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(20) in EMSD/LESD 7-2/4

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March 31, 2006

All Registered Lift/Escalator Contractors / Engineers

Dear Sirs,

Circular No. 3/2006
Code of Practice on the Design and Construction
of Lifts and Escalators (2000 Edition)
Amendment No. 9

Pursuant to section 27G of the Lifts and Escalators (Safety) Ordinance, Cap. 327, the Code of Practice on the Design and Construction of Lifts and Escalators (2000 Edition) (the Design Code) is to be updated by incorporating requirements for enhanced operational and design features of lifts/escalators and other minor amendments.

The changes have been provided for in Amendment No. 9 of the Design Code, a copy of which is attached herewith for your reference. Please note that the changes covered in Amendment No. 9 forming part of the Design Code shall become effective as from April 1, 2006 with a grace period of 12 months commencing from the effective date.

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Please note that lift/escalator works complying with the requirements of the Design Code prior to the coming into effect of Amendment No. 9 with which the corresponding Form 5/7 is submitted during the grace period will be regarded as having satisfied the requirements of the Design Code.

Yours faithfully,



(YAN Man-kit, Andrew)

for Director of Electrical and Mechanical Services

Encl.

c.c. AD/BS, D of Housing (Attn.: TS/2),
D of Buildings (Attn.: CBS/Legislation), D of Fire Services (Attn.: Fire Safety Command),
The Hong Kong General Union of Lift and Escalator Employees
G28/28 SF1 Pt. IV

**Code of Practice
on the Design and Construction of
Lifts and Escalators
(2000 Edition)**

**Amendment No. 9 of 2000 Edition
Requirements for Enhanced Operational and Design Features of Lifts/Escalators and Other
Minor Changes**

(Effective as from April 1, 2006 with a grace period of 12 months)

<u>Item</u>	<u>Clause</u>	<u>Description</u>
1	Section E Part 1 Clause 10.1.2(e)	Insert “, change of value or functions” following ‘short circuit or open circuit’ in Clause 10.1.2(e).
2	Section E Part 1 Clause 10.2.2.2	<p>Replace Clause 10.2.2.2 by the following:</p> <p>“10.2.2.2 Type of Safety Contacts and Protective Enclosure</p> <p>The safety contacts shall be provided for a rated insulation voltage of 250 V if the enclosure provides a degree of protection of at least IP 4X in accordance with EN 60529, or 500 V if the degree of protection of the enclosure is less than IP 4X.</p> <p>The safety contacts shall belong to the following categories as defined in EN 60947-5-1:</p> <p>(a) AC-15, for safety contacts in ac circuits.</p> <p>(b) DC-13, for safety contacts in dc circuits.</p> <p>If the protective enclosure is equal or less than IP 4X, the clearances shall be at least 3 mm, the creepage distances shall be at least 4 mm and the distances for breaking contacts at least 4 mm after separation. If the protection is better than IP 4X, the creepage distance can be reduced to 3 mm.</p> <p>Under extreme conditions of external influence, the live parts of safety contacts shall be accommodated in an appropriate protective enclosure. However, protective enclosure needs not be provided in the case of external influences considered as normal in the Code of Practice for the Electricity (Wiring) Regulations issued under the Electricity Ordinance or similar regulations issued by internationally recognized professional institutions.</p> <p>In the case of multiple breaks, the distance after separation</p>

between the contacts shall be at least 2 mm.

Abrasion of conductive material shall not lead to short circuiting of contacts. ”

3 Section E Replace Clause 10.2.3 by the following:

Part 1

Clause
10.2.3

“10.2.3 Safety Circuits

Safety circuits shall comply with the requirements of Clause 10.1.1 relating to the appearance of a fault. In addition, they shall be designed in line with the logic shown in Appendix III such that :

- (a) If one fault combined with a second fault can lead to a dangerous situation, the lift shall be stopped at the latest at the next operating sequence in which the first faulty element should participate. All further operation of the lift shall be impossible as long as this fault persists.

The possibility of the second fault occurring after the first, and before the lift has been stopped by the sequence mentioned, is not considered.

- (b) If two faults which by themselves do not lead to a dangerous situation, when combined with a third fault can lead to a dangerous situation, the lift shall be stopped at the latest at the next operating sequence in which one of the faulty elements should participate.

The possibility of the third fault leading to a dangerous situation before the lift has been stopped by the sequence mentioned above, is not considered.

- (c) If a combination of more than three faults is possible, then the safety circuit shall be designed with multiple channels and a monitoring circuit checking the equal status of the channels.

If a different status is detected the lift shall be stopped.

In case of two channels the function of the monitoring circuit shall be checked prior to a restart of the lift at the latest, and in case of failure, re-starting shall not be possible.

- (d) On restoration of the power supply after it has been disconnected, maintenance of the lift in the stopped position is not necessary, provided that during the next sequence stopping is reimposed in the cases covered by Clauses 10.2.3(a), (b) and (c).

- (e) In redundancy-type circuits measures shall be taken to

limit as far as possible the risk of defects occurring simultaneously in more than one circuit arising from a single cause.

Safety circuits containing electronic components are regarded as safety components and shall be verified according to the requirements in Annex F. 6 of EN81-1. "

- 4 Section E Part 1 Clause 10.2.5 Replace the last three paragraphs of Clause 10.2.5 covering 'Transmitter elements of safety circuits...' up to 'they shall be considered as part of the transmitter elements.' by "For transmitter elements of safety circuits, the requirements of Annex F.6.3.1.1 of EN81-1 shall apply."
- 5 Section E Part 1 Clause 10.3.1.1 Insert "or similar devices" following 'This control shall be by the aid of buttons' in the 1st paragraph of Clause 10.3.1.1.
- 6 Section E Part 1 Clause 10.3.1.2(a)(1) Insert "electrical" between '..shunt of the door and lock' and 'safety devices.' in Clause 10.3.1.2(a)(1).
- 7 Section E Part 1 Clause 10.3.2 Replace 'electric' by "electrical" in the 1st sentence in Clause 10.3.2.
- 8 Section E Part 1 Appendix III Insert the enclosed "Appendix III – Diagram for assessing safety circuits" following Section E Part 1 Appendix II.

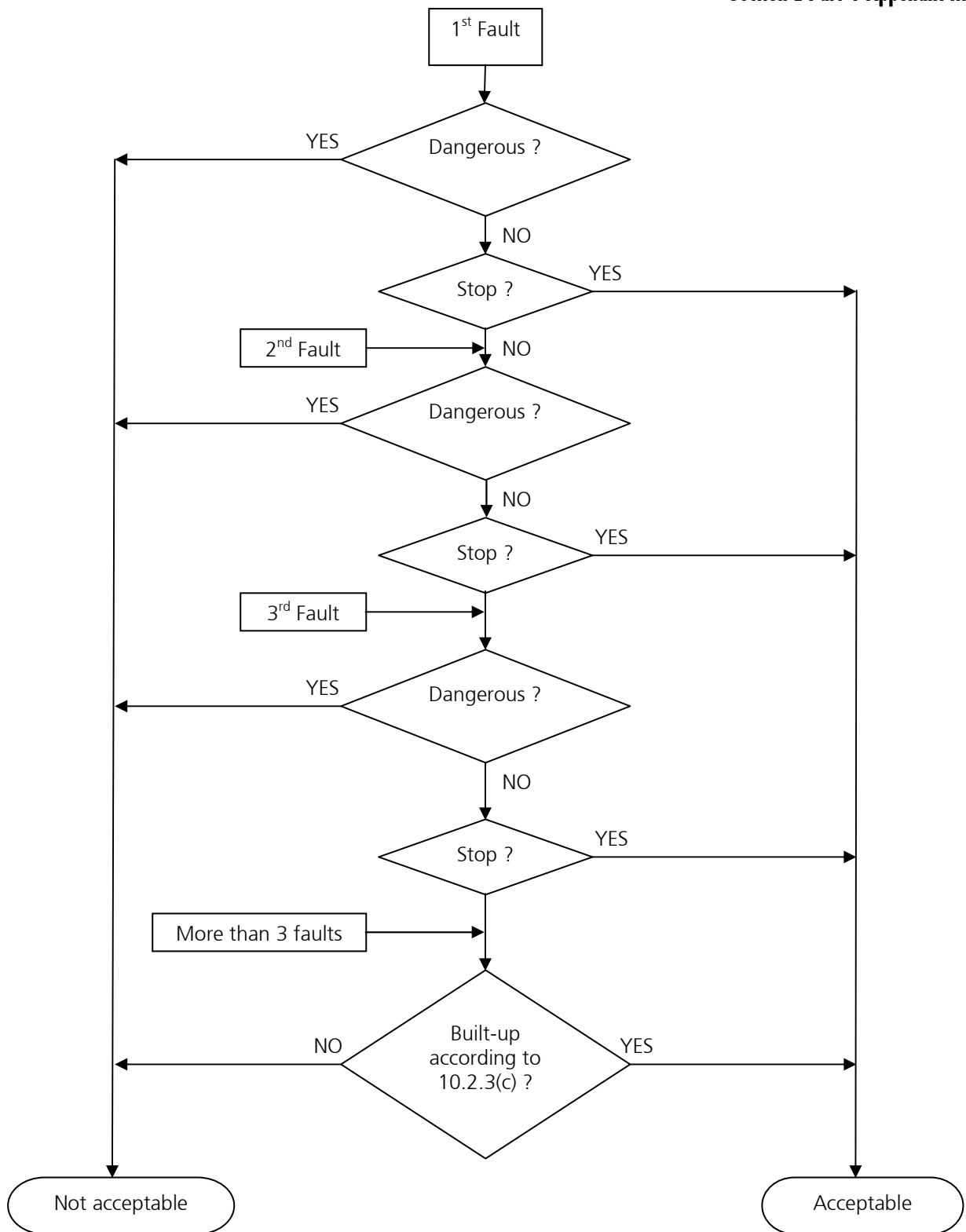
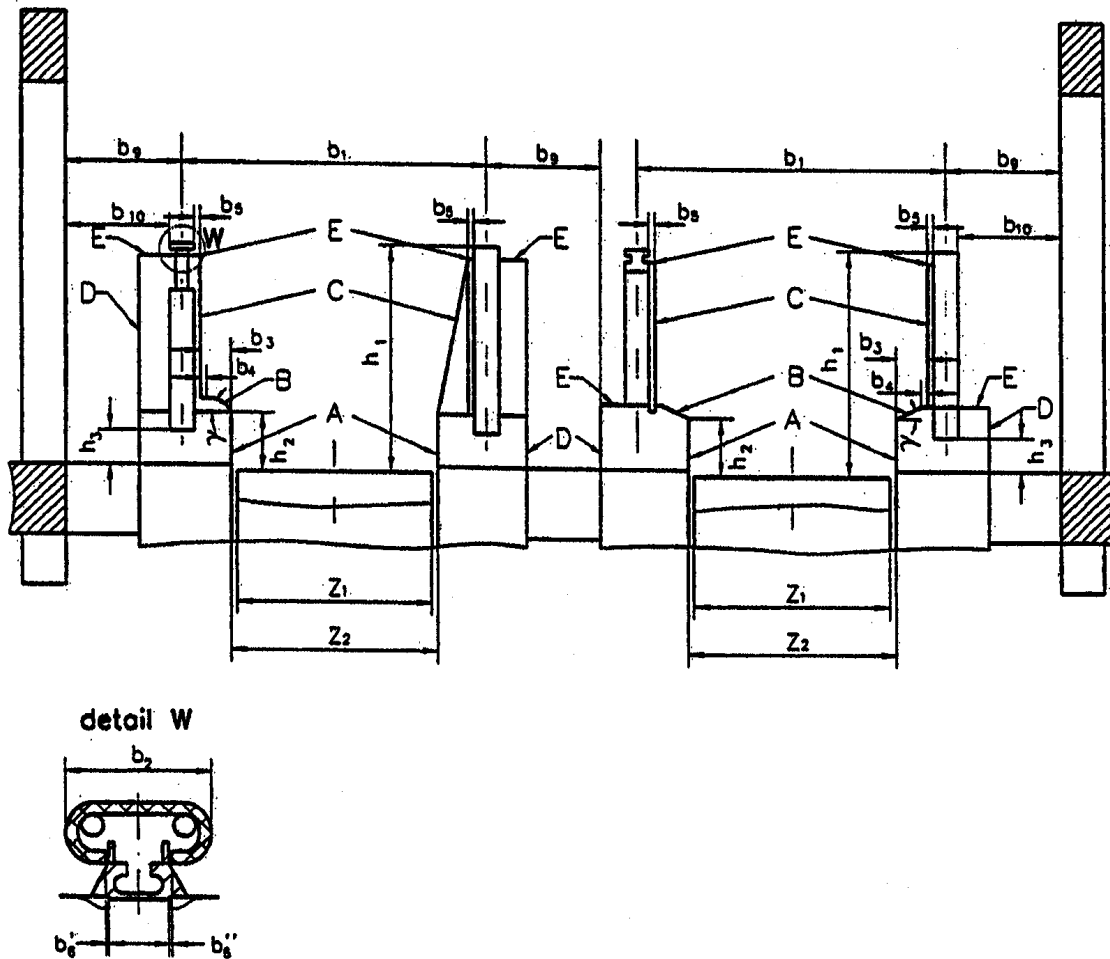


Diagram for assessing safety circuits

- 9 Section E Part 4 Clause 1.1.5.1 Replace 'figure' in the 1st paragraph under Clause 1.1.5.1 and those under sub-Clauses (a), (b), (c), (d), (e) and (f) by "Fig.".
- 10 Section E Part 4 Clause 1.1.5.5(a) Replace Clause 1.1.5.5(a) by the following:
" (a) The skirting shall be vertical. The vertical distance h_2 (see Fig. 2) between top edge of skirting or bottom edge of projecting cover joints and the tread surface of the steps, pallets or belt shall be at least 50 mm. "
- 11 Section E Part 4 Clause 1.1.5.5(c) Replace Clause 1.1.5.5(c) by the following:
" (c) The possibility of trapping between skirting and steps shall be reduced. Deflector device in the form of brush bristles shall be suitably placed (see Fig. 7) on the skirting to guard passengers' feet, loose clothing and foreign objects from coming into contact with the possible trapping point. The following conditions shall also be fulfilled:
- (i) The deflector device shall consist of a rigid profile and a flexible part of plastic brush bristles.
 - (ii) The projection of the deflector device as measured from the vertical face of the skirt panels shall be uniform and between 50 mm and 75 mm.
 - (iii) The deflector device shall be able to withstand, without detachment or permanent deformation, a force of 900 N applied vertically to the line of attachment and on an area of 600 mm² of its rigid part.
 - (iv) The rigid parts shall have a projection of between 18 mm and 25 mm and withstand the defined strength requirements.
 - (v) The clearance between the lowest part of the underside of the rigid part of the deflector device and the line of travel of the step nose throughout the inclined, the curved portion and the true horizontal portions shall be uniform and within 15 to 25 mm.
 - (vi) The rigid part of the deflector shall be free of sharp edges. Fastening heads and joint connections shall not extend into the path of travel.
 - (vii) The terminal end piece shall be tapered to give a flush interface with the skirting. The terminal end piece of any deflector device shall end not less than

Fig.2 Illustrative End View of an Escalator's Dimension Requirements



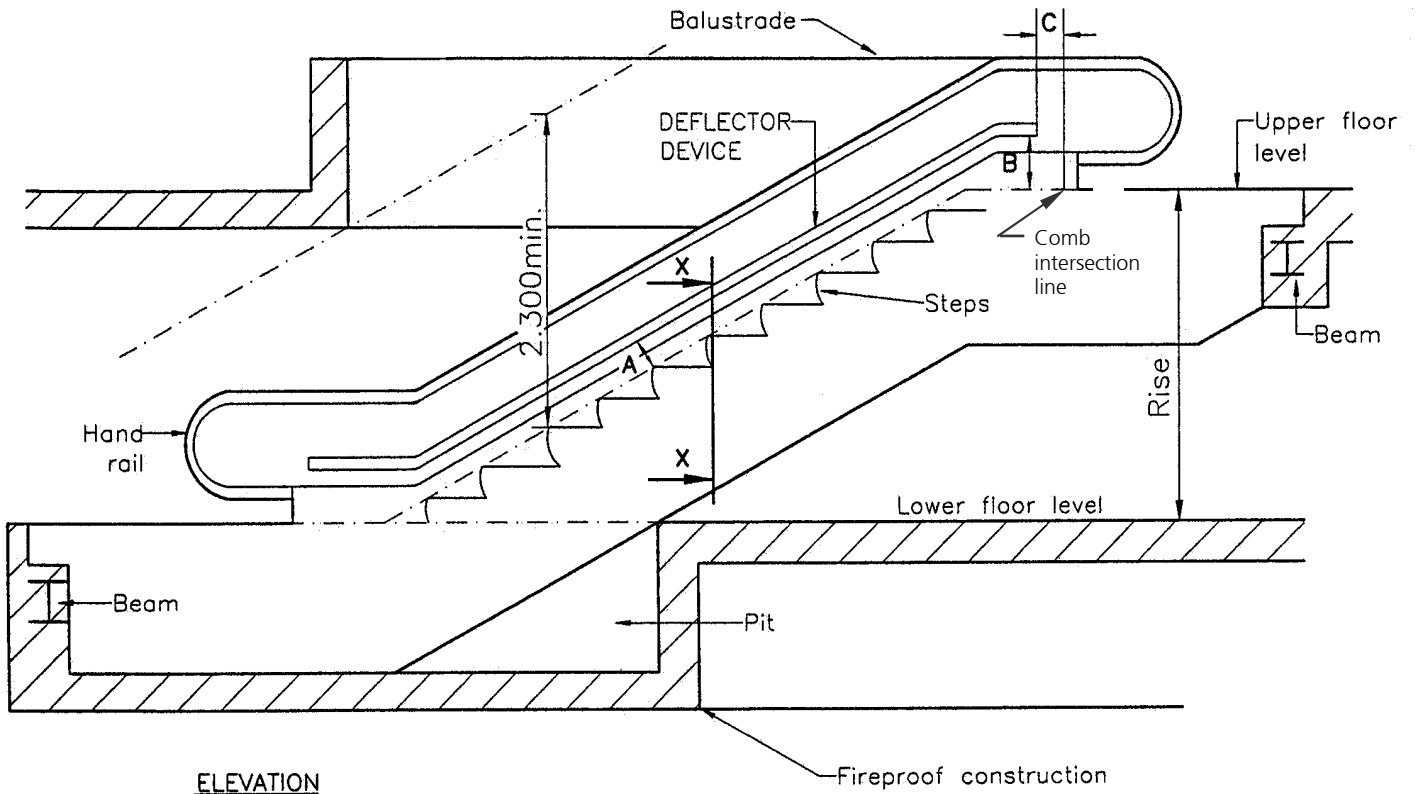
Subclause Symbol

1.1.5.1(a)	A	Skirting	1.2.5	$b_{10} \geq$	200mm
1.1.5.1(b)	B	Interior profile	1.3.1	z_1	Nominal width
1.1.5.1(c)	C	Balustrade interior panelling	3.3.1	$b'_6 \leq$	8mm
1.1.5.1(d)	E	Balustrade decking	3.3.1	$b''_6 \leq$	8mm
1.1.5.1(e)	D	Balustrade exterior panelling	3.3.2	$b_2 \geq$	70mm - \leq 100mm
1.1.5.5(a)	$h_2 \geq$	50mm	3.3.3	$b_5 \leq$	50mm
1.1.5.6(a)	$\gamma \geq$	25°	3.4	$b_1 \leq$	$z_2 + 0.45m$
1.1.5.6(b)	$b_4 <$	30mm	3.4	z_2	Distance between skirting
1.1.5.6(c)	$b_3 <$	0.12m (if γ less than 45°)	3.5.1	$h_3 \geq$	0.10m - \leq 0.25m
1.2.3.2	$b_9 \geq$	0.60m	3.6	$h_1 \geq$	0.90m - \leq 1.10m

The construction of the escalator does not have to correspond to the drawing; only the indicated dimensions have to be observed.

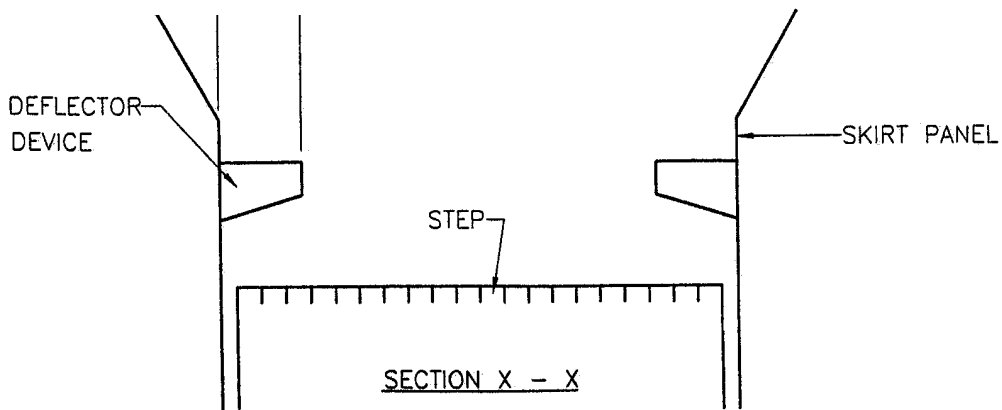
Fig.7 Skirt Panel Deflector Device (Skirt Guard)

$A \approx B$
 $15 \text{ mm} \leq B \leq 25 \text{ mm}$
 $50 \text{ mm} \leq C \leq 150 \text{ mm}$



ELEVATION

$50 \text{ mm} \leq D \leq 75 \text{ mm}$



SECTION X - X