

**SINGAPORE CIVIL DEFENCE FORCE  
FIRE SAFETY & SHELTER BUREAU**



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*Please quote our ref. no. in all future correspondences*

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23<sup>rd</sup> Jan 2002

Registrar, BOA  
Registrar, PEB  
President, SIA  
President, IES  
President, ACES

Dear Sirs,

**PROPOSED AMENDMENTS TO THE STANDARD FOR FIRE SAFETY IN RAPID  
TRANSIT SYSTEMS**

The Standard for Fire Safety in Rapid Transit Systems (RTS) was launched in August 2000 and implemented for RTS lines like Marina Line, Circle Line, etc.

2. Since then, Building Control Unit of the Land Transport Authority [BCU (LTA)] received some proposed amendments to the Standard through feedback from Project (LTA) and consultants. A Review Committee, comprising officers from FSSB, Project (LTA) and BCU (LTA) was formed to deliberate the proposed amendments to the Standard.
3. Meetings were held to discuss and agree on the proposed amendments, in particular, to Section 2.5 and Section 2.6 of the Standard on Fire Fighting Systems in Stations and Station Smoke Control and Mechanical Ventilation Systems respectively.
4. Please find attached in Annex A the list of agreed amendments. The changes are highlighted as underscore to denote wording inserted (inserted wording) and strike through to denote wording deleted (~~deleted wording~~).
5. The changes would take immediate effect.

Yours faithfully

Teo Lim Teck  
for Commissioner  
Singapore Civil Defence Force

cc

CEO, BCA

All members of FSSB Standing Committee

All members of Fire Code Review Committee

President, REDAS

President, IFE

President, SISV

CEO, HDB

Group President, PSA Corp

CEO, JTC

CE, LTA (Attn : Mr Mohinder Singh)

CE, PSB Corp (Attn : Mr Lau Keong Ong / Ms Tan Chiew Wan)

# Standard for Fire Safety in Rapid Transit Systems

## Amendment No. 1/02

### **Amended Clause 2.1.2.68**

~~"Station Control Room (SCR)~~Passenger Service Centre (PSC) means the room located in a station where communication with the Operation Control Centre, trains, passengers and members of the public can be conducted."

### **Amended Clause 2.5.3.7**

*"Breeching inlets shall be appropriately numbered and labelled as shown below. The wording shall be white and the background shall be red in accordance with SS 364."*

### **Inserted Clause 2.5.5.4(d)**

*"Wordings on call points shall comply with SS 364."*

### **Inserted Clause 2.5.6.2(f)**

*"Cut-off sprinklers are not required above exit doors of staircases and exit passageways if the exit doors are located in the station public areas."*

### **Inserted Clause 2.5.7.2**

*"Notwithstanding the requirements in SS CP 2, in the event of power failure or power interruption in the normal (primary) power supply whereby a dual feeder power supply is provided, the supply to the lift(s) shall be automatically switched over to the other feeder and the lift(s) continue its normal operation without homing."*

### **Amended Table 2.5A (Part of)**

~~"Emergency lighting~~ Battery room (for essential equipment) --- 'EX'  
~~Battery room (not for emergency light) --- 'S'~~  
~~Station Control room~~Passenger Service Centre (PSC) --- 'EX'  
~~Uninterruptible power supply room (without batteries) --- 'EX'~~  
~~Uninterruptible power supply room (with batteries) --- 'S'"~~

*(Note: Essential equipment includes communication equipment, signalling equipment, uninterruptible power supply/emergency power supply charger/rectifier and HV/LV switchgears which are critical for the operation of trains, the emergency fire safety equipment and the emergency evacuation of commuters.)*

### **Amended Clause 2.6.2.2 & 2.6.2.2(a)**

"The mechanical ventilation systems for stations and staircase pressurisation where required under Clause 2.2.5.6 shall comply with SS CP 13 Code of Practice for Mechanical Ventilation and Air-conditioning in Buildings, unless as herein modified.

~~(a) Firemen's staircase:~~

~~(a) (i) The mechanical ventilation of the firemen's staircase shall be maintained at higher positive pressure with respect to the mechanical ventilation system of the adjacent fire-fighting lobby.~~

~~— (ii) The mechanical ventilation system for the firemen's staircase shall maintain a pressure differential of not less than 50 Pa with the fire-fighting lobby when all doors all are closed."~~

**Inserted Clause 2.6.2.2(e)**

“Battery rooms shall be naturally or mechanically ventilated to maintain the average hydrogen concentration by volume in the room below 2%. Such rooms are not considered as involving the use of flammable and explosive substances.”

**Amended Clause 2.6.2.3(a)**

“Openings for ducts of emergency ventilation systems in walls of a smoke extract ventilation shaft. or return air shaft that also serves as a smoke extract shaft.”

**Inserted Clause 2.6.3.2**

“The engineered smoke control system need not be a dedicated system.”

**Amended Clause 2.6.4.1(a)**

*“Underground Station Public And Ancillary Areas*

*(a) Smoke purging system shall be provided in the following areas:-*

*(i) Station public areas.*

*(ii) Corridors of ancillary areas in basement.*

*Except the following:-*

*(iii) Corridors serving only ticketing machines rooms, station control room, station master room and staff offices.*

*(iv) Corridor between the platform ancillary area and the station trainway area.”*

**Inserted Clause 2.6.4.1(c)(v)**

“Supply and exhaust fans shall be electrically interlocked such that the failure of the exhaust fan shall automatically shut-down the corresponding supply fan.”

**Amended Clause 2.6.4.1(d)**

“The smoke purging system need not be an independent a dedicated system. Where dampers are used to direct the smoke for the smoke purging system, motorised smoke dampers shall be used.”

**Inserted Clause 2.6.4.1(g)**

“The smoke purging system in the station public area may be automatically activated by detectors located in the station public area.”

**Amended Clause 2.9.3.3**

*“Emergency lighting shall be provided to underground or enclosed trainways exceeding 15m in length. The illumination level at walking surfaces shall not be less than 52.7 lux.”*

**Amended Clause 3.2.1.2**

*“Equipment of OCC essential for the operation of trains and the tunnel ventilation system shall be ~~connected to~~ provided with secondary power supply ~~from two separate sub-stations.~~”*

**Amended Clause 4.3.2**

*“Notwithstanding the above, ~~systems with~~ dual feeder power supply ~~from two separate sub-stations~~ are deemed to have been provided with primary and secondary power supplies. For the purposes of this Standard, the primary feeder (primary supply) shall be*

the normal power supply while the secondary feeder (secondary supply) shall be the emergency power supply.

(See Diagram 4.3.2)”

**Amended Appendix G (Part of)**

*“Radiation heat flux as follows:*

Maximum of ~~54.4~~6300 W/m<sup>2</sup> [2000 Btu/(hr-ft<sup>2</sup>)] for a few seconds, averaging ~~13.6~~1580

W/m<sup>2</sup> [500 Btu/(hr-ft<sup>2</sup>)] or less for the first 6 seconds of the exposure, averaging ~~8.2~~950

W/m<sup>2</sup> [300 Btu/(hr-ft<sup>2</sup>)] for the remainder of the exposure.”

