sheet or tiles.

8.2.3

In firecells equipped with sprinklers the flooring need not comply with the requirements of Paragraph 8.2.1.

PMA COMMENTS

Painted or Polyurethaned timber floors are not permitted in exitways for all purpose groups and sleeping care (SC) and sleeping detention (SD) groups – unless covered by a non combustible approved floor covering.

Where sprinklers are installed paint or polyurethaned timber floors are permitted.

Purpose group SH is exempt from 8.2.1 by the definition of an exitway in the Building Code handbook.

APPENDIX A - NEW ZEALAND BUILDING CODE CURRENT LIST OF APPROVED DOCUMENTS

STABILITY

- B1 Structure
- B2* Durability

FIRE SAFETY

- C1 Outbreak of Fire
- C2 Means of Escape
- C3* Spread of Fire
- C4 Structural Stability in Fire

ACCESS

- D1 Access Routes
- D2 Mechanical Access Installations

MOISTURE

- E1 Surface Water
- E2* External Moisture
- E3* Internal Moisture

SAFETY OF USERS

- F1 Hazardous Agents on Site
- F2 Hazardous Building Materials
- F3 Hazardous Substrates and Processes
- F4 Safety from Falling
- F5 Construction and Demolition Hazards
- F6 Lighting for Emergency
- F7 Warning systems
- F8 Signs

SERVICES AND FACILITIES

- G1 Personal Hygiene
- G2 Laundering
- G3 Food Preparation and Contamination
- G4 Ventilation
- G5 Interior Environment
- G6 Airborne and Impact Sound
- G7 Natural Light
- G8 Artificial Light
- G9 Electricity
- G10 Piped Services
- G11 Gas & Energy Source
- G12 Water Supplies
- G13 Foul Water
- G14 Industrial Liquid Waste
- G15 Solid Waste
- H1 Energy Efficiency

* Documents relating to paint systems covered in this guide.

FIRE SAFETY ANNEX APPENDIX A C2•C3•C4

TABLE A1: PURPOSE GROUPS PARAGRAPH A2.1			
Purpose Group	Description of intended use of the building space	Some examples	Fire hazard category
CROWD ACTIVITIES			
CS	Occupied spaces with occupant load up to 100.	Cinemas when classed as CS, art galleries, auditoria, bowling alleys, churches, clubs (non residential), community halls, court rooms, dance halls, day care centres, gymnasia, lecture halls, museums, eating places (excluding kitchens), taverns, enclosed grandstands, indoor swimming pools.	1
CL	Occupied spaces with occupant load exceeding 100.	Cinemas when classed as CL, schools, colleges and tertiary institutions, libraries (up to 2.4m high book storage), nightclubs, restaurants and eating places with cooking facilities, (non residential) theatre stages, opera houses, television studios (with audience).	2
		Libraries (over 2.4m high book storage)	3
CO	Spaces for viewing open air activities (does not include spaces below a grandstand).	Open grandstands, roofed but unenclosed grandstand, uncovered fixed seating.	1
CM	Spaces for displaying, or selling retail goods, wares or merchandise.	Exhibition halls, retail shops	2
		Supermarkets or other stores with bulk storage/display over 3m high.	4
SLEEPING ACTIVITIES			
SC	Spaces in which principal users because of age, mental or physical limitations require special care or treatment.	Hospitals, care institutions for the aged, children, people with disabilities.	1
SD	Spaces in which principal users are restrained or liberties are restricted.	Care institutions, for the aged or children, with physical restraint or detention. Hospital with physical restraint, detention quarters in a police station, prison.	1
SA	Spaces providing transient accommodation, or where limited assistance or care is provided for principal users.	Motels, hotels, hostels, boarding houses, clubs, (residential), boarding schools, dormitories, community care institutions.	1
SR	Multi-unit residential dwellings.	Multi-unit dwellings or flats, apartments.	1
SH	Detached dwellings where people live as a single household or family.	Detached dwellings, houses, or household unit.	1
WORKING BUSINESS OR STORAGE ACTIVITIES			
WL	Spaces used for working, business or storage – light fire hazard.	Manufacturing, processing or storage of non-combustible materials, or materials having a slow heat release rate, cool stores, covered cattle yards, wineries, grading, storage or packing of horticultural products, wet meat processing.	1

CONTINUED ON NEXT PAGE

FIRE SAFETY ANNEX APPENDIX A C2 • C3 • C4

CONTINUED FROM PREVIOUS PAGE

TABLE A1: PURPOSE GROUPS (CONTINUED) PARAGRAPH A2.1			
Purpose Group	Description of intended use of the building space	Some examples	Fire hazard category
WORKING BUSINESS OR STORAGE ACTIVITIES			
WL	Spaces used for working, business or storage – light fire hazard.	Banks, hairdressing shops, beauty parlours, personal or professional services, dental offices, laundry (self-service), medical offices, business or other offices, police stations (without detention quarters), radio stations, television studios (no audience), small tool and appliance rental and service, telephone exchanges, dry meat processing.	1
WM	Spaces used for working, business or storage – medium fire hazard.	Manufacturing and processing of combustible materials not otherwise listed, bulk storage up to 3.0m high.	3
WD	Spaces used for working, business or storage – high fire hazard.	Areas involving sufficient quantities of highly combustible and flammable or explosive materials which because of their inherent characteristics constitute a special fire hazard, including: bulk plants for flammable liquids or gases, bulk storage warehouses for flammable substances, chemical manufacturing or processing plants, distilleries, feed mills, flour mills, lacquer factories, mattress factories, paint and varnish factories rubber processing plants, spray painting operations, waste paper processing plants, plastics manufacturing, bulk storage of combustible materials over 3m high.	4
INTERMITTENT ACTIVITIES			
IE	Exitways on escape routes.	Protected path, safe path.	1
IA	Spaces for intermittent occupation or providing intermittently used support functions – light fire hazard.	Garages, carports, enclosed corridors, unstaffed kitchens or laundries, lift shafts, locker rooms, linen rooms, open balconies, staircases (within the open path), toilets and amenities, and service rooms incorporating machinery or equipment not using solid-fuel, gas or petroleum products as an energy source.	1
ID	Spaces for intermittent occupation or providing intermittently used support functions – medium fire hazard.	Maintenance workshops and service rooms incorporating machinery or equipment using solid-fuel, gas or petroleum products as an energy source.	3
IE, IA and ID spaces are not considered occupiable areas when determining occupant load. Service rooms are spaces designed to accommodate any of the following: boiler/plant equipment, furnaces, incinerators, refuse, caretaking/ cleaning equipment, air-conditioning, heating, plumbing or electrical equipment, pipes, lift/escalator machine rooms, or similar services.			

FIRE SAFETY ANNEX APPENDIX A C2•C3•C4

TABLE 4:
REQUIREMENTS FOR SURFACE AND SUSPENDED FLEXIBLE FABRICS, TO INHIBIT FIRE SPREAD IN UNSPRINKLERED BUILDINGS PARAGRAPHS 7.1.1(F), 8.1.5, 8.3.1, 8.4.1, AND 8.4.2

Building Element	Purpose Group or Location	Requirements	Row
Walls, ceilings	<i>Purpose groups SR & SH</i>	<i>Nil requirement</i>	
	<i>Minimum requirements for all spaces in all units purpose groups except within household in purpose groups SR & SH.</i>	<i>SFI not > 9 or where the SFI is > 5 but not > 9 then SDI not > 8</i>	
	<i>Exitways in all purpose groups.</i>	<i>SFI – 0 SDI not > 3</i>	
	<i>Sleeping areas in purpose group SC & SD. All spaces, excluding exitways, in purpose groups CS & CL. (See note 1) Purpose group CM where the occupant load is between 50 and 1000. Sleeping areas in purpose groups SA.</i>	<i>SFI not > 2 SDI not > 5</i>	
	<i>Passageways, corridors and stairways not being part of an exitway.</i>	<i>SFI not > 7 SDI not > 5</i>	
Flooring – coverings	<i>Exitways.</i>	<i>Non-combustible, or pass the standard test for flammability of floor coverings.</i>	
	<i>Any space in purpose groups SC & SD</i>		
Ducts for HVAC systems	<i>Internal surfaces</i>	<i>SFI not > 0 SDI not > 3</i>	
	<i>External surfaces</i>	<i>SFI not > 7 SDI not > 5</i>	
Acoustic treatment and pipe insulations	<i>Within an air handling plenum in purpose groups SC, SD, SA & SR.</i>	<i>SFI not > 7 SDI not > 5</i>	
Suspended flexible fabrics	<i>Exitways in purpose groups, SC, SD, SA, SR & CO.</i>	<i>FI not > 12</i>	
	<i>All spaces in purpose groups CS & CL.</i>		
	<i>All spaces in purpose group CM where occupant load is between 50 and 1000.</i>		
	<i>Underlay to exterior cladding when exposed to interior spaces in purpose groups WM, WD, CO, CS and CL.</i>		
Membrane structures	<i>Purpose groups CS and CL</i>	<i>Pass the standard test for flammability of membrane structures</i>	
Column 1	2	3	

KEY:

SFI = Spread of flame index

SDI = Smoke developed index

FI = Flammability index

NOTES:

For purpose groups CS and CL the minimum requirement for occupied spaces need not apply where the occupant load is less than 250, the floor level is served by two or more exitways or final exits (separated by no less than the firecell width), and the difference in floor level between firecell and final exit is no greater than 600mm. When these requirements are met in classroom spaces in education buildings, the surface finish requirements of Row 4 may be reduced to SFI not > 7 and SDI not > 5

FIRE SAFETY ANNEX APPENDIX A C2•C3•C4

TABLE 2: EXTERIOR SURFACE FINISHES OF EXTERNAL WALLS PARAGRAPHS 4.9.2			
BUILDING HEIGHT (M)	PURPOSE GROUP SC, SD, SA, SR	ALL OTHER PURPOSE GROUPS	
		<i>Distance from relevant boundary</i>	
		<i>Less than 1.0m</i>	<i>1.0m or more</i>
<i>Up to 7</i>	<i>Ig = 0</i>	<i>Ig = 0</i>	<i>N/R</i>
<i>Up to 16</i>	<i>Non combustible (Note 1)</i>	<i>Ig = 0</i>	<i>N/R</i>
<i>Up to 25</i>	<i>Non combustible (Note 1)</i>	<i>Ig = 0</i>	<i>Ig = 0 (Note 2)</i>
<i>Over 25</i>	<i>Non combustible</i>	<i>Non combustible</i>	<i>Non combustible (Note 2)</i>
<i>Column 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
KEY:			
<i>Ig</i>	=	<i>0 represents an ignitability index of zero</i>	
<i>N/R</i>	=	<i>No restriction</i>	
NOTES:			
<i>1 For purpose group SA and SR Ig = 0 may be used</i>			
<i>2 No requirement if distance to relevant boundary is greater than 7.0m.</i>			

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