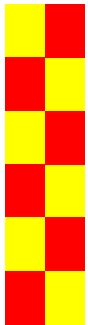




SCDF

The Life Saving Force

... for a safer Singapore



Fire Code Updates

Mr Randy Tan



Fire Code Updates:

- 4th Batch of Amendments to Fire Code 2018, Dated 30 Jul 2020
- 6th Batch of Amendments to Fire Code 2018, Dated 15 Sep 2020
- 7th Batch of Amendments to Fire Code 2018, Dated 1 Dec 2020



- Amendments shall take effect from the dates specified therein.
- For those amendments that are to take effect at future dates as specified in Annex A, 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 the effective dates shall be subjected to the amendments made to the Fire Code.

Need not apply waiver if QP will like to adopt revised amendments for their immediate projects. Although the revised changes take effect 6 months later

4th Batch of Amendments, dated 30 July 2020

(1) Clarification on OL factor

9.3.4	30 July 2020	30 July 2020	Reinstatement of past requirement	<p>temporary workers' quarters are located and shall comply with the relevant standards.</p> <p>(2) All LPG cylinder installations serving the temporary workers' quarters shall be in accordance with <i>CL10.1</i>.</p> <p>i. Occupant load</p> <p>The occupant load shall be based on the floor area of the temporary workers' quarters on the basis of 3m² per person, excluding non-simultaneous areas such as toilets, kitchens etc., or the actual number of occupants for which each occupied space of the floor is designed as shown on the plan, whichever is greater.</p> <p>j. Emergency lighting and exit signs</p> <p>Emergency lightings and exit signs serving the temporary workers' quarters shall be in accordance with <i>CL8.1</i>.</p>
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Query: Is there an error?

4th Batch of Amendments, dated 30 July 2020

(1) Clarification on OL factor

3	9.3.4i.	30 July 2020	1 Feb 2021	Revised	Occupant load The occupant load shall be based on the floor area of the temporary workers' quarters on the basis of 3m ² per person, excluding non-simultaneous areas such as toilets, kitchens etc., or the actual number of occupants for which each occupied space of the floor is designed as shown on the plan, whichever is greater.	Occupant load The occupant load shall be based on the floor area of the temporary workers' quarters on the basis of 3m² 6m ² per person, excluding non-simultaneous areas such as toilets, kitchens etc., or the actual number of occupants for which each occupied space of the floor is designed as shown on the plan, whichever is greater.
4	Table 1.4B	30 July 2020	1 Feb 2021	Revised	Occupant load factor for dormitory - 3m ² /person (bed room area only)	Occupant load factor for dormitory - 3m² 6m ² /person (bed room area only)

Query: Seem to contradict? Moving forward, what is the OL factor to apply?

4th Batch of Amendments, dated 30 July 2020

(2) Clarification on reinstatement of past requirements

					<p>development. Only the portion of the fire engine access road serving the temporary workers' quarters shall be made available.</p> <p>(2) Where the remotest temporary workers' quarter is located not more than 100m away from the site entrance at the public road, provision of working private fire hydrant is exempted.</p> <p>(3) A temporary "dry" fire hydrant is allowed. The "dry" fire hydrant shall be connected to a 150mm diameter pipe, which shall be connected the other end to a 4-way breeching inlet. This breeching inlet shall be within 18m from any fire engine accessway or fire engine access road having minimum 4m width and within 50m from any wet fire hydrant.</p> <p>e. Emergency power supply</p>	<p>accommodation areas with at least 1-hr fire-rated compartment wall and at least ½-hr fire-rated door.</p> <p>(3) Only non-combustible materials shall be used for the construction of temporary workers' quarters.</p> <p>(4) The floor area of each worker bedroom or the total floor area of a group of small worker bedrooms shall not exceed 120m². Compartment wall of having fire resistance rating of at least 1-hr shall be provided to separate the bedrooms so as to limit each compartment size to a maximum of 120m².</p> <p>(5) The worker bedrooms shall be separated from the internal corridor by a wall having fire resistance rating of at least 1-hr. Doors opening into the internal corridor shall have fire</p>
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4th Batch of Amendments, dated 30 July 2020

(2) Clarification on reinstatement of past requirements

Some general requirements:

- Dorms bedroom compartmentation stipulated in Cl.9.3
- General Exit Capacity requirements stipulated in Chapter 2
- Fire hydrant requirements stipulated in Chapter 4
- Electrical requirements stipulated in Chapter 5
- Fire extinguisher/Fire hose reel requirements stipulated in Chapter 6

The above requirements were previously omitted with the understanding that QP is aware of Chapter 9 or 10 shall be read in conjunction with other requirements relevant to the respective purpose groups stipulated in Chapter 1 to 8 of this Code.

4th Batch of Amendments, dated 30 July 2020

(2) Clarification on reinstatement of past requirements

Some general requirements:

- Dorms bedroom compartmentation stipulated in Cl.9.3
- General Exit Capacity requirements stipulated in Chapter 2
- Fire hydrant requirements stipulated in Chapter 4
- Electrical requirements stipulated in Chapter 5
- Fire extinguisher/Fire hose reel requirements stipulated in Chapter 6

Where there are conflicting requirements between this chapter and the preceding chapters, the requirements stipulated in Chapter 9 & 10 shall take precedence.

6th Batch of Amendments, dated 15 Sep 2020

(3) Clarification of protruding structures

S/N	Clause No	Amendment Date	Effective Date	Clause Status	Clause Before Amendment	Clause After Amendment
๒	2.2.11	15 Sep 2020	15 Sep 2020	Clarification	<p>Number of exit staircases or exits per storey</p> <p>There shall be at least two independent exit staircases or other exits from every storey of a building, unless otherwise permitted under other subsequent provisions of the Code. For non-habitable roof, at least one exit staircase shall be provided. Where the area of non-habitable roof is large and one-way travel distance to the exit cannot be met, an additional cat/ship ladder adequately separated in accordance with <i>CI.2.3.12</i> and leading to the circulation area of the floor below shall be provided. All access hatches, if provided, shall be readily accessible from the roof. Access hatch opening shall have a minimum clear width of 1m in diameter. The travel distances can be based on that for a sprinkler-protected building for roof areas which are open-to-sky.</p>	<p>Number of exit staircases or exits per storey</p> <p>There shall be at least two independent exit staircases or other exits from every storey of a building, unless otherwise permitted under other subsequent provisions of the Code. For non-habitable roof, at least one exit staircase shall be provided. Where the area of non-habitable roof is large and one-way travel distance to the exit cannot be met, an additional cat/ship ladder adequately separated in accordance with <i>CI.2.3.12</i> and leading to the circulation area of the floor below shall be provided. All access hatches, if provided, shall be readily accessible from the roof. Access hatch opening shall have a minimum clear width of 1m in diameter. The travel distances can be based on that for a sprinkler-protected building for roof areas which are open-to-sky.</p> <p>For protruding structures above the non-habitable roof, namely exit staircase shaft and lift motor room is exempted from this clause.</p>

What is protruding structures above the main habitable roof?

6th Batch of Amendments, dated 15 Sep 2020

(3) Clarification of protruding structures



Exit staircase shaft



Mr Randy Tan

6th Batch of Amendments, dated 15 Sep 2020

(4) Room to room escape

3	2.2.12	15 Sep 2020	15 Mar 2021	Revised	<p>Location of exits & access to exits</p> <p>All exits and access facilities shall be required to comply with all of the following:</p> <p>a. Exits and access facilities shall be clearly visible or their locations shall be clearly indicated and shall be kept readily accessible and unobstructed at all times.</p> <p>b. Every occupant or tenant within a building or storey of a building shall have direct access to the required exit or exits without the need to pass through the spaces or rooms occupied by other occupants or tenants.</p> <p>c. When more than one exit is required from any room or space or a storey of a building, each exit shall be placed as remote as possible from the other as permitted under <u>CL 2.3.12a, b, c, or d.</u></p>	<p>Location of exits & access to exits</p> <p>All exits and access facilities shall be required to comply with all of the following:</p> <p>a. Exits and access facilities shall be clearly visible or their locations shall be clearly indicated and shall be kept readily accessible and unobstructed at all times.</p> <p>b. Every occupant within a building or storey of a building shall have direct access to the required exit or exits without the need to pass through another room(s) or other tenanted space(s). Where direct access to the required exit or exits of the storey is not possible, occupants shall only be allowed to pass through a maximum of one other room or space belonging to the same tenant with the following conditions being complied with:</p> <ol style="list-style-type: none"> (1) the exit access door separating the rooms or spaces which the egress route passes through shall only be fitted with electromechanical device designed in accordance with CL 2.3.9k (2); (2) the doorway of the exit access door shall not be blocked/obstructed and be kept clear at all times. (3) Warning signs of wording "Exit Access Door - Keep Clear" shall be placed prominently on both sides of the exit access door, and
						<ol style="list-style-type: none"> (4) the egress paths through the exit access door shall be suitably demarcated.
					<p>c. When more than one exit is required from any room or space or a storey of a building, each exit shall be placed as remote as possible from the other as permitted under <u>CL 2.3.12a, b, c, or d.</u></p>	

At most escape to one room is permitted provided all conditions must be complied with



6th Batch of Amendments, dated 15 Sep 2020

(4) Room to room escape

Rationale:

Provide an alternative thus allowing escape via room to room. For that to take place, the exit access door which separate both premises must be designed to be fail-safe type. Occupants entering to another tenant rooms or spaces must ultimately be able to reach the required exit staircases or exits

Reconcile with Cl.2.3.9k.(2) – Access control belonging to tenanted spaces

6th Batch of Amendments, dated 15 Sep 2020

(4) Room to room escape

5	2.3.9k(2)	15 Sep 2020	15 Sep 2020	Clarification	<p>Access control belonging to tenanted spaces</p> <p>Where access control belonging to tenanted spaces are installed with smart card locking device, magnetic bar, electromechanical locking device and the like to prevent unauthorised access, such locking mechanism shall be arranged to unlock from a manual override device in accordance with <i>Cl.2.3.9k(1)(b)</i>. The manual override device serves as a means for occupant to get out of the occupied space during a fire emergency. Any form of staff access control facilitating daily operation shall not be considered as a substitute for manual override device. <i>Cl.2.3.9k(1)(a)</i> is not applicable to tenanted spaces.</p>	<p>Access control belonging to tenanted spaces</p> <p>Where access control belonging to tenanted spaces are installed with smart card locking device, magnetic bar, electromechanical locking device and the like to prevent unauthorised access, such locking mechanism shall be arranged to unlock from a manual override device in accordance with <i>Cl.2.3.9k(1)(b)</i>. The manual override device serves as a means for occupant to get out of the occupied space during a fire emergency. Any form of staff access control facilitating daily operation shall not be considered as a substitute for manual override device. <i>Cl.2.3.9k(1)(a)</i> is not applicable to tenanted spaces. Where escape is allowed to go through another occupied space in accordance with <u>Cl.2.2.12b</u>, the exit access door within the tenant unit for escape purpose shall release when the alarm on that floor activates.</p>
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This edits in red is meant to harmonise with room to room escape requirements. Exit access door with EM lock shall release when alarm on that floor activates

6th Batch of Amendments, dated 15 Sep 2020

(5) EM lock for re-entry floor

6	2.3.91(5)	15 Sep 2020	15 Sep 2020	Clarification	<p>Where locking is required for doors of smoke-free lobby, fire lift lobby or exit staircase on the re-entry floor, they shall be fitted with an electromechanical locking device complying with <i>CI.2.3.9k.(1)</i>.</p> <p>Note: Where the doors of exit staircases, smoke-free lobbies or fire lift lobbies are provided with one-way locking device or electromechanical lock, a signage, though not mandatory, should be provided to warn occupants that they would not be able to re-enter the floor should they exit from it. The signage should be positioned at the entrance into exit staircase, smoke-free lobby or fire lift lobby.</p>	<p>Where locking is required for doors of smoke-free lobby, fire lift lobby or exit staircase on the re-entry floor, they shall be fitted with an electromechanical locking device complying with <i>CI.2.3.9k.(1)</i>. For re-entry floor, manual override device shall be provided on both sides of the door.</p> <p>Note: Where the doors of exit staircases, smoke-free lobbies or fire lift lobbies are provided with one-way locking device or electromechanical lock, a signage, though not mandatory, should be provided to warn occupants that they would not be able to re-enter the floor should they exit from it. The signage should be positioned at the entrance into exit staircase, smoke-free lobby or fire lift lobby.</p>
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Rationale:

The designated re-entry floor must always be accessible during a fire emergency. Where it is installed with EM lock, there must be a means to unlock.

6th Batch of Amendments, dated 15 Sep 2020

(5) EM lock for re-entry floor

6	2.3.91(5)	15 Sep 2020	15 Sep 2020	Clarification	<p>Where locking is required for doors of smoke-free lobby, fire lift lobby or exit staircase on the re-entry floor, they shall be fitted with an electromechanical locking device complying with <i>CI.2.3.9k(J)</i>.</p> <p>Note: Where the doors of exit staircases, smoke-free lobbies or fire lift lobbies are provided with one-way locking device or electromechanical lock, a signage, though not mandatory, should be provided to warn occupants that they would not be able to re-enter the floor should they exit from it. The signage should be positioned at the entrance into exit staircase, smoke-free lobby or fire lift lobby.</p>	<p>Where locking is required for doors of smoke-free lobby, fire lift lobby or exit staircase on the re-entry floor, they shall be fitted with an electromechanical locking device complying with <i>CI.2.3.9k(J)</i>. For re-entry floor, manual override device shall be provided on both sides of the door.</p> <p>Note: Where the doors of exit staircases, smoke-free lobbies or fire lift lobbies are provided with one-way locking device or electromechanical lock, a signage, though not mandatory, should be provided to warn occupants that they would not be able to re-enter the floor should they exit from it. The signage should be positioned at the entrance into exit staircase, smoke-free lobby or fire lift lobby.</p>
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Question : Where there is no re-entry floor, is there a need to provide manual override device on both sides of the door?

6th Batch of Amendments, dated 15 Sep 2020

(6) Clarification for buildings not listed in Table 1.4A

7	3.2.7	15 Sep 2020	15 Sep 2020	Reinstatement of past requirements	<p>Buildings of high hazard occupancy</p> <p>a. The compartment of buildings of high hazard occupancy shall not exceed one half of the sizes given in <u>Table 3.2A</u> and each compartment shall comprise one storey only.</p> <p>b. No storey of a building, the habitable height of which is more than 24m, shall be used for the bulk storage of goods or substances of highly combustible nature unless the building is provided with a sprinkler system to comply with Chapter 6.</p> <p>c. The type of storage materials or substances shall not include the following:</p> <p>(1) materials with an auto-ignition temperature lower than 200°C; and</p> <p>(2) combustible/highly flammable materials which include those highlighted in sub-clauses a, b, c. and d. of <u>Cl.1.4.67</u>.</p>	<p>Buildings of high hazard occupancy</p> <p>a. The compartment of buildings of high hazard occupancy shall not exceed one half of the sizes given in <u>Table 3.2A</u> and each compartment shall comprise one storey only.</p> <p>b. No storey of a building, the habitable height of which is more than 24m, shall be used for the bulk storage of goods or substances of highly combustible nature unless the building is provided with a sprinkler system to comply with Chapter 6.</p> <p>c. The type of storage materials or substances shall not include the following:</p> <p>(1) materials with an auto-ignition temperature lower than 200°C; and</p> <p>(2) combustible/highly flammable materials which include those highlighted in sub-clauses a, b, c. and d. of <u>Cl.1.4.67</u>.</p> <p>d. For buildings not listed in <u>Table 1.4A</u>, including but not limited to buildings used for the manufacture and/or storage of highly combustible substances and/or flammable liquids, etc., the requirements shall be consulted with the SCDF.</p>
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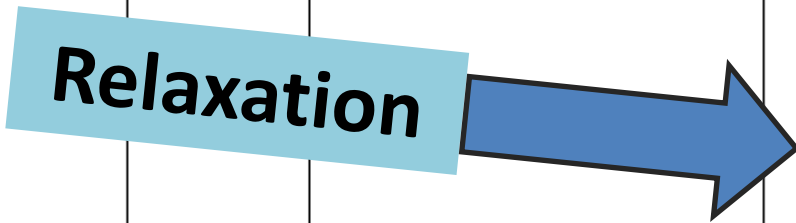
SCDF to be consulted!

The edits in red was previously stipulated in Chapter 1 of Fire Code 2013 . Where the Code is silent , SCDF shall be consulted on the necessary fire safety requirements

6th Batch of Amendments, dated 15 Sep 2020

(7) Relaxation on fire spread for PG II buildings

8	3.5.9	15 Sep 2020	15 Mar 2021	Revised (relocated to CI.9.2.1b.(3))	<p>Separation of residential floor façade</p> <p>The façade of residential floors above 24m habitable height shall be separated from each other by:</p> <ul style="list-style-type: none"> a. a 1-hr fire-rated spandrel of at least 1.5m in height, or b. a 1-hr fire-rated horizontal projection that extends at least 600mm from the building. 	<p>Separation of residential floor façade</p> <p>The façade of residential floors above 24m habitable height shall be separated from each other by:</p> <ul style="list-style-type: none"> a. a 1-hr fire-rated spandrel of at least 1.5m in height, or b. a 1-hr fire-rated horizontal projection that extends at least 600mm from the building. <p>b. Structural fire precaution</p> <p>(3) For residential buildings exceeding 24m in habitable height, the façade of every residential floors shall be separated from each other by:</p> <ul style="list-style-type: none"> (a) a minimum 1-hr fire-rated spandrel of at least 1.5m in height, or (b) a minimum 1-hr fire-rated horizontal projection that extends at least 600mm from the building. <p>Note: Balcony and air-con ledge can be used as part of this horizontal projection if they protrude at least 600mm from the building façade and have at least 1-hr fire-rated construction.</p>
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Balcony and air-con ledge can be used as part of this horizontal projection if they protrude at least 600mm from the building façade and have at least 1-hr fire-rated construction.

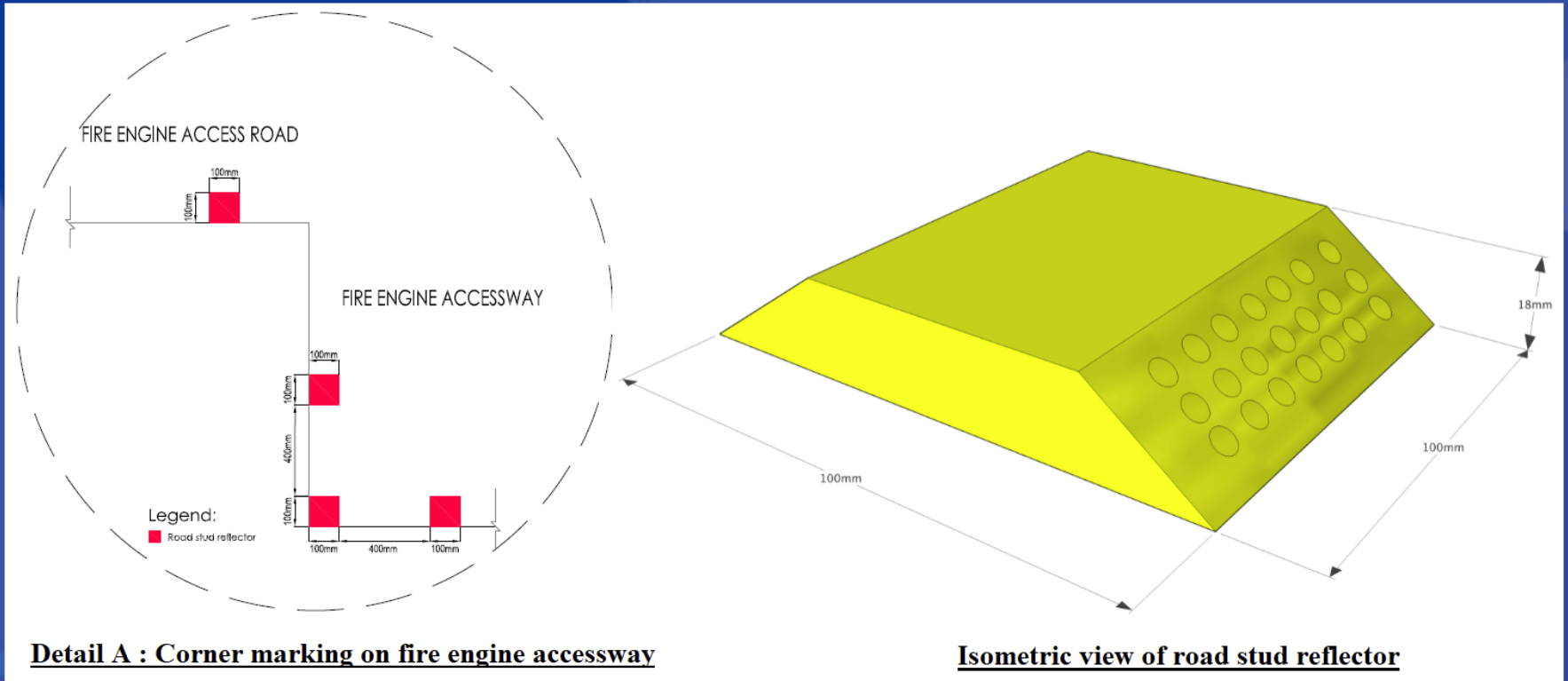
6th Batch of Amendments, dated 15 Sep 2020

(8) Marking of FEA & FEAR

15	4.2.2i.	15 Sep 2020	15 Mar 2021	Revised	<p>Marking of fire engine accessway and fire engine access road</p> <p>(1) All corners of fire engine accessway/fire engine access road shall be marked, except where public roads are designated as fire engine accessway/fire engine access road.</p> <p>(2) Metalled/non-metalled or paved/non-paved surface fire engine accessways/fire engine access roads shall be marked with reflective white or yellow strips of size not less than 100mm (W) x 400mm (L). The markings shall be visible at night and shall be provided on both sides of the fire engine accessways/fire engine access roads at an interval of not more than 5m.</p> <p>(3) A sign post with white background and red wording of not less than 50mm in height shall be provided at the start and end of a fire engine accessway/fire engine access road. The height measured from the ground to the lowest point of the sign shall be between 2m and 2.2m. The sign</p>	<p>Marking of fire engine accessway and fire engine access road</p> <p>(1) All corners of fire engine accessway/fire engine access road shall be marked, except where public roads are designated as fire engine accessway/fire engine access road.</p> <p>(2) Metalled/non-metalled or paved/non-paved surface fire engine accessways/fire engine access roads shall be marked with reflective white or yellow strips of size not less than 100mm (W) x 400mm (L), or white or yellow road stud reflectors of size not less than 100mm (W) x 100mm (L) x 18mm (H). The markings or reflectors shall be visible at all times at night and shall be provided on both sides of the fire engine accessways/fire engine access roads at an alternate interval of not more than 5m. Markings or reflectors shall also mark all corners and turning corners of the fire engine accessway. See <i>Diagram 4.2.2i.(2)</i>.</p>
					<p>post shall be visible at night and shall not be positioned more than 3m from the fire engine accessway/fire engine access road. Every part of the fire engine accessway/fire engine access road shall not be more than 15m from the nearest sign post. See <i>Diagram 4.2.2i.(3)</i>.</p>	<p>(3) A sign post with white background and red pictogram with upper case wording of not less than 50mm 70mm in height shall be provided at the start, junction, and end of a fire engine accessway/fire engine access road. The height measured from the ground to the lowest point of the sign shall be between 2m and 2.2m 2.3m and 2.4m. The sign post shall be reflective, visible and unobstructed at all times at night and shall not be positioned adjacent to more than 3m from the fire engine accessway/fire engine access road. Every part of the fire engine accessway/fire engine access road shall not be more than 15m from the nearest sign post. For locations where there are more than one of such signs, the signs can be placed on the same post. See <i>Diagram 4.2.2i.(3)</i>.</p>

6th Batch of Amendments, dated 15 Sep 2020

(8) Marking of FEA & FEAR



Query: Can the reflector be flushed with the road surface?

6th Batch of Amendments, dated 15 Sep 2020

(8) Marking of FEA & FEAR



Query 1: How to interpret the 3 types of signs?

Query 2 : Do we state it as XX TONNES or need to include the exact tonnage e.g. 24, 30 or 50

6th Batch of Amendments, dated 15 Sep 2020

(9) Clarification of other outpatient clinics

23	9.3.2g.	15 Sep 2020	15 Sep 2020	Clarification	<p>Other outpatient clinics</p> <p>For outpatient clinics that do not fall under the above categories, the fire safety requirements under <i>Cl.9.3.2b.</i> are not applicable. Instead, these clinics shall comply with the provision of fire-rated wall to separate the clinics from other usage as stipulated in <i>Cl.3.2.5b.</i> except for the frontage of the clinic.</p>	<p>Other outpatient clinics</p> <p>For Outpatient clinics that do not fall under the above categories, the fire safety requirements under <i>Cl.9.3.2b.</i> are not applicable. Instead, these clinics shall comply with the provision of fire-rated wall to separate the clinics from other usage as stipulated in <i>Cl.3.2.5b.</i> except for the frontage of the clinic. shall be categorised as PG V occupancy and shall comply with all relevant requirements for such premises/usage.</p>
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Query 1: Are outpatient clinics considered as healthcare occupancies?

Query 2: If Yes to query 1, which category of healthcare requirements it will need to adhere to?

7th Batch of Amendments, dated 1 Dec 2020

(10) Clarification of Fire Safety Report

Clause No	Amendment Date	Effective Date	Clause Status	Clause Before Amendment	Clause After Amendment
1.1.4	01/12/2020	01/12/2020	Clarification	<p>Fire Safety Report and Fire Safety Instruction Manual (<i>Appendix 1 & 2</i>)</p> <p>Fire Safety Report and/or Fire Safety Instruction Manual for building projects/fire safety provisions specified by SCDF shall be submitted when making building plan submission</p>	<p>Fire Safety Report and Fire Safety Instruction Manual (<i>Appendix 1 & 2</i>)</p> <p>a. Fire Safety Report and/or Fire Safety Instruction Manual for building projects/fire safety provisions specified by SCDF shall be submitted when making building plan submission.</p> <p>Fire Safety Report for building projects/fire safety provisions specified by SCDF shall be submitted when making building plan submission.</p>

Query 1: What is Fire Safety Report and this about?

Query 2: Why no grace period?

Query 3: When to submit?

7th Batch of Amendments, dated 1 Dec 2020

(11) Clarification on Fire Safety Instruction Manual

1.1.5	01/12/2020	01/12/2020	Clarification	Nil	<p>Fire Safety Instruction Manual (<u>Appendix 2</u>)</p> <p>a. Fire Safety Instruction Manual for building projects/fire safety provisions specified by SCDF shall be submitted when making application for Temporary Fire Permit or Fire Safety Certificate</p> <p>b. The building owner shall maintain and keep the Fire Safety Instruction Manual at all times and present to the QP upon request. Where any Addition & Alteration works are carried out to the buildings, the building owner shall ensure that changes in the management of fire safety provisions are updated in the Fire Safety Instruction Manual by the QP. The updated Fire Safety Instruction Manual shall be submitted to SCDF for record.</p>
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Query 1: What is Fire Safety Report and this about?

Query 2: Relaxation of submission. Previously it is tie to building plan submission stage.

Mr Randy Tan

7th Batch of Amendments, dated 1 Dec 2020

(12) Additional clarification on maintenance of fire protection systems

1.2.3	01/12/2020	01/12/2020	Clarification	Nil	<p>Maintenance of fire protection systems</p> <p>All fire protection systems when installed/provided in a building, shall be maintained in accordance with applicable codes or standards specified in <u>Table 1.2A</u>. The QP shall list down the maintenance details in the Fire Safety Instruction Manual and handover to the building owner for compliance at the completion of the building project.</p> <p>For the purpose of this Code, “fire protection system” has the same meaning as in the Fire Safety Act (Cap. 109A).</p>
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Query 1: Who will prepare?

Query 2: What are the essential maintenance details QP must include in Fire Safety Instruction Manual?

7th Batch of Amendments, dated 1 Dec 2020

(13) Clarification for private fire hydrant below 125m

4.4.2	01/12/2020	01/12/2020	Clarification /Relaxation	<p>Water supply for private fire hydrant</p> <p>a. Private fire hydrant at or below reduced level 125m</p> <p>Private fire hydrants installed at reduced level 125m and below can receive direct supply from public water mains. If the flow and pressure from the public water mains cannot meet the fire hydrant requirements as shown in <u>Table 4.4A</u>, a storage tank of sufficient capacity with the requisite pumping facilities shall be provided. For premises with private fire hydrants receiving direct supply from public water mains and not able to comply with the flow requirements stipulated in <u>Table 4.4A</u>, the following requirements shall be complied with:</p> <ol style="list-style-type: none"> (1) the compartment size shall <u>not exceed</u> 1000m²; (2) the nominal bore of the fire hydrant pipe and the bulk water meter shall not be less than 150mm in diameter; and (3) the running pressure/flow at the hydraulically most unfavourable fire hydrant of the private fire 	<p>Water supply for private fire hydrant</p> <p>a. Private fire hydrant at or below reduced level 125m</p> <p>(1) Private fire hydrants installed at reduced level 125m and below can receive direct supply from public water mains. If the flow and pressure from the public water mains cannot meet the fire hydrant requirements as shown in <u>Table 4.4A</u>, a storage tank of sufficient capacity with the requisite pumping facilities shall be provided. For premises with private fire hydrants receiving direct supply from public water mains and not able to comply with the flow requirements stipulated in <u>Table 4.4A</u>, the following requirements shall be complied with: provided the flow and pressure from the public water mains meet the fire hydrant requirements as shown in <u>Table 4.4A</u>, or the following requirements are complied with:</p> <p>(a) the compartment size shall not exceed 1000m²; the AFA of the largest</p>
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7th Batch of Amendments, dated 1 Dec 2020

(13) Clarification for private fire hydrant below 125m

				<p>hydrant system shall comply with the following:</p> <p>(a) running pressure ≥ 0.9 x (running pressure of the nearest public fire hydrant – pressure drop across the bulk water metre); and</p> <p>(b) flow rate ≥ 0.9 x water flow of the nearest public fire hydrant or \geq total flow demand (as required in <i>Table 4.4A</i>) of the private fire hydrant system, provided the running pressure at the most remote private fire hydrant is greater than 2 bars.</p> <p><u>Note:</u></p> <p>In calculating the frictional loss for the private fire hydrant system, the design flow rates shown in <i>Table 4.4A</i> shall be used. The pressure drop across bulk water metre shall not be more than 1 bar.</p>	<p>compartment shall not exceed 1000m² for PG III, IV, V & VII and not exceed 500m² for PG VI & VIII;</p> <p>(b) the nominal bore of the fire hydrant pipe and the bulk water meter shall not be less than 150mm in diameter; and</p> <p>(c) the running pressure/flow at the hydraulically most unfavourable fire hydrant of the private fire hydrant system shall comply with the following:</p> <p>(i) running pressure ≥ 0.9 x (running pressure of the nearest public fire hydrant – pressure drop across the bulk water metre); and</p> <p>(ii) flow rate ≥ 0.9 x water flow of the nearest public fire hydrant or \geq total flow demand (as required in <i>Table 4.4A</i>) of the private</p>
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7th Batch of Amendments, dated 1 Dec 2020

(13) Clarification for private fire hydrant below 125m

b.

fire hydrant system, provided the running pressure at the most remote private fire hydrant is greater than 2 bars.

Note:

In calculating the frictional loss for the private fire hydrant system, the design flow rates shown in Table 4.4A shall be used. The pressure drop across bulk water metre shall not be more than 1 bar.

(2) If the requirements stipulated in Cl.4.4.2a(1) cannot be met, a storage tank of sufficient capacity meeting the flow rate and duration as specified in Table 4.4A with the requisite pumping facilities shall be provided.

b.

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(10)

TABLE 4.4A : WATER SUPPLY & STORAGE REQUIREMENTS FOR PRIVATE FIRE HYDRANT				
Purpose Group	Accessible Floor Area* (m ²)	Minimum Flow Rate (L/s)	Minimum Running Pressure (bar)	Minimum Water Supply and Storage Duration (mins)
PG I & II	-	27	2	45
PG III, IV, V & VII	≤ 1000	38	2	45
	> 1000 and ≤ 5000	57		
	> 5000 and ≤ 10000	76		
	> 10000	95		
PG VI & VIII	≤ 500	38	2	90
	> 500 and ≤ 5000	57		
	> 5000 and ≤ 10000	76		
	> 10000 and ≤ 15000	95		
	> 15000 and ≤ 20000	114		
	> 20000	133		
Covered car park not within PG VI & VIII buildings +	NL	38	2	45
<p>Note:</p> <p>NL = No limit.</p> <p>* = Based on the Accessible Floor Area (AFA) of the largest compartment in the building</p> <p>+ = This requirement is only applicable to car parking facilities within PG II, III, IV, V & VII buildings, either as a standalone multi-storey car park or within a building (above ground or below ground). The hydrant requirements for the remaining parts of the buildings shall comply with Cl.4.4.2a., Cl.4.4.2b. and Cl.4.4.2c..</p>				

Mr Randy Tan

7th Batch of Amendments, dated 1 Dec 2020

(13) Clarification for private fire hydrant below 125m

- The purpose of this revision is to remove contradicting requirements, and eliminate confusion and to align definition of compartment size between clause and Table 4.4A.
- The proposed changes does not apply to factory/warehouse vehicle parking. This is because the mentioned premises vehicles are usually lorry or heavy truck vehicles, larger fire can be expected.

Rationale: This relaxation is not applicable to PG 6 and PG 8 buildings as they are usually frequent with heavy vehicles. Also, factory/warehouse units would have higher hydrant flow and tank requirement.

7th Batch of Amendments, dated 1 Dec 2020

(14) Clarification on air-con ventilation for SFL/FLL

7.1.10	01/12/2020	01/12/2020	Clarification	<p>Ventilation system for smoke-free lobby and fire lift lobby</p> <p>a. The ventilation system shall be of supply mode only of not less than 10 air changes per hour.</p> <p>b. Supply air shall be drawn directly from the external space with intake point not less than 5m from any exhaust discharge or openings for natural ventilation.</p> <p>c. Any part of the supply duct running outside the smoke-free or fire lift lobby which it serves shall either be enclosed or constructed to give a 1-hr fire resistance rating. The SCDF may, at its discretion, require a higher fire resistance rating if the duct passes through an area of high fire risk.</p> <p>d. The mechanical ventilation system shall be automatically activated by the building fire alarm system. In addition, a remote manual start-stop switch shall be made available to firefighters at the FCC, or, where there is no FCC, at the main fire alarm panel.</p>	<p>Ventilation system for smoke-free lobby and fire lift lobby</p> <p>a. The ventilation system shall be of supply mode only of not less than 10 air changes per hour.</p> <p>b. Supply air shall be drawn directly from the external space with intake point not less than 5m from any exhaust discharge or openings for natural ventilation.</p> <p>c. Any part of the supply duct running outside the smoke-free or fire lift lobby which it serves shall either be enclosed or constructed to give a 1-hr fire resistance rating. The SCDF may, at its discretion, require a higher fire resistance rating if the duct passes through an area of high fire risk.</p> <p>d. The mechanical ventilation system shall be automatically activated by the building fire alarm system. In addition, a remote manual start-stop switch shall be made available to firefighters at the FCC, or, where there is no FCC, at the main fire alarm panel.</p>
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7th Batch of Amendments, dated 1 Dec 2020

(14) Clarification on air-con ventilation for SFL/FLL

<p>e. Visual indication of the operational status of the mechanical ventilation system shall be provided.</p>	<p>e. Visual indication of the operational status of the mechanical ventilation system shall be provided.</p> <p>f. Where air conditioning is required for daily operations, this can be provided via supply and return air duct from the FCU/AHU outside of the smoke-free/fire lift lobby. Fire dampers shall be provided in the supply and return air ducts at penetrations through the compartment walls and/or floors. The ducts shall be fire-rated if it forms part of the other services passing through the smoke-free/fire lift lobbies and/or the duct insulations are not of non-combustible type.</p>
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7th Batch of Amendments, dated 1 Dec 2020

(14) Clarification on air-con ventilation for SFL/FLL

- To supplement the new requirements to disallow unprotected services (including FCU) inside smoke-free lobby and fire lift lobby.
- During emergency mode, the SFL & FLL will be MV and fulfilled by a separate fan and ducting system. During AC mode, the MV will not be running and the MV will be automatically activated during fire mode.
- Air ducts penetrations through the compartment walls and floors shall be provided with fire dampers.

7th Batch of Amendments, dated 1 Dec 2020

(15) Clarification on redundancy for MV & Pressurisation Systems

7.5.1	01/12/2020	01/12/2020	Clarification	<p>The fan and its associated controller for the following systems shall be provided with redundancy such that the system performance is not affected when one of the fans and/or controllers is out of operation due to routine maintenance or breakdown:</p> <ul style="list-style-type: none"> a. mechanical ventilation systems for: <ul style="list-style-type: none"> (1) smoke-free/fire lift lobbies; (2) exit staircases; and (3) essential rooms (e.g. sprinkler/wet riser/hydrant/hose reel pump room, standby generator room, FCC, etc.). b. engineered smoke control systems; c. car park smoke purging systems; and d. pressurisation systems for smoke-free/fire lift lobbies, exit staircase and hotel internal corridor. 	<p>a. Powered system</p> <p>A standby fan (N+1), The fan and its associated controller for the following systems shall be provided with redundancy such that the system performance is not affected when one of the fans and/or controllers is out of operation due to routine maintenance or breakdown: shall be provided for each of the following systems, such that in the event one of the duty fans fails or taken out of service, the standby fan shall be automatically activated to meet the required ventilation rate.</p> <ul style="list-style-type: none"> (1) mechanical ventilation systems for: <ul style="list-style-type: none"> (a) smoke-free/fire lift lobbies; (b) exit staircases; and (c) essential rooms (e.g. sprinkler/wet riser/hydrant/hose reel pump room, standby
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7th Batch of Amendments, dated 1 Dec 2020

(15) Clarification on redundancy for MV & Pressurisation Systems

generator room, FCC,
etc.).

- (2) engineered smoke control systems;
- (3) car park smoke purging systems*; and
- (4) pressurisation systems for smoke-free/fire lift lobbies, exit staircase and hotel internal **guestroom** corridor.

Note * redundancy (N+1) achieved by having at least 2 zones for ductless system in operation, in which N+1 fans for each zone is not required.

b. Non-powered system

Where automatic smoke ventilators are used as part of the smoke control system, there shall be at least 10% redundancy on the quantities of ventilators and shall be located such that they are not affected by the wind. The quantity of the redundant ventilators shall be round up to whole numbers, based on the largest size of the ventilators used.

7th Batch of Amendments, dated 1 Dec 2020

(15) Clarification on redundancy for MV & Pressurisation Systems

Rationale on 10% redundancy: Redundancy is meant to cater for vents failing to open, due to failure of power supply or operating mechanism thus reducing the free area. If the vents are permanently fixed open, and not subject to risk of any failures, there should not be a need to provide redundancy.

- The natural ventilators are held close by electric power or pneumatic air (run by electrical power). The loss of power will cause of power will cause the ventilator to open.
- If N+1 fans, there will be 3 fans in one smoke zone, there will be 2 duty fans (50% each) + one standby.

7th Batch of Amendments, dated 1 Dec 2020

(16) Clarification

8.1.3c.(4)	01/12/2020	01/12/2020	Clarification	c. Notwithstanding the requirements in <i>Cl.8.1.3a.</i> above, emergency lighting shall be provided in the following locations: (1) Lift cars as stipulated in this Code; (2) Fire Command Centres; (3) Generator rooms; (4) Basement car parks; (5)	c. Notwithstanding the requirements in <i>Cl.8.1.3a.</i> above, emergency lighting shall be provided in the following locations: (1) Lift cars as stipulated in this Code; (2) Fire Command Centres; (3) Generator rooms; (4) Basement and aboveground multi-storey car parks; (5)
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Both basement and aboveground MSCP must be provided with emergency lighting.

7th Batch of Amendments, dated 1 Dec 2020

(17) Clarification

Chapter 9	01/12/2020	01/12/2020	Clarification	CHAPTER 9 ADDITIONAL REQUIREMENTS FOR EACH PURPOSE GROUP This chapter specifies the requirements peculiar to buildings of respective purpose groups. These requirements shall be read in conjunction with those stipulated in Chapter 1 to 8 of this Code.	CHAPTER 9 ADDITIONAL REQUIREMENTS FOR EACH PURPOSE GROUP This chapter specifies the additional requirements peculiar to buildings of respective purpose groups. These additional requirements shall be read in conjunction with other requirements relevant to the respective purpose groups stipulated in Chapter 1 to 8 of this Code. Where there are conflicting requirements between this chapter and the preceding chapters, the requirements stipulated in this chapter shall take precedence.
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Additional requirements shall be read in conjunction with other requirements relevant to the respective purpose groups stipulated in Chapter 1 to 8 of this Code. Where there are conflicting requirements between this chapter and the preceding chapters, the requirements stipulated in this chapter shall take precedence.

7th Batch of Amendments, dated 1 Dec 2020

(18) Clarification

Chapter 10	01/12/2020	01/12/2020	Clarification	CHAPTER 10 REQUIREMENTS FOR SPECIAL INSTALLATIONS	CHAPTER 10 REQUIREMENTS FOR SPECIAL INSTALLATIONS The requirements in this chapter shall be read in conjunction with other requirements relevant to the installations stipulated in Chapter 1 to 9 of this Code. Where there are conflicting requirements between this chapter and the preceding chapters, the requirements stipulated in this chapter shall take precedence.
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Additional requirements shall be read in conjunction with other requirements relevant to the respective purpose groups stipulated in Chapter 1 to 8 of this Code. Where there are conflicting requirements between this chapter and the preceding chapters, the requirements stipulated in this chapter shall take precedence. Applicable to requirements for special installations.

7th Batch of Amendments, dated 1 Dec 2020

(19) Clarification on fire safety instruction manual

Appendix 2	01/12/2020	01/12/2020	Clarification	<p>FIRE SAFETY INSTRUCTION MANUAL</p> <p>1.0 GENERAL</p> <p>a. The Fire Safety Instruction Manual is a document prepared by the project QP to remind the building owner, MCST, tenant, operator and/or contractor on the management of fire safety provisions for the building. This includes maintenance regimes, evacuation procedures, and other relevant documents to be kept and maintained by the relevant parties. Any subsequent additions and alteration works shall be updated in the Fire Safety Instruction Manual by the QP carrying out the A/A works.</p> <p>b. The Fire Safety Instruction Manual, including any subsequent updates, shall be submitted by the project QP to the SCDF for record when making building plan submission. A copy of which shall be handed officially to the relevant parties for information</p>	<p>FIRE SAFETY INSTRUCTION MANUAL</p> <p>1.0 GENERAL</p> <p>a. The Fire Safety Instruction Manual is a document prepared by the project QP to remind the building owner, MCST, tenant, operator and/or contractor on the management of fire safety provisions for the building. This includes maintenance regimes, evacuation procedures, and other relevant documents to be kept and maintained by the relevant parties. Any subsequent additions and alteration works shall be updated in the Fire Safety Instruction Manual by the QP carrying out the A/A works.</p> <p>b. The Fire Safety Instruction Manual, including any subsequent updates, shall be submitted by the project QP to the SCDF for record when making building plan submission. A copy of which shall be handed officially to the relevant parties for information</p>
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7th Batch of Amendments, dated 1 Dec 2020

(19) Clarification on fire safety instruction manual

				<p>and safe keeping before occupation of the building.</p> <p>c. The QP can expand or modify the Fire Safety Instruction Manual to suit his presentation</p> <p>2.0 SCOPE</p> <p>The QP shall prepare a Fire Safety Instruction Manual if the project involves any of the following:</p> <ul style="list-style-type: none">a. Fire safety provisions for PWDsb. Chemical/HazMat warehousec. Fully Automated Mechanised Car Park (FAMCP)d. Buildings using intumescent painte. Liquefied Petroleum Gas (LPG) cylinder installationf. Mega underground developments	<p>and safe keeping before occupation of the building. The building owner shall maintain and keep the Fire Safety Instruction Manual at all times and present to the QP upon request. Where any Addition & Alteration works are carried out to the buildings, the building owner shall ensure that changes in the management of fire safety provisions are updated in the Fire Safety Instruction Manual by the QP. The updated Fire Safety Instruction Manual shall be submitted to SCDF for record.</p> <p>c. The QP can expand or modify the Fire Safety Instruction Manual to suit his presentation</p> <p>d. Maintenance of fire protection systems</p> <p>All fire protection systems when installed/provided in a building, shall be maintained in accordance with applicable codes or standards specified in <u>Table 1.2A</u>. The QP shall list down the maintenance details in the Fire</p>
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7th Batch of Amendments, dated 1 Dec 2020

(19) Clarification on fire safety instruction manual

				<ul style="list-style-type: none">g. Use of lifts in buildings for evacuationh. Engineered timber building constructioni. Hoarding & safety netsj. Temporary workers' quarters in uncompleted permanent buildings on construction sitesk. Ductless jet fans system in car parks.l. Kitchen exhaust ductsm. Fire-rated dry construction	<p>Safety Instruction Manual and handover to the building owner for compliance at the completion of the building project.</p> <p>For the purpose of this Code, "fire protection system" has the same meaning as in the Fire Safety Act (Cap. 109A).</p> <p>2.0 SCOPE</p> <p>The project QP shall prepare a Fire Safety Instruction Manual if the project involves any of the following:</p> <ul style="list-style-type: none">a.b.c.d.e.m. <p>n. Firefighting, mechanical ventilation/pressurisation, smoke control, emergency voice communication and any other fire safety related systems/equipment</p>
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7th Batch of Amendments, dated 1 Dec 2020

(19) Clarification on fire safety instruction manual

- Who knows best regarding the type of fire protection provisions/systems?
- Maintenance of fire protection system is vital in ensuring the system is in working order during a fire emergency.
- Where A/A are carried out, this manual shall also be updated.
- Submitted to SCDF for record.



Thank You