

SINGAPORE CIVIL DEFENCE FORCE

Date : 2 Mar 2020

- -

Our Ref: CD/FSSD/12/02/03/01

Registrar, Board of Architects

Registrar, Professional Engineers Board

President, Singapore Institute of Architects

President, Institution of Engineers, Singapore

President, Association of Consulting Engineers, Singapore

Dear Sir/Mdm,

AMENDMENTS TO FIRE CODE 2018 – 3rd BATCH OF AMENDMENTS

SCDF would like to issue the latest round of amendments to the Code of Practice for Fire Precautions in Buildings 2018 (Fire Code 2018). The amendments which were deliberated and accepted by the Fire Code Review Committee are attached as <u>Annex A, B & C</u> of this circular.

- 2. Amendments stipulated in <u>Annex A, B & C</u> of this letter, shall take effect from the dates specified therein. For those amendments that are to take effect at future dates as specified in <u>Annex A, B & C</u>, Qualified Persons are encouraged to comply with the requirements at any time before the effective dates. Any proposed plans of fire safety works for new buildings or existing buildings that are submitted to SCDF for approval on or after 2 Mar 2020 shall be subjected to the amendments made to the Fire Code.
- 3. Please convey the contents of this circular to members of your Board/ Institution/ Association. This circular is also available in CORENET's e-Info: http://www.corenet.gov.sg/einfo.
- 4. For any queries, you may contact Mr Randy Tan at DID: 68481461 or Mr Tan Yi Yang at DID: 68481734.











Yours faithfully

(transmitted via email)

LTC Tan Chung Yee Fire Safety & Shelter Department for Commissioner Singapore Civil Defence Force

Distribution list

CE, EMA

CEO, BCA

CEO, URA

CEO, HDB

CEO, JTC

CE, LTA

CE, Enterprise Singapore

President, REDAS

President, IFE

President, SISV

President, FSMAS

President, SCAL

Honorary Secretary, SPM

Manager (Fire Safety & Building Control Unit), DSTA

SCDF Fire Safety Standing Committee

Fire Code Review Committee











SCDF – A member of the Home Team

Annex A

S/N	Clause No	Amendment Date	Effective Date	Clause Status	Clause Before Amendment	Clause After Amendment
1	1.4.3	2 Mar 2020	2 Mar 2020	Clarification	Ambulatory healthcare centre" is a building, or part thereof, used for providing services on an outpatient basis for treatment for patients which would render them incapable of taking action for self-preservation or safety under emergency conditions without assistance from others, such as haemodialysis units or surgical treatment requiring general anaesthesia.	Ambulatory healthcare centre care facility "Ambulatory healthcare centre care facility" is a building, or part thereof, used for providing services on an out-patient basis for treatment for patients which would render them incapable of taking action for self-preservation or safety under emergency conditions without assistance from others, such as haemodialysis units or surgical treatment requiring general anaesthesia. Such facilities shall include the followings: a. Renal dialysis day centres; b. Aesthetic clinics; c. Non-mental rehabilitation day centres; and d. Endoscopy clinics.
2	1.4.30	2 Mar 2020	2 Mar 2020	Clarification	Custodian-care facility "Custodian-care facility" is a building or part thereof, without stay in accommodation, used by persons who,	Custodian care facility "Custodian care facility" is a building or part thereof, without stay in accommodation, used by persons who,

					because of age, or physical or mental disabilities, are unable to care for their self-preservation and safety. Such buildings shall include nurseries for children under 6 years of age, senior day care centres and institutions for the mentally disabled.	because of age, or physical or mental disabilities, are unable to care for their self-preservation and safety. Such facilities buildings shall include nurseries for children under 6 years of age, senior day care centres and institutions for the mentally disabled. include the followings: a. Nurseries for children under 6 years of age (e.g. kindergarten, childcare day centres, infant care day centres, etc.; b. Senior care day centres; c. Mentally disabled day care centres; d. Intellectually disabled day care centres; e. Mental rehabilitation day care centres; and f. Psychiatric day care centres.
3	1.4.68	2 Mar 2020	2 Mar 2020	Clarification	"Hospital" is a building used for medical and surgical care and shall include healthcare facilities with 24-hr or inpatient services, such as general hospitals, hospitals for	"Hospital" is a building used for medical and surgical care and shall include healthcare facilities with 24-hr or inpatient services, such as general hospitals, hospitals for psychiatric care, children's

					psychiatric care, children's hospitals, etc	hospitals, etc buildings include the following: a. General hospitals; b. Psychiatric hospitals (Institute of mental health); c. Children/Woman hospitals; and d. Community hospitals.
4	1.4.74	2 Mar 2020	2 Mar 2020	Clarification	Nursing home, convalescent home, home for the aged & hospice These refer to a building, or part thereof, used for the housing and nursing care of persons on a 24hr basis who, because of physical incapacity, may be unable to care for their own needs and safety without assistance of other persons.	Nursing home, convalescent home, home for the aged & hospice care facility These—"Nursing care facility" refers to a building, or part thereof, used for the housing and nursing care of persons on a 24-hr basis who, because of physical incapacity, may be unable to care for their own needs and safety without assistance of other persons. These facilities provide inpatient medical care and include the followings: a. Nursing homes; b. Convalescent homes; and c. Hospice.
5	1.4.100	2 Mar 2020	2 Mar 2020	Clarification	Supervisory care facility	Supervisory care facility

					"Supervisory care facility" is a building or part thereof, used for the housing, on a 24-hr basis, of mental health patients who may be capable of self-preservation but require supervision and are receiving therapy, training or other health-related care and for whom there may be security measures not under their control.	"Supervisory care facility" refers to a is a building or part thereof, used for the housing, on a 24-hr basis, of mental health patients, natal cares, aged and individuals under welfare cares, who may be capable of self-preservation but require supervision and are receiving therapy, training or other health-related care and for whom there may be security measures not under their control. Such facilities shall include the followings: a. Homes for intellectually disabled; b. Psychiatric rehabilitation homes c. Dementia homes; d. Pre/post natal care centres; and e. Welfare homes.
6	1.4.63	2 Mar 2020	2 Mar 2020	Clarification	Habitable floor" refers to all floors in a building, including the roof level. The roof level can be taken as non-habitable if it is not used for any purpose/activity other than housing M&E and/or telecommunication plants/equipment, e.g. lift motors, fire	"Habitable floor" refers to all floors in a building, including the roof level. The roof level can be taken as non-habitable if it is not used for any purpose/activity other than housing M&E and/or telecommunication-plants/equipment, e.g. lift motors, fire pumps, generators, fire

					pumps, generators, fire hose reel pumps, water supply pumps, water tanks, cooling towers, solar photovoltaic panels, supply/ exhaust fans with associated ductwork, air-con condensing units, telecommunication antenna, satellite dishes and public warning sirens, etc	hose reel pumps, water supply pumps, water tanks, cooling towers, solar photovoltaic panels, supply/ exhaust fans with associated ductwork, air-con condensing units, telecommunication antenna equipment, satellite dishes and public warning sirens, etc
7	1.4.112	2 Mar 2020	2 Mar 2020	Clarification	Nil	"Mechanical ventilation" refers to any system that uses mechanical means such as ventilation fan, to introduce outdoor air to a space when natural ventilation mode cannot be achieved during normal and fire emergency situations. This includes supply ventilation, exhaust ventilation, pressurisation, smoke purging, mechanical engineered smoke control systems, balanced systems that consist of both supply and exhaust ventilations, etc
8	1.4.113	2 Mar 2020	2 Mar 2020	Clarification	Nil	Pressurisation "Pressurisation" refers to a mechanical ventilation system that introduce positive differential pressure to a space/room to prevent smoke ingress during a fire emergency.
9	1.4.84	2 Mar 2020	2 Mar 2020	Deletion	Public Building	Public Building

					"Public building" refers to a building, or part thereof, that is used, constructed or adapted to be used as a shop, office, hospital or place of public resort. Places of public worship such as churches, chapels, mosques, temples and places where religious ceremonies are performed are not considered public buildings.	"Public building" refers to a building, or part thereof, that is used, constructed or adapted to be used as a shop, office, hospital or place of public resort. Places of public worship such as churches, chapels, mosques, temples and places where religious ceremonies are performed are not considered public buildings.
10	2.3.1c.	2 Mar 2020	2 Mar 2020	Clarification	Fire escape plan shall be provided for all buildings except PG I and displayed in common lobbies or lift lobbies such that they are easily viewable by the building occupants and the general public passing through these common areas. The fire escape plan shall have legible lettering and the fire escape routes made clear to the viewer. It shall clearly show the layout of the floor in the correct orientation and highlight the escape routes (in relation to viewer's location), escape corridors and exit staircases using appropriate colours, directional signs and words. Other information required on the plan are for firefighting and evacuation purposes	(1) A fire escape plan shall be provided for all buildings except PG I and displayed in common lobbies or lift lobbies such that they are easily viewable by the building occupants and the general public passing through these common areas. The fire escape plan shall have legible lettering and the fire escape routes made clear to the viewer. It shall clearly show the layout of the floor in the correct orientation and highlight the escape routes (in relation to viewer's location), escape corridors and exit staircases using appropriate colours, directional signs and words. The information required on the plan are

					and shall include the locations of the following: (1) Fire lifts; (2) Evacuation lifts; (3) PWD holding points; (4) Hose reels; (5) Fire extinguishers; (6) Manual alarm call points; and (7) Rising mains.	only for firefighting and evacuation purposes and shall include the locations of the following: (a) Fire lifts; (b) Evacuation lifts; (c) PWD holding points; (d) Hose reels; (e) Fire extinguishers; (f) Manual alarm call points; and (g) Rising mains. (2) For ensuring legibility of the fire escape plan for buildings with large floor areas, partial plan showing minimally 2 escape routes is acceptable. The plan shall show the egress paths to at least 2 remotely located exits/exit staircases, including the PWD holding points.
					General	General
11	2.4.1	2 Mar 2020	2 Mar 2020	Clarification	a. The following buildings/usages are exempted from these requirements:	a. The following buildings/usages are exempted from these requirements:

					(2)	PG I and II buildings; healthcare occupancies, except custodian-care facility and ambulatory healthcare centre;	(1) (2)	PG I and II buildings; healthcare occupancies, except eustodian-care facility and ambulatory healthcare centre hospitals and nursing care facilities,;
						industrial buildings/usages that are exempted from barrier-free accessibility compliance, as required by the authority having jurisdiction on accessibility in the built environment; and	(3)	industrial buildings/usages that are exempted from barrier-free accessibility compliance, as required by the authority having jurisdiction on accessibility in the built environment; and
						non-residential buildings/usages, such as car parks and clubhouses located within residential developments and which are intended for ancillary use, are not required to comply with these requirements.	(4)	non-residential buildings/usages, such as car parks and clubhouses located within residential developments and which are intended for ancillary use, are not required to comply with these requirements.
							(5)	aboveground storeys of PG III to VIII buildings, which are not served by any lift.
12	2.4.3	2 Mar 2020	2 Mar 2020	Clarification	Communi	cation provisions	Commun	ication provisions

					A suitable means of communication shall be provided between the PWD holding point and FCC or any 24-hourly manned station, for PWDs to call for assistance during a fire emergency. It can be in the form of a distress button or voice communication. The means of communication shall: a. be located between 800mm and 1.2m above ground level; b. be appropriately labelled; c. be provided with prominently displayed clear instruction sign on its operation; and d. when the device for communication is activated, it shall generate a clear visual indication to indicate that the distress signal has been relayed.	A suitable means of communication, as required under <i>Cl.6.6.5c.(4)</i> , shall be provided between the PWD holding point and FCC or any 24-hourly manned station, for PWDs to call for assistance during a fire emergency. It can be in the form of a distress button or dedicated voice communication. The dedicated voice communication handset shall always be accessible and not to be locked. The means of communication shall: a. be located between 800mm and 1.2m above ground-floor level; b. be appropriately labelled; c. be provided with prominently displayed clear instruction sign on its operation; and d. when the device for communication is activated, it shall generate a clear visual indication to indicate that the distress signal has been relayed.
13	3.10.2	2 Mar 2020	2 Mar 2020	Clarification	The exit staircase shall be separated from other parts of the building by a masonry structure or drywall complying with <i>Cl.3.8.7b</i> . which shall have fire resistance for not less than the period required by <i>Cl.3.3</i> for elements of structure.	The exit staircase shall be separated from other parts of the building by a masonry structure or drywall complying with <i>Cl.3.8.7b</i> . which shall have fire resistance for not less than the period required by <i>Cl.3.3</i> for elements of structure. The flight, landing and supporting structures of the exit staircase shall comply with

					Cl.3.10.1 and fire resistance rating is not required.
					Home Fire Alarm Device (HFAD) Home Fire Alarm Device (HFAD)
					For individual residential units under PG I or II, HFAD shall be installed in accordance with all of the following requirements: For individual residential units under PG I or II, HFAD shall be installed in accordance with all of the following requirements:
					a. HFAD shall possess the following features and comply with all the requirements stated below: a. HFAD shall possess the following features and comply with all the requirements stated below:
14	6.3.6	2 Mar 2020	2 Mar 2020	Clarification	(1) operate on smoke detection technology alone, or have a multi-sensor detector (a detector with multiple sensors built into the device) with smoke detection capability; (1) operate on smoke detection technology alone, or have a multi-sensor detector (a detector with multiple sensors built into the device) with smoke detection capability;
					(2) indicator lights to inform users on the status/condition of the device(s); (2) indicator lights to inform users on the status/condition of the device(s);
					(3) temporary silence/reset feature to address false alarms; (3) temporary silence/reset feature to address false alarms;
					(4) alarm sounder with sound level compliant with any standard listed in item (7);

					 (5) test button to allow the device(s) to be tested/checked periodically; (6) to be powered by long-life built-in battery (i.e. battery that lasts at least 10 years) with low battery alert capability, or to be wired to household electrical supply; (7) detector design to comply with any of the following standards (EN 14604, AS 3786, UL 217); (8) where two or more HFADs are installed, all devices shall be interconnected (either wired or wirelessly) such that when one of the HFADs is triggered, all connected HFADs shall sound an alarm if they are installed on 2 or more storeys (see <i>Diagram 6.3.6a.</i>(8)); and 	 (5) test button to allow the device(s) to be tested/checked periodically; (6) to be powered by long-life builtin battery (i.e. battery that lasts at least 10 years) with low battery alert capability, or to be wired to household electrical supply; (7) detector design to comply with any of the following standards (EN 14604, AS 3786, UL 217); (8) where two or more HFADs are installed, all devices shall be interconnected (either wired or wirelessly) such that when one of the HFADs is triggered, all connected HFADs shall sound an alarm simultaneously if they are installed on 2 or more storeys (see <i>Diagram 6.3.6a.(8)</i>); and
					b. Size	b. Supporting equipment
15	8.2.4	2 Mar 2020	2 Mar 2020	Clarification	A FCC shall be of adequate size to house all the terminals and supervisory/ control equipment,	A FCC is a room within a building dedicated to the controlling and monitoring of fire protection systems

	-46 (1 1111:) C	design of Control A
	etc. of the building's fire protection/detection systems and a	during a fire emergency. As such, equipment/services not meant for this
	free working space (unobstructed	purpose shall not be located inside the
	by door swing) of at least 6m ² .	FCC with exception of the following:
	by door swing, or at least oil .	The with exception of the following.
		(1) Lift supervisory panel.
		(2) Background music system connected to one-way emergency voice communication system rack.
		(3) Workstation/server rack for security card access & CCTV system for security monitoring.
		(4) Workstation/server rack for car park access control system.
		(5) Workstation/server rack for fire alarm's colour graphics system.
		(6) Workstation/server rack for BMS/BAS monitoring and controlling other ACMV system.
		(7) Walkie-talkie charging stations.
		(8) UPS system with totally sealed battery capacity not exceeding 750Amp-hr.

						 c. Size A FCC shall be of adequate size to house all the terminals and supervisory/ control equipment etc. of the building's fire protection/detection systems, as well as a free working space (unobstructed by door swing) of at least 6m² and minimum clear width of 2m. d. Location
16	Table 1.4A	2 Mar 2020	2 Mar 2020	Clarification	Existing <u>Table 1.4A</u>	See <u>Annex B</u> (affected portions of <u>Table</u> <u>1.4A</u>)
17	Table 1.4B	2 Mar 2020	2 Mar 2020	Clarification	Existing <u>Table 1.4B</u>	See <u>Annex C</u> (affected portions of <u>Table</u> 1.4B)

TABLE 1.4A - DESIGNATION OF PURPOSE GROUPS				
Purpose Group (PG)	Descriptive Title	Purpose for which building or part of the building is used or intended to be used		
I	Small	Residential dwelling house, such as:		
	residential	bungalowdetached house	semi-detached houseterrace house	
II	Other residential	Accommodation for residential purposes other than any premises comprised in PG I, such as:		
		• apartment	• flat	
		cluster housingcondominium	maisonettetown house	
III	Institutional	Establishments used for treatment, care or maintenance of persons suffering from disabilities, such as:		
		community hospital	• home for the spastic	
		• convalescent home	hospicehospital	
		home for intellectually disabled	nospitalpsychiatric hospital	
		home for the aged	• nursing home	
		Establishments used for care or maintenance of young/dependent persons, such as:		
		• children's home	• infant-care centre	
		correction centredaycare centre	rehabilitation centreschool for the spastic	
		• detention centre	• senior activity centre	
		dialysis centre	• orphanage	
Establ		Establishments used for educational/training purposes, such as:		
		• college	• polytechnic	
		commercial/private schoolenrichment centre	public schooltuition centre	
		• kindergarten/nursery	• university	
		military camp	• vocational institution	
		Establishments used for staff/worker lodging purposes, such as:		
		staff quarter wardens' accommodation	workers' dormitory	
cle		Premises/areas/spaces/floors used for the purposes of administration and clerical work, or as premises occupied with an office for the purposes of the activities therein carried on, such as:		
		• banking	• stock broker	
		insurancepublisher	• telephone/ telegraph operating	
		paonsilei	tolograph operating	

TABLE 1.4A - DESIGNATION OF PURPOSE GROUPS				
Purpose Group (PG)	Descriptive Title	Purpose for which building or part of the building is used or intended to be used		
V	Shop	Premises/areas/spaces/floors used for the following purposes (and/or any other similar trades or businesses):		
		 beauty salon book store boutique confectionary outlet departmental store drugstore gift shop hairdressing salon jewellery shop laundry outpatient clinic pawnshop 	 pet shop/clinic polyclinic provisional shop shopping arcade shopping centre show flat showrooms for sale of goods supermarket take-away F&B outlet/kiosk ticketing agency travel agency 	
VI	Factory	Premises/areas/spaces/floors with manufacturing, processing, service or testing activities, such as:		
		 aircraft hangar chemicals consumable products data/server centre electrical switching/transmitting fireworks food products glassware highly combustible substances highly flammable products incineration metalwork 	 oil refinery pharmaceutical power generation recycling rubber ship building telecommunication exchange vehicle repair/servicing wafer waste treatment/pumping water treatment/pumping woodwork 	
VII	Place of public resort	Premises/areas/spaces/floors used fo as:	or public accommodation purpose, such	
		backpacker hotelboarding househotel	holiday resortserviced apartmentstudent hostel	
		Premises/areas/spaces/floors used for	or educational purpose, such as:	
		auditoriumconvention centreexhibition centre	museumpublic art gallerypublic library	
		Premises/areas/spaces/floors used for social purpose such as:		
		community centre	• private club	

TABLE 1.4A - DESIGNATION OF PURPOSE GROUPS				
Purpose Group (PG)	Descriptive Title	Purpose for which building or part of the building is used or intended to be used		
VII	Place of public resort	Premises/areas/spaces/floors used for casino cinema concert hall discotheque	 entertainment purpose, such as: internet gaming centre karaoke lounge night club theatre 	
		Premises/areas/spaces/floors used for	religious purpose, such as: • temple	
		Premises/areas/spaces/floors used for • body massage • foot reflexology	body treatment purpose, such as:gymnasiumSpa	
		Premises/areas/spaces/floors used for recreational purpose, such as:		
		 amusement centre billiard/snooker centre bowling centre roof garden/terrace sky garden/terrace 	public sport complexpublic swimming complexstadium	
		Premises /areas/spaces/floors used for F&B purpose, such as:		
		 cafeteria canteen coffee shop eating house fast food outlet 	food courthawker centrePub/barrestaurant	
		Premises/areas/spaces/floors used for transportation purpose, such as:		
		airport terminalbus terminal	ferry terminaltrain station	
		Premises/areas/spaces/floors used for or parking of goods, materials and/or		
		coldroomgodownstore	vehicle parkwarehouse	

Note: Requirements for buildings not listed in this Table, including but not limited to buildings used for the manufacture and/or storage of highly combustible substances and/or flammable liquids, etc., shall be consulted with the SCDF.

Annex C

TABLE 1.4B: OCCUPANT LOAD FACTORS				
FUNCTIONAL SPACES	FACTOR (m²/person)	REMARKS		
Apartment, residential	15	calculated on habitable accessible floor areas of the unit		
Area of refuge				
ambulatory healthcare care facility	1.4			
custodian care facility	1.4			
hospital	2.8			
hospital	0.56	for area of refuge without patient accommodation		
nursing home-care facility	2.8			
nursing home care facility	0.56	for area of refuge without patient accommodation		
supervisory care facility	0.56			
Auditorium/theatre With individual fixed seating	1.5	for assembly occupancy, it can be based on fixed seating for purpose of computing occupant load occupant load occupant load seating		
With fixed bench seating	-	occupant load based on 0.45m of length of the benches per person		
Audio visual control room				
theatres/cinemas/concert halls	5			
others	5			
Choir gallery	1.5			
Dining area				
Hawker centre	1.5			
Fast food outlet	1			
others	1.5			
Exhibition area Exposition/Trade fair area	1.5			
Foyer				
bus terminal	1.5			
others	3			

TABLE 1.4B : OCCUPANT LOAD FACTORS				
FUNCTIONAL SPACES	FACTOR (m²/person)	REMARKS		
Gallery	<u>*</u>			
exhibits	2.5			
choir	1.5			
prayer	1.5			
seating	1.5	or by number of fixed seating occupant load can be based on number of fixed seating		
trading	1.5			
viewing	1.5			
surgical viewing	3			
Guestroom / accommodation unit	15	 accessible floor area of each room (including living area, toilet, etc.). Min. 2 persons per room or 15m²/person, whichever is higher 		
Indoor sport hall				
school with multi-purpose hall	3			
school without multi-purpose hall	1			
others	3			
Laboratory				
healthcare occupancy	20			
schools/colleges/tertiary institutions	5			
others	5			
Laundry				
with machine operation	15			
others	10			
Library room				
stack area	10			
reading area	5			
others	5			
Lighting control room				
theatres/cinemas/concert halls	5			
others	5			
Maisonettes, residential	15	calculated on accessible floor areas of the unit		

TABLE 1.4B: OCCUPANT LOAD FACTORS				
FUNCTIONAL SPACES	FACTOR (m²/person)	REMARKS		
Multi-purpose hall / room				
school/colleges	1			
others	1.5			
Multi-purpose sports hall				
public sport complex	3			
public swimming complex	3			
stadium	3			
others	3			
Passenger arrival / departure areas				
bus terminal	1.5			
others	3			
Prayer hall /gallery	1.5			
Projection room				
theatre/cinema/concert hall	5			
others	5			
Seating gallery	1.5	or by number of fixed seating		
Server room	30			
Staff quarter				
religious buildings	15			
nursing home care facility	5			
Student bedroom	15	 including other areas such as attached living area or toilet min. 2 persons per room or 15m²/person, whichever is higher 		
Surgical viewing gallery	3			
Trading gallery	1.5			
Training area				
public sports complex	3			
public swimming complex	3			
stadium	3			
others	3			
Viewing gallery	1.5			
Workshop				
Institutional buildings	5			
Industrial buildings	10			