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LICENSING & CERTIFICATION COMMAND
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18 November 2002

To : Authorized Persons
Registered F.S.I. Contractors
Registered Ventilation Contractors
Registered Lift & Escalator Contractors
Fire Insurance Association of H.K.
The Association of Registered F.S.I. Contractors of Hong Kong
Structural Division, H.K.I.E.
Power Companies
The H.K. & China Gas Co.
The Lift & Escalator Contractors Association
Pacific Century Cyber Works Limited
Hong Kong Construction Association
Director of Architectural Services
Director of Buildings
Director of Housing
Petroleum Companies

Dear Sirs,

FSD Circular Letter No. 2/2002
Hot Smoke Test on Smoke Extraction System

To ensure the satisfactory installation of a smoke extraction system, an acceptance test in the form of hot smoke test may be required to ascertain the performance of such system. In this connection, a Working Group comprises representatives of relevant trades, professional institutions and Government departments has been formed to study the above issue. The study is now completed and the recommendations of the Working Group on the standards of the hot smoke test are attached at the appendix.

The requirement of hot smoke test will be stipulated together with the smoke extraction system if considered necessary by the New Projects Division of this Department upon the receipt of general building plans submission involving those compartments as indicated in paragraph (A) of the appendix. The requirement of hot smoke test will take place with immediate effect on the date of this Circular Letter.

Yours faithfully,

(LAU Kwai-shan)
for Director of Fire Services

Encl.

Appendix

(A) Compartments requiring hot smoke test

(i) Compartments with headroom of 12 m or more; or

(ii) Compartments with irregular geometrical dimensions or extraordinary large size.

(B) Salient points for the test

(i) The temperature of simulated hot air plume should be maintained at about 10^{o} C below the temperature rating of the ceiling sprinklers to avoid any unwanted actuation of sprinklers or damage to building structures and finishes;

(ii) The size of the test fire should be at least 1 MW or of such size as agreed by the Director of Fire Services;

(iii) Non-contaminating industrial grade methylated spirit may be used subject to the agreement of the Director of Fire Services;

(iv) Non-toxic oil based smoke generator may be used subject to the agreement of the Director of Fire Services;

(v) The test will be conducted with reference to the Australian Standard AS 4391-1999 or other equivalent international standards.

(C) Safety measures to be observed during the Hot Smoke Test

(i) Adequate safety measures should be provided to prevent any possible spread of fire during the test;

(ii) Adequate fire extinguishers should be provided at scene;

(iii) The standing-by of a fire appliance may be required if considered necessary.

(D) The smoke extraction system will be considered acceptable if the following points are complied with during the hot smoke test

(i) The designed smoke clear height should be maintained;

(ii) The low level fresh air make-up and the high level air extract should be formed in such a pattern that the smoke flow paths shall have a "scouring" effect in all areas within the smoke compartment. The make-up fresh air should not have any impact on the stability of the smoke layer;

(iii) The smoke extraction system should actuate promptly in response to a fire alarm signal;

(iv) No significant disperse of smoke should occur at adjoining smoke compartment(s);

(v) No deflection exceeding the design limit should be observed at hanging smoke curtains;

(vi) No significant smoke should be built up in 'stagnant corners' beneath the smoke layer;

(vii) No smoke should re-enter into the building through building openings or fresh air intake louvers.