



FIRE SERVICES DEPARTMENT.  
EX HOWE BLOCK.  
QUEENSWAY.  
HONG KONG.

TEL NO:  
OUR REF:  
YOUR REF:

Dear Sir,  
REF: NUMBER AND DATE SHOULD  
BE QUOTED IN REFERENCE  
TO THIS LETTER.

Circular AC 1/71

ELECTRIC HEATING ELEMENTS USED IN AIR CONDITIONING INSTALLATIONS  
FIRE PREVENTION BUREAU

An analysis ~~HELP US TO HELP YOU~~ of the past years, where electric duct heaters have been involved, has produced several common contributing factors to the point where the installation of duct heaters may for various reasons be classified as a fire hazard.

Having established a fire hazard, no distinction is permitted between new and existing installations, action shall therefore be taken under the provisions of the Fire Services Ordinance to ensure that all installations comply with the following 'specification'.

Advice on any point arising from this circular or its implementation is available from the Air Conditioning Division of the Fire Prevention Bureau.

Duct Heater Assemblies

- (1) Heating elements shall be evenly spaced and occupy the cross sectional area of the duct at the point where the duct heater is installed.
- (2) Heating elements shall be sheathed and of 'black' heat type, surface temperature of which shall not exceed 500° F.
- (3) An external terminal box shall be provided for all line connections.
- (4) Internal wiring shall be carried out in cable as used in high temperature work.
- (5) Internal insulation for either acoustic or thermal reasons shall not be permitted within 5 feet of the duct heater.
- (6) Fire resisting hinged access doors shall be provided on both sides of the duct heater for maintenance and cleaning purposes.

Line, Control and Sequence Interlocking

- (1) The blower fan motor shall be controlled by a contactor starter complete with overload protection device, stop/start push buttons, auxiliary switches, terminals for sequence interlocking and incorporate a time delay device.
- (2) The heater(s) shall be controlled by a contactor(s), and step controller if required by design considerations, fully interlocked with (1) above and (3) below.
- (3) A sail switch and an overheat thermostat, duct type, manual reset, shall be provided and connected in series with the heating contactor coil circuit. The overheat thermostat shall operate at 120° F ± 10%, and within 90 seconds of reaching this temperature.

- (4) A summer/winter switching arrangement is permissible providing the timer cannot be defeated when either heating or reheat facilities are provided.
- (5) An interlock defeat is permitted subject to use by Authorised personnel only.
- (6) An emergency stop push button shall be provided for and adjacent to the blower fan motor and shall be so connected as to defeat the time escapement delay.
- (7) Control circuit voltages shall not exceed 200 volts.

The intended function of the timer is, that on depressing the stop push button, the heater contactor coil is open circuited but the blower fan motor continues to run for not less than three minutes to dissipate residual heat.

Fan Coil Unit Installations

These may be exempted from this specification where winter heating and reheat elements do not exceed a total rating of 1000 WATTS. The elements are of course required to be interlocked with the blower fan motor and protected as in Line, Control and Sequence interlocking Para. (3).

Yours faithfully,

*James R. S. Pickett*  
(J.R.S. PICKETT)

for Director of Fire Services.

To All Consultants and  
Air Conditioning Contractors.

JRSP:hy