CHAPTER 1

1.1 GENERAL

The code serves to establish the minimum requirements for fire safety provisions. It takes into account the function, design, management, operation, and maintenance of buildings to secure the life safety of occupants in the event of a fire.

1.1.1 BUILDINGS DESIGNATED FOR CONSERVATION

Buildings including shophouses, which are designated for conservation under the Urban Redevelopment Authority's (URA) conservation programme shall comply with the set of documents on "Fire Safety Requirements affecting shophouses under Conservation" issued by URA on 28 Jul 93 under Circular No URA/PB/93/20-CUDD. Please see Appendix (A).

1.1.2 The "Fire Safety Requirements affecting shophouses under Conservation" shall also be applicable to old shophouses, including residential buildings (except temporary dwelling houses), having timber floors or staircases, whether designated or not for conservation by URA, subject to the following conditions:

(a) The above relaxation shall be applicable to buildings that were existing before 1969;

(b) There shall be no change of use to boarding houses, hotels, workers' quarters and the like, irrespective whether the building is under conservation or not; and

(c) The upgrading of fire safety works shall be applicable to the whole building; partial upgrading of building is not acceptable.

1.1.3 Rapid Transit System

Fire safety requirements for underground, surface and elevated rapid transit systems, including trainways, transit stations, train maintenance depots, on-line electric substations and rapid transit system facility buildings, shall comply with the circular on "Standard for Fire Safety in Rapid transit Systems" issued by FSB (now FSSD) on 5 Sep 2000.

1.1.4 Fire Safety Requirements in Temporary Buildings in Construction Sites

All temporary structures/buildings in construction sites shall comply with SS CP 102 Code Of Practice For Temporary Housing Quarters On Construction Sites.

Although submission of plans to SCDF (FSSD) is not required, a set of plans of the temporary buildings, duly endorsed by a Qualified Person (QP), shall be available on site for inspection by the Relevant Authority at all times. Please note that Regulation 42 of the Fire Safety (Building Fire Safety) Regulations allows the building industry to self-regulate the fire safety works in temporary buildings on construction sites.

1.1.5 **Fire Safety Requirements on the Provision of Rising Mains for Buildings Under Construction**

Currently, there are two types of rising mains required in our buildings ie. Dry riser for buildings between 10m to 60m in habitable height and wet riser for buildings above 60m in habitable height. Where a building is required to have the provision of rising mains, all rising mains (either dry or wet riser) shall be designed and installed while the building is under construction. The technical guidelines on the provision of rising mains for buildings under construction are given in Appendix (C).

1.1.6 **Fire Safety Requirements For General Warehouses**

The scope of these guidelines covers the fire safety requirements for general warehouses which include single-storey single-user warehouses, single-storey multi-user warehouses, underground warehouses, multi-storey warehouses with or without basements and warehouse within other non-industrial buildings. These Guidelines shall supersede the "Guidelines on Fire Safety Requirements for Mega Warehouse. A new set of requirements is drawn up at Appendix (D)

1.1.7 **Fire Safety Requirements For Fully Automated Mechanised Car Park (FAMCP)**

The filly automated mechanised car park buildings, which can be above and/or below ground, incorporate the revolutionary concept of parking and retrieving a vehicle by mechanical means without the driver entering the parking area. The buildings are therefore unmanned and are totally different from the conventional car parks, such as, car park in a multi-storey building, multi-storey car parks, etc. In view of the peculiar designs and operations of the fully automated mechanised car parks, a new set of requirements is drawn up at Appendix (E) for ease of reference and compliance.

1.1.8 **Notes On The Use Of Intumescent Paints For Protection To Structural Steel Members Of Buildings.**

A new set of requirements is drawn up at Appendix (F) for ease of reference and compliance.

1.1.9 **Structural Loading of Fire Engine on Accessway**

Technical data on fire appliance is drawn up at Appendix (G) for ease of reference and compliance.

1.1.10 **Additional Fire Safety Requirements For Super High-rise Residential Building**

With the continuous growth of Singapore's population, high demand for residential properties, and the limited land space of this island nation, urban planners and designers are pushing the limits in building height upwards. Such a trend has begun to emerge even in our public residential development programme. Residential buildings that go beyond 40 storeys shall be labeled as Super High-rise Buildings. In view of greater fire safety concerns with skyscraping residential buildings posing greater difficulties in mitigating efforts required of emergency responders as well as evacuation of the occupants, a new set of requirement is draw up in Appendix (H) for ease of compliance and reference.

1.1.11 **Water Supply Requirements For Wet Riser System**

Current pumping and storage capacities as stipulated in SS CP 29 can be reduced, basing on the fact that buildings having wet risers are likely to be sprinkler protected and the number of fire hose jets likely to be deployed at the fire site. The reduction in water supply requirements would result in less space requirements and thus impose smaller loads on the building structure. See Appendix (I) for ease of compliance and reference.

1.1.12 **Fire Safety Requirements For Petroleum Service Station**

The requirements for storing and dispensing of liquid petroleum in Petroleum Service Station as defined under the Petroleum Regulations (Fire Safety Act) are drawn up at Appendix (J). Its purpose is not intended to preclude the use of alternative designs, materials and methods that provide equivalent standards of safety. Petroleum Service Stations are installations where petrol and diesel are kept and dispensed as fuel for motor vehicles, on forecourt areas to which members of the public have access.

Measures and provisions must be made to prevent ignition sources coming into contact with liquid petroleum or its vapour. The control of ignition sources may become more difficult on sites where the public have access. This would cause the risk to life and property to be potentially high, especially where there are activities apart from dispensing petrol or where supervision is not constant.

1.1.13 **Reduced Water Storage Requirements For Sprinkler systems in Buildings (for Ordinary Hazard Groups)**

The primary purpose of these guidelines is to facilitate the installation of sprinkler systems in existing buildings that are not already protected by sprinkler system and that are in the Ordinary Hazard I, II & III classification. They are also applicable to new buildings having similar hazards. With the timely response by the SCDF, the designated water storage capacities in these guidelines should be adequate for th sprinkler system to control the fire spread till the arrival and the intervention by fire fighters. See Appendix (K)

1.1.14 **Fire Safety Requirements For high Containment Facility (BIO-Safety Level 3 / 4)**

The purpose of these guidelines is to stipulate the fire safety requirements for high containment facility or laboratory that handles biological agents or toxins, designed to meet the WHO and MOH's requirements of Bio-Safety Level 3 [BSL-3] or higher level facility. These guidelines will assist the Qualified Persons in the design of the construction, fire protection system, built-in features and procedures of the fire safety provisions for the high containment facility. See Appendix (L)

1.1.15 **Fire Safety Requirements For Liquefied Petroleum Gas (LPG) Cylinder Installations**

The scope of these guidelines covers both outdoor and indoor LPG cylinder installations. It is intended for commercial, industrial and residential premises with eating outlets, eating places, canteens, restaurants and other eateries which use LPG for cooking purposes. It is also intended for industrial applications involving hot works. See Appendix (M)

1.1.16 **Fire Safety Requirements For Chemical/Hazmat Warehouses**

Chemicals or hazardous materials (hazmat) have a wide range of properties and hazards which must be identified and understood if the conditions of "safe warehousing" are to be achieved. A complete understanding of the hazards also requires an assessment of the container and packaging systems and storage arrangements. In addition, the provision of "Guidelines on Fire Safety Requirements for General Warehouses" shall be complied with. See Appendix (B)

1.1.17 **Fire Safety Requirements For Laboratories Handling Hazardous Chemicals**

For laboratory storing and using chemicals/hazmat shall be in compliance with NFPA 45 (with the Maximum Allowable Quantity, MAQ, being modified; you may refer to SCDF's Web-site for more comprehensive details).

1.2 DEFINITIONS

1.2.1 The abbreviations listed in the following table are used in this Code:- Abbreviation

Abbreviation	Definition
† BS	British Standard
† CP	Code of Practice
Cl.	Clause
† NFPA	National Fire Protection Association
† AS	Australian Standard
† ISO	International Organisation For Standardisation
SS	Singapore Standard
PSB	PSB Corporation

† latest version shall be used.

1.2.1(A) An air-well is a space(s) enclosed substantially by building(s) and directly open to the sky.

Table 1.2.1A
Minimum Air-well size

Max. Habitable Height of Building	Min. Clear width of Air-well
18m	10m
24m	11m
36m	12m
48m	13m
60m and above	14m

1.2.2 "Approved" means approved by the Relevant Authority Approved

1.2.2(A) Any office which supports the activities of another Purpose Groups III, V, VI, VII and VIII and is located within the same building or compartment as the purpose group it serves is termed as ancillary office Ancillary office

1.2.2(B) (a) The ancillary office, sick room/first aid room, reception lobby/area, waiting area, staff lounge/staff recreation room, staff rest room/pantry, staff changing/locker room, meeting room, staff training room etc are considered as ancillary use and part of the same purpose group. Ancillary usage

(b) In addition, workshop, laboratories (no open flame), store room, material/product holding area and packing/distribution area housed within factory or warehouse buildings are also considered as ancillary use

1.2.3 Area of Building

(a) The area of any storey of a building or compartment shall be taken to be the total area of that storey bounded by the inner finished surfaces of the enclosing walls or, on any side where there is no enclosing walls, by the outermost edge of the floor on that side. Area of building

(b) The area of any room or space shall be taken to be the total area of its floor bounded by the inner finished surfaces of the walls forming the room or space.

(c) The area of any part of a roof shall be taken to be the actual visible area of such part measured on a plane parallel to the pitch of the roof.

1.2.4 (a) In the building under consideration, an area of refuge is an area adequately separated from the rest of the building by fire resisting construction (see Cl.3.3 for details), and evacuees from the rest of the building enter the area of refuge using an external corridor that links this area to the rest of the building. An area of refuge may serve as required exit in lieu of the provisions given under Cl.1.2.24. Area of refuge

(b) An area of refuge may also be an area in an adjoining building which is separated from the building under consideration by fire resisting construction and evacuees similarly enter this area of refuge using an external corridor.

(c) An area of refuge shall always be accessible.

1.2.5 Atrium

An atrium within a building is a large open space created by an opening, or a series of openings, in floor assemblies, thus connecting two or more storeys. Atrium is covered at the top and is used for purposes other than those associated with small shafts, such as for stairs, elevators and various services. The sides of the atrium may be open to all floors, to some of the floors, or closed to all or some floors by unrated or rated fire-resistance construction. Atrium

1.2.6 Basement Storey

(a) A storey of a building which is below the first storey and the floor of which is situated at such a level that more than half the height of such storey is below the level of the ground adjoining its perimeter walls for more than half the length of such perimeter walls, and Basement storey

(b) Where the building has no storey above ground, a storey the floor of which is situated at such a level that either the whole storey is below ground or more than half the height of such storey is below the level of the ground adjoining its perimeter walls for more than half the length of such perimeter walls.

1.2.7	The boundary of the land belonging to the building under consideration, and including the imaginary extension of the boundary up to the centre of an abutting public street, canal or river.	Boundary
1.2.8	Construction provided : (a) To seal a cavity (concealed space) against the penetration of smoke and flame, or (b) Within a cavity (concealed space) to stop the movement of smoke and flame within the cavity.	Cavity barrier
1.2.9	A part of a building which encloses and is exposed overhead in a room, circulation space or protected shaft. (A soffit or rooflight is included as part of its surface, but not the frame of a rooflight).	Ceiling
1.2.10	A space mainly used as means of access between a room or protected shaft and an exit from the building or compartment.	Circulation space
1.2.11	Code of practice is the standard of practice acceptable to the Relevant Authority. The Relevant Authority may adopt requirements stipulated in the stated year of publication of any referred Code of Practice or at its discretion adopt those specified in a later version.	Code of practice
1.2.11(A)	Coldroom definition deleted. Code user could refer to Chapter 3 for the application of coldroom requirements	
1.2.12	A part of a building separated from all other parts of the same building by compartment walls and/or compartment floors. A roof space above the top storey of a compartment is included in that compartment.	Compartment
1.2.13	A wall or a floor which is provided for the purpose of dividing a building into compartments for the purposes of Cl.3.2 and complies with Cl.3.7.	Compartment wall & compartment floor
1.2.14	A space enclosed by elements of a building (including a suspended ceiling or raised floor or space between curtain walling and the floor slab or spandrel wall) or contained within an element but not a room, cupboard, circulation space, protected shaft or space within a flue, chute, duct, pipe or conduit.	Concealed space (cavity)
1.2.15	A passage providing means of access from rooms or spaces to an exit.	Corridor
1.2.16	The cubical extent of a building or compartment shall be ascertained by measuring the volume of space contained within the building or compartment : (a) The inner finished surfaces of the enclosing walls or, on any side where there is no enclosing wall, a plane extending vertically above the outermost edge of the floor on that side,	Cubical extent of building or compartment

(b) The upper surface of its lowest floor, and

(c) In the case of a building or compartment which extends to a roof, the under surface of the roof or, in the case of any other compartment, the under surface of the ceiling of the highest storey within the compartment, including the space occupied by any other wall, or any unprotected shafts, ducts or structure within the space to be so measured, but excluding protected lift walls, exit staircases and other accommodation (such as lavatory and locker rooms) which are enclosed with walls having fire resistance of not less than one hour and openings protected by doors of one half hour fire resistance fitted with automatic self-closing device.

1.2.17 A dead-end refers to a situation within a common area, normally a corridor or lift lobby spaces, where exit is only possible from one end, with no possible escape from the other end. The maximum length of such dead-end spaces shall not exceed 15m or 20m (sprinklered) as stipulated in Table 2.2A, column (vi) see diagram 1.2.17. — Dead-end

1.2.18 The shortest distance from a point in a room or space, measured within the external enclosure walls of the room or space to the relevant exits, ignoring internal walls, partitions and fittings other than the enclosure walls of exit passageways or exit staircases. — Direct distance

1.2.19 Includes any shutter, cover or other form of protection to an opening in any wall or floor of a building or in the structure surrounding a protected shaft, regardless of whether the door is constructed of one or more leaves. — Door

1.2.20 A device which will allow a door held open by it to close automatically in the event of each or anyone of the following: — Electro- magnetic or electro-mechanical device susceptible to smoke

(a) Detection of smoke by automatic apparatus suitable in nature, quality and location, and

(b) Operation of a hand operated switch fitted in a suitable position, and

(c) Failure of electricity supply to the device, apparatus or switch, and

(d) Operation of the fire alarm system if any.

1.2.21 Element of Structure — Element of structure

(a) A member forming part of the structural frame of a building or any other beam or column but not a member forming part of a roof structure only,

(b) A loadbearing wall or loadbearing part of a wall,

(c) A floor, including a compartment floor, other than the lowest floor (in contact with the ground) of a building,

(d) An external wall,

(e) A separating wall,

(f) A compartment wall, and

(g) A structure enclosing a protected shaft (protecting structure).

1.2.22 Emergency power generating equipment that complies with the requirements stipulated in SS CP 31 Code of Practice for Installation, Operation, Maintenance, Performance and Constructional Requirements of Mains Failure Standby Generating Systems. — Emergency generator

1.2.23 Emergency Lighting and Exit Lighting — Emergency lighting and exit lighting

(a) Emergency lighting means lighting provided with a secondary source of power supply.

(b) Exit lighting means that part of emergency lighting which is provided to illuminate the exits.

1.2.24 A means of escape from the interior of the building to an exterior space which is provided by the use of the following either singly or in combination: exterior door openings, exit staircases, exit ramps or exit passageways. In the case of an exit leading to a separate building, exits also include linkways, walkways, bridges and balconies. Exit shall not include access stairs, aisles, corridor doors or corridors and access doors to rooms or spaces in occupancy areas. — Exit

1.2.25 A door provided at the doorway of an exit for the passage of people, forming part of the integrity of the exit, including the exterior door opening. — Exit door

1.2.25(A) That portion of a means of escape that leads to an exit. It includes the room and building spaces that people occupy, the doors along the escape routes, lobbies, aisles, passageways, corridors, access stairs and ramps that will be traversed in order to reach an exit. — Exit access

1.2.25(B) A door which provides access to a room or space (excluding toilet cubicle, bedroom, storeroom, utility room, pantry and the like) or installed across the escape path leading to an exit. Exit access door shall comply with all the requirements of an exit door and need not have fire resistance rating, unless it is specified. — Exit Access Door

1.2.26 A horizontal extension of a vertical exit viz exit staircase or a passage leading from a courtyard to an open exterior space, complying with the requirements of Cl.3.8 for protected shafts in respect of fire resistance ratings for enclosure walls, floors, ceilings and doors, that serves as a required exit. — Exit passageway

Exit passageway shall be required to comply with the provisions of Cl. 2.3.2.

1.2.27 A staircase which has its enclosure constructed of non-combustible material having a fire resistance of not less than the minimum period required by Cl. 3.3, for Elements of Structure for the part of the building in which it is situated. — Exit staircase

1.2.28 Material fixed to the outside face of an external wall for weather protection or decorative purpose. — External cladding

1.2.29 — External exit staircase

(a) An exit staircase which serves as a required exit shall be located outside the building and open to the outdoor air, and enclosed by parapet walls or railing only.

(b) An external staircase shall qualify as an external exit staircase if it is located within or abutting an air-well (which is open to sky and is required to provide lighting and ventilation to the occupancy areas) having the minimum size in relation to the habitable height of the building as given in the Table 1.2.1A.

1.2.30 An exit passageway open to the outdoor air, that serves as a required exit. — External exit passageway

External Exit Passageway shall comply with the provisions of Cl. 2.3.2(c).

1.2.31 An outer wall or vertical enclosure, including a part of the roof pitched at an angle of 70 degrees or more to the horizontal if that part of the roof adjoins a space within the building to which persons have access. — External wall (or side of a building)

1.2.32 The minimum period of time during which an element of structure or building element may be expected to function satisfactorily while subjected to a standard fire test. — Fire resistance

1.2.33 A seal provided to close an imperfection of fit or any joint between elements, components or construction in a building so as to prevent and restrict penetration of smoke and flame through that imperfection or joint. — Fire stop

1.2.34 A smoke-stop lobby which is adjacent to a fire lift and designated for use by the fire fighting team during an emergency. The lobby shall not be used for any other purposes and the size of the lobby shall not be smaller than 6 sq m and with no dimension smaller than 2m. — Fire-fighting lobby

1.2.35 For air-conditioning and mechanical ventilation systems: — Flexible joints and flexible connections

(a) Flexible joints means connections between ducts and equipment normally provided to isolate vibration and to allow thermal movement.

(b) Flexible connections means flexible sections of ducts provided to connect the extremity of ventilation ductwork to terminal units, extract units and grilles.

1.2.35(A) Fire Engine Access Road

An access road to allow a fire fighting appliance to move from one location to another within a development for fire fighting purpose/operation. It shall comply with clause 4.2.2.

1.2.35(B) Fire Engine Accessway

An access road to allow a fire fighting appliance to carry out fire fighting operation and shall be located along the perimeter of the building in such a way and, in such extent as required in clause 4.2.2.

1.2.36 A storey of the building with habitable room. A habitable room means any room not less than 6.5 m^2 in area and does not include any bathroom, water-closet, open verandah, terrace, garage and lift motor room. — Habitable floor

1.2.37 The habitable height is the height measured from the lowest level of fire engine accessway or access road (applicable to buildings under purpose group II) to the finished floor level of the highest habitable floor. — Habitable height

1.2.38 The height of building or (where relevant) of part of a building as described in the Code, means the height of such building or part, measured from the average level of the ground adjoining the outside of the external walls of the building to the level of half the vertical height of the roof of the building or part, or the top of the walls or of the parapet (if any), whichever is the higher. — Height of building

1.2.39 Any occupancy in which the contents or activities include one or more of the following: — High hazard occupancy

(a) materials that will flame up by themselves without the presence of any fire source below the ignition temperature of 200ºC,

(b) materials that would produce poisonous, noxious fumes, or flammable vapour,

(c) materials that would cause explosions,

(d) extra high hazard occupancies classified under SS CP 52, and

(e) highly combustible substances and flammable liquids.

1.2.40 Loadbearing wall means a wall which supports any load in addition to its own weight. — Loadbearing wall

1.2.41 In the context of this Code, masonry refers to brick or concrete construction or other equivalent construction approved by the Relevant Authority. — Masonry

1.2.42 Non-combustible material means any material which neither burns nor gives off flammable vapour in sufficient quantity to ignite when subjected to the test for combustibility prescribed in BS 476 Part 4, and includes materials of limited combustibility, such as: — Non-combustible material

(a) Any material of density 300 kg/m^3 or more, which when tested to BS 476: Part 11, does not flame and the rise in temperature on the furnace thermocouple is not more than 20^{o}C;

(b) Any material with a non-combustible core at least 8mm thick having combustible facings (on one or both sides) not more than 0.5mm thick; and

(c) Any material of density less than 300 kg/m^3, which when tested to BS 476: Part 11, does not flame for more than 10 seconds and the rise in temperature on the centre (specimen) thermocouple is not more than 35^{o}C and on the furnace thermocouple is not more than 25^{o}C.

1.2.43 Non-load bearing wall means a wall which supports no load other than its own weight. — Non-load bearing wall

1.2.44 Boundary presumed to exist for the purpose of this document between buildings on the same site. — Notional boundary

1.2.45 The "occupant load" of a building or part thereof means the total number of persons that may occupy such building or part thereof at any one time. — Occupant load

The "occupant load" shall be established either:

(a) by applying to the floor areas available for occupation based on the appropriate areas per person as laid down in Table 1.2 A, or

(b) by the actual number of occupants for whom each occupied space of the building is designed as shown on the plans,

whichever is greater unless otherwise permitted by the Relevant Authority.

1.2.46 The maximum aggregate area of unprotected areas in any side or external wall of a building or compartment as referred to in Cl. 3.5.3. — Permitted limit of unprotected area

1.2.46(A) Private lifts are passenger lifts which are meant for the exclusive use of occupants in the building, and are located to open its door directly into private enclosed spaces. Private lifts shall exclude vehicle lifts, home lifts and stair lifts. — Private lifts

1.2.47 An exit staircase, exit passageway, lift, chute, duct or other shaft which enables persons or things or air to pass from one compartment to another. — Protected shaft

1.2.48 Wall, floor or other part of the building which encloses a protected shaft, but not: — Protecting structure

(a) A wall which also forms part of an external wall, separating wall or compartment wall, or

(b) A floor which is also a compartment floor or a floor laid directly on the ground, or

(c) A roof.

1.2.49 Public building means a building or part thereof used or constructed or adapted to be used as a shop, office, hospital or place of public resort, not being a church, chapel, mosque, temple or other place where public worship is or religious ceremonies are performed. — Public building

1.2.50 For the purpose of this document, every building or compartment shall be regarded according to its use or intended use as falling within one of the purpose groups set out in Table 1.2B. For designation of purpose group, where a building is divided into compartments used or intended to be used for different purposes, the purpose group of each compartment shall be determined separately, provided that where the whole or part of a building or compartment (as the case may be) is used or intended to be used for more than one purpose, only the main purpose of use of that building or compartment shall be taken into account in determining into which purpose group it falls. — Purpose group

Remarks: Requirements for buildings not covered in Table 1.2B, including but not limited to Power Stations, Telecommunication Exchanges, Incinerator Buildings, Wood Working Buildings, Rubber Factory Buildings, Matches and Fire Works Factories, Glass Factories, Chemical Plants, Petroleum Refineries and Buildings used for the manufacture and storage of Highly Combustible Substances and Flammable Liquids, etc shall be consulted with the Relevant Authority.

1.2.51 Relevant Authority means the Commissioner of Singapore Civil Defence Force and includes officers authorised by him generally or specifically to exercise the powers, functions and duties conferred by the Fire Safety Act. — Relevant Authority

1.2.52 Boundary in relation to a side or external wall of a building or compartment, including a notional boundary. — Relevant boundary

1.2.53 Includes any domelight, lantern light, skylight or other element intended to admit daylight. — Rooflight

1.2.54	An enclosed space in a building that is not an enclosed circulation space or a protected shaft or an enclosed space not exceeding 750 mm in depth.	Room
1.2.55	A form of compartmentation that is a part which is separated from another part of the same building by a compartment wall which runs full height of the part and is in one continuous plane.	Separated part (of a building)
1.2.56	A wall separating adjoining buildings.	Separating wall
1.2.57	A door or set of doors placed in an internal corridor to restrict the spread of smoke by reducing draft.	Smoke check door
1.2.58	A lobby located at the entrance to an exit staircase to help to prevent or minimise the entry of smoke into the staircase. The size of the lobby shall not be smaller than 3 sq m.	Smoke-stop lobby
1.2.58(A)	Tenancy unit refers to an individual unit or subdivided unit within a building or a compartment, and which is managed by a different operator registered with the Registrar of Companies & Businesses.	Tenancy unit
1.2.59	The distance required to be traversed from the most remote point in any room or space to the edge of a door opening directly to - an exit staircase, or an exit passageway, or an open exterior space, unless otherwise permitted under this Code as in the case of hotel bedrooms (Cl.2.7.4), residential apartments or maisonettes (Cl.2.4.7) and exit to Area of Refuge (Cl. 2.2.6(f)).	Travel distance
1.2.60	Where more than one exit is required from a building or portion thereof, such exits shall be remotely located from each other and shall be arranged and constructed to minimise the possibility that more than one can be rendered unusable by any one fire or other emergency condition.	Two-way escape (Remoteness of exits)
	(a) If two exits or exit access doors are required, they shall be placed at a distance from one another equal to or not less than half the length of the maximum overall diagonal dimension of the building or area to be served, measured in a straight line between the furthest edges of the exit doors or exit access doors (see diagram 1.2.60(a)(i) to (v)), subject to :	Two-way escape
	(i) If the distance between the 2 exits or exit access doors is less than half the length of the maximum overall diagonal dimension of the building or area to be served, it shall be considered as a one-way escape arrangement; and	

(ii) The separation distance measured in a straight line between the furthest edges of the doors of the two exits (exit staircases, exit passageways or exit ramps) shall not be less than 7m.

(b) In buildings protected throughout by an approved automatic sprinkler system which complies with the requirements of chapter 6, the minimum separation distance between two exits or exit access doors measured in accordance with sub-clause 1.2.60(a) shall be not less than one third the length of the maximum overall diagonal dimension of the building or area to be served. The separation distance measured in a straight line between the furthest edges of the doors of the two exits (exit staircases, exit passageways or exit ramps) shall not be less than 7m. Reduction in exit separation

(c) Where two exit staircases, exit passageways or exit ramps are inter-connected by a corridor, exit separation shall be permitted to be measured along the line of travel within the exit access corridor. The exit access corridor connecting the exit staircases, exit passageways or exit ramps shall be protected by minimum one hour fire rated enclosures. Doors opening into this corridor shall have minimum half hour fire resistance rating (see diagram 1.2.60(c)). The separation distance measured along the line of travel within the exit access corridor between the furthest edges of the doors of the two exits (exit staircases, exit passageways or exit ramps) shall not be less than 7m. Exit separation measured along exit access corridor

(d) (i) A one-way travel or "common path" exists if a floor space is arranged or provided with partitioning works such that occupants within that space are able to travel in only one direction to reach any of the exits or to reach the splitting point where they have the choice of two or more routes of travel to remote exits. One-way travel

(ii) The travel distance from the most remote point to the splitting point shall not exceed the permissible one-way travel distance allowed in Table 2.2A. At the splitting point, the angle of divergence between any two alternative routes shall not be less than 90 degrees in order that the routes originating from the splitting point can be considered as two-way travel.

(iii) The aggregate travel distances of the one-way travel from the most remote point to the splitting point and the continuous two-way travel from the splitting point to the nearest exit shall not exceed the permissible two-way travel distance allowed in Table 2.2A.

1.2.61 In relation to a side or external wall of a building means: Unprotected area

(a) A window, door or other opening, and

(b) Any part of the external wall which has less than the relevant fire resistance required in Cl.3.5, and

(c) Any part of the external wall which has combustible material more than 1 mm thick attached or applied to its external face whether for cladding or any other purpose.

1.2.62 An exit staircase or exit ramp serving as required exit from one or more storeys above or below ground level. — Vertical exit

1.2.63 For the purpose of internal surfaces, includes: — Wall surface

(a) The surface of glazing, and

(b) Any part of ceiling which slopes at an angle of 70 degrees or more to the horizontal,

but excluding:

(i) door frames and unglazed parts of doors, and

(ii) window frames and frames in which glazing is fitted, and

(iii) architraves, cover moulds, picture rails, skirtings and similar narrow members, and

(iv) fitted furniture.