GENERAL SPECIFICATION

FOR

ELECTRICAL INSTALLATION

IN

GOVERNMENT BUILDINGS

OF

THE HONG KONG SPECIAL ADMINISTRATIVE REGION

2017 EDITION

ARCHITECTURAL SERVICES DEPARTMENT
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

(o) The fan shall be fitted with adjustable height pedestal with positive locking arrangement. The extended part of the pedestal shall be chromium-plated and incorporated with a stopper at the end. The base weight shall be sufficiently heavy to hold the fan in a stable manner when the fan is extended to its maximum height of approximately 1.5 m above the floor. At the maximum working height the fan shall not overturn when operated in any normal position on a plane inclined at an angle of 10° to the horizontal.

(p) The fan shall be finished to manufacturer's standard light colour to be approved by the Supervising Officer.

(q) The construction of the fan shall be so designed that end-user does not need any tools to assemble/dissemble the fan guard and fan blade for cleaning.

(r) The fan shall be subject to function test for not less than 72 hours of continuous running and shall show no abnormal conditions such as overheat, failing to oscillate and, etc. during the testing period.

C10.7 DOMESTIC EXHAUST FAN

C10.7.1 General Requirements

(a) The design, construction, and testing of the fan shall be in compliance with the requirements of IEC 60335-2-80:2015. Comply Refer CE cert report

(b) All electrical components, parts and accessories shall be manufactured conforming to the relevant IEC standards. Comply

(c) The fan shall be fitted with a 0.75 mm² 3-core PVC insulated and sheathed flexible cord of approximately 2 m in length. 2-core cord is allowed only for double insulated appliances classified as Class II. Comply Can provide in addition

(d) The power factor of the fan shall not be less than 0.8. Comply

C10.7.2 Performance Requirements

(a) The fan diameters of the respectively exhaust fans shall be:

Fan Size (mm)	Fan Diameters (mm)
150	150 ± 5%
230	230 ± 5%
300	300 ± 5%

Comply

(b) The exhaust fans shall be capable of providing the following air extraction rate:

Fan Size (mm)	Air Extraction Rate (m^3/s)
150	0.06
230	0.15
300	0.3

Comply 0.062 m^3/s

(c) The noise level of the fan during operation shall not exceed 65 dBA measured at 1 m from the fan. Comply 45 dBA

(d) Maximum overall height and width:

Fan Size (mm)	Maximum Height (mm)	Maximum Width (mm)
150	232	230
230	323	305
300	413	391

Comply 224mm H 224mm W

C10.7.3 Construction

(a) The exhaust fan shall be designed of robust construction. The exhaust fan shall be suitable for mounting on windows and partitions which shall have a opening of the following diameter:

Fan Size (mm)	Diameter of Opening (mm)
150	175 to 185
230	250 to 260
300	315 to 325

Comply 185mm

(b) The impeller, fan duct, outlet grille and shutter assembly shall be constructed of high quality flame retardant plastic material. Comply

(c) The motor winding shall have Class B insulation and protected by a thermal cut-out. The fan motor shall be totally enclosed in an aluminium alloy casing. Comply

(d) Motor bearings shall be of self-aligning, oil impregnated porous bronze brushes. Comply

(e) The exhaust fan shall comprise an electrically operated back draught shutter assembly. Comply

(f) The inner and outer clamp plate/grille assembly shall have rubber gasket. Comply

(g) The exhaust fan impeller shall be fully balanced to avoid vibration during operation. Comply

(h) The exhaust fan shall be designed for easy assembling/dismantling to facilitate servicing and maintenance work. Comply

C10.8 PROPELLER FAN – RING MOUNTED TYPE

C10.8.1 General Requirements

(a) The fan shall be rated for continuous operation under ambient temperature up to 50°C.

(b) The motor shall have Class E insulation to IEC 60085:2007. The power factor of the fan motor shall not be less than 0.85 under any operating condition.

(c) The fan shall be fitted with a 0.75 mm² 3-core PVC insulated and sheathed flexible cord of approximately 2 m in length. 2-core cord is allowed only for double insulated appliances classified as Class II.

C10.8.2 Performance Requirements

(a) The fan diameters of the respectively propeller fans shall be:

Fan Size (mm)	Fan Diameters (mm)
241	241 ± 5%
305	305 ± 5%
381	381 ± 5%
457	457 ± 5%
610	610 ± 5%

(b) The air flow rate of the propeller fan of respective sizes shall be not less than the following:

Fan Diameter	Fan Speed	Air Flow Rate	
(mm)	(rpm)	(m³/min)	(cfm)
241	1,300	12	440
305	900	19	700
381	900	39	1350
457	900	70	2,500
610	700	129	4,600

(ii) 700 kPa for the completed pipework, valves and fittings.

(b) Pressure gauges with full scale deflection readings more than 3 times the test pressures shall not be used. The pressure gauges employed in test shall be tested and calibrated by approved laboratory before use.

(c) Immediately after the hydraulic testing, the daily service tank and fuel storage tank must be drained and dried out and a thick coat of linseed oil or equivalent coating shall be applied on the interior surfaces of the tank to prevent rusting. All pipework, fittings and valves after tests shall be drained, dried and flushed out with linseed oil to remove all traces of water to prevent rusting.

(d) The following information shall be permanently and clearly marked on a nameplate to be attached to daily service tank and fuel storage tank in an agreed position:

- Contractor's name;
- Gross capacity in litres; and
- Date of hydraulic test.

C12.13.4 Testing of Noise Control System

After the completion of the acoustic installation, a sound pressure level measurement, with octave band frequency analysis, at the agreed points shall be conducted.

The method of measurement shall generally be in accordance with BS 4142:2014 or other technically equivalent national or international standards. Measurement shall be taken by an industrial grades sound level meter.

C12.13.5 Testing of Exhaust Fan

The testing of Exhaust Fan and all accessories shall comply with the testing requirement in accordance with the Building Services Branch, Commissioning and Testing for Air-conditioning, Refrigeration, Ventilation and Control Systems in Government Buildings, Hong Kong. Comply

C12.14 SUBMISSION TO THE AUTHORITIES

4 weeks after the award of the Contract, the EE Contractor shall provide all necessary information for the submission to the Authorities for the Diesel Generator Installation for the compliance of various Statutory Regulations, including but not limit to the Fire ‘Service Regulations, the Dangerous Goods Regulations and the Air Pollution Control Regulations. The information shall include drawings, equipment catalogues, data sheets, calculations and other information as required by the relevant Authorities.