CODE OF PRACTICE FOR ENVIRONMENTAL CONTROL OFFICERS FOR SPECIFIED PREMISES [ECO(SP)]

Public Health Operational Policy Division
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Singapore

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FOREWORD

Good sanitation and hygiene standards are our primary line of defence against environmental public health threats such as outbreaks of infectious diseases and pest infestations. To ensure that premises maintain high levels of cleanliness and hygiene, attention should be given to all areas in high-risk premises, from front-of-house to back-of-house areas.

To raise cleanliness standards of specified premises, the National Environment Agency implemented the Environmental Sanitation (ES) regime in phases from July 2021. It emphasises a co-regulatory approach with respective sector leads such as Ministry of Education, Ministry of Health, Singapore Food Agency etc, where sector-specific baseline ES standards are mandated for specified premises via an ES programme. Through the ES regime, we hope to instil a habit of proactive routine cleaning and thorough periodic cleaning by the Premises Manager (PM). Depending on the types of specified premises, the PMs will appoint an Environmental Control Coordinator (ECC) or Environmental Control Officer (Specified Premises) [ECO(SP)] to assist him/her in monitoring the implementation of the ES programme (ESP).

This Code of Practice for ECO(SP) spells out their roles and that of the PMs, their responsibilities and what is expected from them. It also serves as a guide to ECOs(SP) for the development and execution of an ESP for specified premises.

Reference has primarily been made to the Technical Guide for Environmental Sanitation for High-Risk Non-Healthcare Premises in Singapore as developed by the Environmental Sanitation Technical Committee.

Director-General of Public Health
National Environment Agency
Singapore

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1. Introduction

1.1 Transmission of infectious diseases is exacerbated by poor environmental hygiene conditions, including from contaminated surfaces, air, food, water and vectors. To safeguard environmental public health, it is important to adopt good environmental sanitation practices i.e. good housekeeping, refuse and pest management, and ensure that the premises is thoroughly cleaned and disinfected after removing the potential source of infection. Good environmental sanitation reduces incidences of infectious disease transmissions within the community and safeguards the overall well-being of occupants of specified premises.

1.2 The Environmental Sanitation (ES) regime mandates minimum cleaning and pest management standards to be implemented by the Premises Manager (PM), and supported by the Environmental Control Coordinator (ECC) or Environmental Control Officer (Specified Premises) [ECO(SP)]. While specified premises will generally require the appointment of an ECC, more complex premises, such as shopping malls, will be required to appoint an ECO(SP).

1.3 This Code of Practice (COP) is intended to guide ECOs(SP) and PMs in implementing the Environmental Sanitation programme within their specified premises, in compliance with the Environmental Public Health Act 1987, and its associated subsidiary legislation.

1.4 For clarifications on the COP, please enquire via the NEA online feedback form at https://www.nea.gov.sg/.



NEA's Online Feedback Form



Environmental Sanitation Regime



Pest Control

2. Definitions

In this COP, unless otherwise specified:

2.1 "cleaning" means using water and detergent to physically remove dirt, impurities from surface or objects. Cleaning does not kill all infectious pathogens;

2.2 "Code of Practice" means any code of practice issued or approved under section 99A(1) of the Environmental Public Health Act 1987, and includes such a code of practice as amended from time to time;

2.3 "Director-General" means the Director-General of Public Health appointed under section 3(1) of the Environmental Public Health Act 1987;

2.4 "disinfection" means using disinfectants to kill infectious pathogens found in bodily discharge and on surfaces of objects. For a disinfectant to work properly, a dirty surface should first be cleaned with detergent and water;

2.5 "Environmental Control Officer" means a person who will assist the premises manager in ensuring compliance to the environmental sanitation standards;

2.6 "environmental sanitation programme" means any environmental sanitation programme developed under section 62B of the Environmental Public Health Act 1987, and includes such environmental sanitation programme as amended from time to time;

2.7 "high-risk premises" means premises which are prone to increased risk of contamination and contributing to disease transmission due to higher presence of pathogens;

2.8 "incident" means an incident that may pose a public-health risk from the identification of a potential source of infection in the premises;

2.9 "indoor air quality" refers to the quality of the air in an indoor environment;

2.10 "major renovations" refer to renovations that involve carpentry, flooring, wall painting and ceiling works or other works that may result in off-gassing and the release of pollutants from the building material and products;

2.11 "mandatory requirements" refer to the minimum stipulated environmental sanitation standards which the premises manager and Environmental Control Officer are required to adhere to via a routine and periodic cleaning and disinfection regime in the premises;

2.12 "pathogen" means a bacterium, virus, fungus or other microorganism that can cause disease;

2.13 “periodic cleaning” means cleaning and disinfection operations covering all areas within the premises, including areas not easily accessible and not covered by routine cleaning, and will require intense cleaning techniques for areas covered under routine cleaning;

2.14 “Premises Manager” means a person or incorporated entity with the charge, management and control of the specified premises, and is responsible for ensuring compliance to the environmental sanitation standards;

2.15 “Environmental Control Coordinator” means any individual who is registered under the Environmental Public Health Act 1987 as an Environmental Control Coordinator;

2.16 “Environmental Control Officer” means any individual who is registered under the Environmental Public Health Act 1987 as an Environmental Control Officer;

2.17 “routine cleaning” means the day-to-day cleaning operations of a premises, including disinfection as specified in the environmental sanitation programme;

2.18 “sector lead” refers to key stakeholders who have oversight and/or regulation over the premises in their respective sectors.

2.19 “specified premises”, has the meaning given by section 62A of the Environmental Public Health Act 1987;

3. Specified premises requiring Premises Managers (PM) and Environmental Control Officers [ECO(SP)]

Specified premises must appoint a PM, who will in turn appoint an ECO(SP) for the specified premises.

(a) The PM must be a person or incorporated entity with the charge, management and control of the specified premises; and

(b) The ECO(SP) should preferably be a personnel who oversees the day-to-day operations within the specified premises.

The list of specified premises may be referred to in the Environmental Public Health (Designation of Specified Premises) Order 2021 and the Environmental Public Health (Designation of Specified Premises — Shopping Malls) Order 2022.

3.1 The requirements to qualify as specified shopping malls under the ES regime are as follows:

Criteria for Inclusion as Specified Shopping Malls

- Commercial buildings with significant retail space which are defined as having Net Lettable Area[1] of ⩾ 4,600 sqm, with Retail Gross Floor Area[2] of ⩾ 7,000 sqm; and
- The building is promoted as, or generally regarded as, a shopping mall.

[1] **Net Lettable Area** refers to all covered floor space available on an exclusive basis to occupiers in a building excluding common areas, namely staircases, lifts, common passageways, and common corridors.
[2] **Retail Gross Floor Area** refers to the space used for shop, food & beverage (F&B), entertainment and health & fitness purposes, which will include common areas used to support these purposes.

Generally, the following commercial buildings shall not be considered as specified shopping malls: –

- Any premises intended to be used primarily for the provision of sports and recreational facilities or civic and community facilities;
- Any premises intended to be used primarily for the provision of public passenger transport services e.g. bus, rail and aeroplane;
- Any premises situated on land that is zoned under the Master Plan of "Business 1", "Business 2" and "Business Park" and primarily provides amenities to workers in the vicinity, **except** if the premises is promoted as, or generally regarded as, a shopping mall; or
- Clusters of shops which are integrated with adjacent developments, with no well-defined physical boundaries and are porous i.e. ability to access and enter at many points or area, and with non-air-conditioned common areas. This may to refer to rows of open-air street-side shophouses and generally unenclosed commercial developments.

4. Mandatory Environmental Sanitation (ES) Standards

4.1 In 2019, NEA convened an ES Technical Committee to develop national baseline standards on environmental sanitation for designated high-risk non-healthcare premises. The ES Technical Committee comprised representatives from government agencies, the academia and the industry. The committee developed the Environmental Sanitation for High-Risk Non-Healthcare Premises in Singapore Technical Guide to provide premises owners of high-risk non-healthcare premises with background on the importance of environmental sanitation in preventing the transmission of infectious diseases, and how owners or operators of premises can reduce the incidences of community-acquired infections transmittable by contaminated surfaces and manage pest infestations with good environmental sanitation. The Technical Guide also provides users with information on what to do and look out for when performing their routine and periodic environmental cleaning and disinfection, as well as to deal with incident(s) involving bodily fluids/discharge.

4.2 The ES regime will require the specified premises to develop and implement an ES programme (ESP) which includes, but is not limited to, the following baseline standards developed by the Technical Committee:

(a) Minimum routine cleaning and disinfection frequencies, which must cover high-touch surfaces including sanitary facilities, children-centric facilities, food preparation/service areas and back-of-house areas (such as bin centres). Particular attention must be paid to high-risk areas such as high-touch surfaces used by vulnerable persons or areas with high risk of contamination are to be cleaned more frequently;

(b) Minimum six-monthly thorough periodic cleaning and disinfection of the specified premises, which includes intense cleaning and disinfection of areas covered under routine cleaning, as well as cleaning of areas that are not easily accessible and not covered by routine cleaning (e.g. out-of-reach window panels, ceiling and wall fans). The periodic cleaning frequency may be increased depending on the type of premises (e.g. quarterly for food establishments);

(c) Minimum yearly maintenance of surfaces or fixtures as stated in the applicable ESP, which includes the associated stipulated routine cleaning frequency (where relevant);

(d) Minimum 10% of the areas in the premises to be visually inspected daily and after periodic cleaning and disinfection works, to ensure that the objectives are met;

(e) Cleaning and disinfection protocol is put in place to respond to incidents involving bodily discharge, where a more intense cleaning and disinfection process must be conducted to thoroughly remove all traces of the bodily fluids and potential pathogens within. Specified premises should refer to the

guidelines in Appendix VI when developing their own cleaning and disinfection protocols;

(f) Outcome-based cleanliness indicators to be achieved after the completion of cleaning operations;

(g) Ensure workers are trained and provided with the necessary equipment and cleaning agents to carry out effective cleaning and disinfection;

(h) A pest management plan is implemented, with a copy filed on site, to ensure that measures are in place to prevent pest issues. A comprehensive pest management survey[1] is to be conducted minimally once every 6 months to review the effectiveness of the pest management plan and identify any damaged structures that may promote the breeding and/or harbourage of pests. The comprehensive survey template is appended in Appendix II. All other records of the works and measures conducted in respect to the pest management plan must also be filed to facilitate audits carried out by NEA;

4.3 Through the implementation of the ES programme, the specified premises must meet the following ES outcomes:

(a) Premises are clean and free of visible litter, stain, environmental waste, spillage and soilage;

(b) Crockery and trays are promptly cleared from tables, tray return racks, and floor; and

(c) No significant vector issues within the premises at any time.

[1] PM shall comply with the Control of Vectors and Pesticides Act (CVPA) 1998 for vector-related issues and hire a registered vector control operator to carry out the 6-monthly comprehensive pest management survey.

5. Roles and Duties of a Premises Manager (PM)

5.1 The PM shall be the personnel or incorporated entity managing or controlling the overall physical upkeep and cleanliness of the specified premises (e.g. mall management, building owner, Management Corporation Strata Title (MCST) Council). The PM shall take and follow the advice given by the ECO(SP) in maintaining good ES standards at the specified premises. The PM is responsible for all irregularities and violations in the specified premises under his/her charge and shall carry out the following duties:

[Required][1] Appointment of Environmental Control Officer [ECO(SP)]

(a) Appoint an ECO(SP) who is registered with the NEA and notify the Director-General via the submission of the ESP;

(b) It is an offence for a PM to appoint an unregistered ECO(SP) who does not possess a valid ECO(SP) Certificate of Registration.

(c) Appoint another ECO(SP) and notify the Director-General, via the re-submission of the ES programme, **within 14 days upon termination of appointment, suspension or cancellation of registration** for the ECO(SP) appointed for the specified premises.

(d) To avoid conflict of interest, the appointed ECO(SP) should not be a representative from the cleaning company or Vector Control Operator (VCO) engaged to carry out environmental services within the specified premises. The ECO(SP) should be a personnel who is familiar with or directly oversees the daily cleaning and vector control operations within the premises.

[Required] ES Programme (ESP) Submission and Implementation

(a) Endorse and submit to the Director-General the ESP developed by the ECO(SP) in accordance with the sector-specific template in Appendix I, **within one month from the start of operations for new premises.** The ESP is to be submitted once, and only needs to be re-submitted within 14 days if amendments or updates are made. The changes requiring the resubmission of the ESP can be found in Appendix I. PMs should review the ESP on a yearly basis, or when there are changes to the premises layout, cleaning contractors and/or VCOs. Where necessary, the frequency of cleaning or conduct spot cleaning should be increased to ensure the outcome-based cleanliness indicators are met. Examples of acceptable cleanliness standards can be found here;

(b) Engage a registered VCO to complete the Pest Management Plan (Refer to Section B of ESP) and file the pest control programme (if any), pest

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

management survey records (Refer to Appendix II) and pest control works (if any) for audit purposes;

(c) Implement the ESP upon the PM's endorsement and ensure that the frequencies of cleaning and disinfection, and cleanliness outcomes stipulated in the ESP are met;

(d) Implement any remedial measures recommended by the ECO(SP);

(e) Keep an updated copy of the ESP at the specified premises;

Others

(a) **[Required]**[1] Comply with any directive issued by the Director-General;

(b) **[Required]** Facilitate the work of the ECO(SP) by providing the necessary resources including facilities, equipment, and information necessary to enable the ECO(SP) to carry out his/her duties effectively and efficiently in the specified premises;

(c) **[Required]** Permit ECO(SP) to attend any training courses, seminars, conferences or meetings as and when required by the Director-General, and to reimburse them in full as required under the law, and to not make any deduction from the remuneration of the ECO(SP) for being absent for the purpose of attending the relevant training course, seminar, conference or meeting;

(d) Advocate for good coordination with relevant stakeholders, when necessary, to ensure that the overall cleaning and disinfection outcome-based indicators are met; and

(e) Attend relevant training to be equipped with the correct knowledge and skillsets or send pertinent employees for training on relevant environmental topics.

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

6. Role and Duties of an Environmental Control Officer [(ECO(SP)]

6.1 In general, the role of an ECO(SP) is to work with the PM to develop, monitor and review the effectiveness of an ES programme (ESP) that is customised to the premises type. The appointed ECO(SP) shall advise the PM on the requirements under the ES regime, environmental remediation measures, routine and periodic cleaning frequencies.

6.2 The ECO(SP) shall look out for conditions/ situations in the specified premises, which cause or are likely to cause environmental sanitation problems. He/She should report these conditions/ situations to the PM, together with recommendations on remedial measures to rectify the conditions/ situations and prevent recurrence. The main areas where the ECO(SP) shall pay attention to are:

(a) Proper and adequate cleaning and maintenance of high-touch surfaces (e.g. handles etc) and high footfall areas such as sanitary facilities (i.e. toilets);

(b) Proper and adequate cleaning and disinfection of surfaces in contact with bodily discharge;

(c) Proper housekeeping and refuse management;

(d) Presence of vectors such as mosquitoes, flies, cockroaches and rats, and their potential breeding or harbourage areas.

6.3 The ECO(SP) shall carry out the following duties at the specified premises:

[Required][1] Development of an ES Programme (ESP) and Monitoring of its implementation

(a) Work with the PM to develop and submit an ESP in accordance to the sector-specific template in Appendix I. The PM is to endorse and submit to NEA **within 1 month upon the implementation of the ES regime to the specified premises or start of operations for new premises**;

(b) Amend, review and update the ESP in the manner required by the Director-General or by the applicable codes of practice and standards of performance, and to submit the amended or updated ESP to the PM;

(c) Assess and monitor the implementation of the ESP, the environmental efforts carried out, and review the effectiveness of these measures and recommend remedial actions to address any default in the implementation of the ESP;

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

[Required][1] Audit Checks and Routine Inspections

(a) Inspect the specified premises to ensure all facilities, equipment and operations do not pose any environmental health hazard;

(b) Facilitate the compliance with environmental regulations under the ES regime and advocate for other good environmental practices;

(c) Attend to all feedback on any irregularities and notify the PM accordingly;

(d) Retain the records of the cleaning, disinfection and pest management works **till the end of the next calendar year** (e.g. records from 1 Jan 2023 to 31 Dec 2023 must be kept till 31 Dec 2024 and may be discarded on 1 Jan 2025). Sample templates of the records of inspections can be found in Appendix II. The list of records to be kept can be found in Appendix III;

(e) Liaise with NEA or any authorised officers during compliance inspections, and make available the records and service reports when so requested by NEA or any authorised officer;

(f) Assist the authorities to investigate outbreaks of infectious, vector-borne or food-borne diseases at specified premises;

Others

(a) Engage workers, tenants, ECCs, stakeholders and MCST council (if applicable) and coordinate environmental efforts to achieve good environmental health standards;

(b) Organise campaigns, training courses and other activities, where required, to develop and sustain the interest of tenants, workers and other stakeholders in maintaining good environmental health standards;

(c) **[Required]** Attend any training course, seminar, conference or meeting conducted by the Ministry of Sustainability and the Environment (MSE), NEA or other agencies or bodies as the Director-General may require, to be equipped with the relevant knowledge and skillsets.

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

7. Registration of an Environmental Control Officer [ECO(SP)]

7.1 A person with the requisite qualification must successfully complete the ECO(SP) training course and pass the assessment before he/she can be registered as an ECO(SP) with the NEA. To apply for the ECO(SP) course, interested participants must meet any one of the following competency requirements:

(a) Workplace Literacy and Numeracy (WPLN) Level 6 across all 5 assessments (Reading, Listening, Speaking, Writing and Numeracy) and 2 years relevant work experience in environmental engineering, pest control, estate management, environmental health or other work which is relevant to the work of ECO(SP);

(b) WPLN Level 7 across all 5 assessments;

(c) Any diploma and 2 years relevant work experience in environmental engineering, pest control, estate management, environmental health or other work which is relevant to the work of ECO(SP);

(d) Degree (any discipline)

7.2 Participants must register or renew their ECO(SP) registration certificate within 5 years from the completion and passing of the ECO(SP) training course. This can be done, via the Whole-of-Government GoBusiness licensing portal, available at https://dashboard.gobusiness.gov.sg/task-details/environmentalcontrolofficerspecificpremises. A Certificate for Registration for ECO(SP), which is valid for a stipulated registration period of 3 years, will be issued upon approval, and payment of a registration fee. The sample certificate can be found in Appendix IV.

7.3 It is an offence for an individual to work as an ECO(SP) if he/she does not possess a valid Certificate of Registration.

7.4 An ECO(SP) shall produce his/her Environmental Control Officer Certificate of Registration for inspection, when required by authorised officers.

7.5 An ECO(SP) may renew the Certificate of Registration before its expiry. Should the training course certificate be awarded more than 5 years ago, the ECO(SP) will need to pass an assessment or course with the accredited training provider. An ECO(SP) will need to complete additional courses or training relating to the duties of an ECO(SP) for the purpose of the renewal of the registration, within 3 years before the date on which the application is made.

7.6 The Director-General may suspend or cancel the registration of an ECO(SP) if he is satisfied that the ECO(SP) has failed to discharge any of his/her duties set out in Para 6.3 above.

8. ES Regime Requirements and Best Practices

This section provides a set of reference for which PMs and ECOs(SP) are required or encouraged to adopt to attain the mandatory ES standards and to minimise any potential environmental sanitation hazards.

8.1 Cleaning and Disinfection

8.1.1 **[Required]**[1] Routine cleaning and disinfection operations shall be carried out for (and are not limited to the following areas): high-touch surfaces such as door handles, escalator railings, lift buttons, toilets and shower facilities including diaper changing areas in family rooms, family and children-centric facilities e.g. playgrounds, and food preparation/service areas e.g. kitchens, tabletops. These areas are particularly prone to public health risks or pest infestations and need to be routinely cleaned and disinfected.

8.1.2 **[Required]** Thorough periodic cleaning and disinfection operations shall cover all surfaces that could be reached within the building/premises including those areas covered under routine operations. Thorough periodic operations include areas not covered by routine cleaning such as hard to reach lighting and other fixtures like pipes, ceiling fans, perimeter drains and secondary ceilings. The PM and ECO(SP) shall also ensure that photo evidence of surfaces/fixtures before and after periodic cleaning are documented for auditors to verify that thorough cleaning had been carried out and comply with expected cleanliness standards. Examples of areas to be photographed can be found here.

8.1.3 **[Required]** Back-of-house areas such as toilets, loading/unloading bays, bin centres and bin-holding areas are particularly prone to public health risks and pest infestations and shall be decluttered and cleaned regularly.

8.1.4 In tandem with the cleaning operations, inspections should be conducted to check for physical defects that may impede cleaning, and such defects should be rectified/ repaired promptly.

8.1.5 **[Required]** Visual inspections shall take place soon after the cleaning operations to assess the quality of cleaning. PM and ECO(SP) may refer to the Singapore Standard SS694:2023 - Code of practice for the measurement of cleaning performance for commercial, residential estates and retail F&B premises for guidance on the quality benchmarks for visual inspection.

The use of visual indicators such as fluorescent gel may complement visual inspections of the cleaning operations. In addition, the use of ATP (adenosine triphosphate) meter is recommended for food preparation areas upon routine cleaning, and areas with higher risk profile during thorough periodic operations.

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

8.1.6 In the event of an infectious disease outbreak, PM and ECO(SP) should increase the frequency of routine cleaning and disinfection. When the pathogen responsible for the outbreak is known, PM and ECO(SP) should ensure that the right type of disinfectant is used. PM and ECO(SP) may refer to the Environmental Sanitation for High-Risk Non-Healthcare Premises in Singapore Technical Guide available at https://www.nea.gov.sg/our-services/public-cleanliness/ESR for information on the types of disinfectants to be used.

8.1.7 **[Required]**[1] During cleaning and disinfection procedures, the correct Personal Protective Equipment (PPE) shall be used. The type of PPE to be used depends on the infectious agent(s) that is/are being dealt with and the risk of exposure. Contact is usually the route of transmission and therefore gloves are recommended. Cleaning and disinfection may generate droplets and aerosols. Therefore, a surgical mask or N95 and safety goggle/face shield is recommended. A gown or shoe covers may be required depending on the chance of exposure to/transmission of infectious agents. PM and ECO(SP) may refer to the Environmental Sanitation for High-risk Non-Healthcare Premises in Singapore Technical Guide available at https://www.nea.gov.sg/our-services/public-cleanliness/ESR.

The requirements and recommendations pertaining to the cleaning and disinfection of toilets are as follows:

8.1.8 Toilets should not be used for storage purposes.

8.1.9 **[Required]** Toilets shall be clean, and the floor should be kept dry at all times. Inspection cards or feedback monitoring system should be used to monitor the daily maintenance of the toilet. Spot cleaning should be carried out during peak hours and in between major cleaning.

8.1.10 Colour code cloths or cleaning tools to differentiate the areas used for cleaning (e.g., cloth for litter bins should not be used for toilet cubicles or vanity tops to prevent cross contamination.)

8.1.11 Particular attention should be paid to the disinfection of sink and floor gully U-traps before cleaning to reduce the risk of virus aerosolisation from wastewater. For disinfection of sink U-trap, pour a cup (250mL) of 0.5% bleach solution into the sink and for the disinfection of toilet floor gully U-trap, pour 2 cups of 0.5% bleach solution into the floor trap and allow contact time of at least 5 minutes.

8.1.12 Reusable cleaning tools and equipment should be disinfected after use with an appropriate disinfectant. Disposable cleaning tools should be properly disposed of after use.

[1] Any section labelled with [Required] refers to mandatory requirement under the Environmental Sanitation regime.

8.1.13 Checks for leaks in sanitary pipes and fittings should be made, especially at the joints. Any leaks or defects should be rectified immediately. Water seal should not be dried out.

8.1.14 Toilets should be sufficiently ventilated and exhaust fans should be kept running longer operating hours. Any mechanical ventilation system used should be cleaned and serviced regularly.

8.1.15 Provision of air deodorisers and sanitisers for toilet bowls is encouraged.

8.1.16 If applicable, bidet fittings (i.e. bidet fixture and handheld bidet sprayer) should be cleaned on a regular basis. Damaged bidet fittings should be replaced where necessary.

8.1.17 Limit usage of floor blowers in toilets to dry the floor after cleaning, and when the toilet is closed and not in operation. Floor blowers should not be used when toilets are operational to minimise the risk of exposure to bioaerosols.

8.2 Pest Management

8.2.1 PM shall comply with the Control of Vectors and Pesticides Act (CVPA) 1998 for vector-related issues.

8.2.2 **[Required]**[1] Specified premises must engage a NEA-registered vector control operator (VCO) that meets the requirements as stipulated in https://www.nea.gov.sg/our-services/pest-control/vector-control-operator to carry out the 6-monthly comprehensive pest management survey. Competent personnel with experience should be hired to carry out the survey. The complexity of the premises and the corresponding manpower and time required should be taken into consideration, to ensure that the survey is carried out properly and effectively.

8.2.3 **[Required]** The PM and ECO(SP) shall work with the VCO to formulate the pest management plan. It should take into consideration the premises' structure/layout and types of business operations, the high-risk areas, and the corresponding manpower and time required to conduct a thorough inspection. The PM and ECO(SP) shall draw up and implement an effective pest control programme, outlining the surveillance and control measures needed to eliminate, reduce and/or manage vector-related issues. The pest control programme should focus on removing potential breeding habitats and harbourage areas of mosquitoes, flies, cockroaches and rats (i.e. source reduction).

8.2.4 The scope of work and responsibilities of the VCO should be spelt out in the contract. Please refer to the work and responsibilities of VCO made available at https://www.nea.gov.sg/our-services/pest-control/vector-control-operator. The sample rat contract specifications for premises are available at https://www.nea.gov.sg/our-services/pest-control/rat-control.

[1] [Required] refers to sections that are mandatory under the Environmental Sanitation Regime

8.2.5 Premises with history of pest infestations or with exceptional circumstances (e.g. major alteration and addition (A&A) works activities, having undergone a change in management or VCO), should conduct the comprehensive survey more frequently than the stipulated minimum frequency of once every six months. Treatment should be carried out, when necessary, to eliminate pest infestations.

8.2.6 Proper refuse management and housekeeping is necessary to prevent the harbourage and breeding of pests. All damaged structures should be repaired and pest-proofed where necessary. This could include ensuring that windows and external doors are close fitting, gaps are less than 6mm to prevent entry of rats, sanitary systems and grease traps are in good working condition.

8.2.7 Should any carcasses or parts of pests be found within the premises, proper disposal should be carried out and affected areas sanitised.

8.2.8 **[Required]** ECO(SP) shall maintain good records of the pest management plan and pest management service reports (Appendix II) from the VCOs, to monitor progress over time. In addition, the performance of the VCOs should be assessed regularly to ensure that the scope of work as stipulated in the contract is met. If the VCO's performance is unsatisfactory, areas of improvement and key performance indicators to be met should be highlighted to the VCO.

8.2.9 Specific measures pertaining to pest control are as provided for reference:

Control of Mosquitoes

(a) Inspections should be conducted at least once a week at all areas to detect and remove stagnant water and/or mosquito breeding.

(b) For stagnant water that cannot be removed immediately due to structural defects, the VCO should apply larvicides as an interim measure. Reapplication may be required as necessary, such as after a heavy rain.

(c) Good housekeeping should be maintained to prevent the stagnation of water among receptacles and litter. Structural defects should be rectified promptly.

(d) Fogging should only be carried out when the adult mosquito population is high or when there are mosquito-borne disease transmissions near the specified premises. Routine fogging as a preventive measure is not encouraged. Fogging shall be carried out by NEA-registered VCO, using a suitable NEA-registered insecticide.

Control of Rats, Flies and Cockroaches

(a) Good housekeeping and refuse management are necessary to prevent the propagation and harbouring of rats, flies and cockroaches.

(b) Eliminate Food Sources

- Maintain the cleanliness of the premises daily and clean up food or refuse spillage immediately.
- Organic wastes should be bagged, tied and disposed of in proper refuse bins. The refuse bins shall be in good condition and lined with plastic bags. Refuse bins should always be covered and emptied at the end of each day.
- Food should be properly stored in tightly covered containers, metal cabinets or in screened rat-proof rooms. Food items should be stored at least 15cm above the ground.

(c) Eliminate Shelters and Entry Points

- Store goods properly and inspect the storage areas regularly.
- Dispose of unwanted items promptly.
- Seal any holes or crevices in the ceiling, walls or floors.
- Ensure that floor traps and downpipes are properly covered with grating.
- Install strong wire meshes at any potential rat entry points, such as doors and windows. Where possible, cover entrance points by placing air curtains or plastic screens, or install self-closing doors.

Pest Control measures

(a) Regular checks for pest infestations and burrows should be conducted.

(b) Active burrows shall be properly treated. Burrows shall be sealed only when they are no longer active. Crevices are potential rat harbourages and should be sealed.

(c) Should sludge be used for landscaping, the sludge should be covered with a layer of topsoil at least 5 cm thick to prevent breeding of flies.

(d) The use of restricted pesticides shall be handled only by the NEA registered VCO.

9. Other Best Practices

This section provides a set of recommendations which the specified premises are encouraged to adopt to minimise any potential environmental hazards.

9.1 Waste Management

9.1.1 Poor waste management can have a negative impact to the environment, and result in a range of diseases through different routes of exposure. The specified premises shall comply with various environmental laws such as the Environmental Public Health Act 1987 and the Resource Sustainability Act 2019 (e.g. RSA Part 3, Part 4 or/and Part 5 whichever applicable to the premises/premises owner).

9.1.2 The Code of Practice on Environmental Health (COPEH) provides the requirements for refuse storage and collection systems to guide premises to ensure that a refuse storage and collection system is properly put in place.

9.1.3 Only licensed general waste collector(s) for the collection and disposal of generated waste (including recyclables) may be engaged. For the list of waste collectors, please refer to https://www.nea.gov.sg/our-services/waste-management/waste-collection-systems. The specified premises should ensure a valid written agreement for the waste collection services and invoices are available for reference, when required. The waste collected shall be sent to licensed waste disposal facilities. There shall be proper records of the waste disposed of and recycled quantities at the premises.

9.1.4 All designated waste collection points must be easily accessible by the waste collection vehicle(s).

9.1.5 Use dedicated bins for proper storage and deposition of recyclables, non-incinerable waste, incinerable waste and putrefiable waste.

9.1.6 The number of bins provided for each type of waste must be adequate. There should be no overflowing and spillage of waste around any bin at all times and the bins and bin area should be kept clean and uncluttered.

9.1.7 Putrefiable waste should be removed daily to prevent any environmental health issues. All putrefiable waste meant for disposal should be bagged before disposal into bins. All bins for putrefiable waste should be SS EN 840 standard wheeled bins with maximum size of 660 litres and properly covered when not in use.

9.1.8 Bulky waste/debris should be stored in skip tanks (open top containers) placed at a location easily accessible by waste collection vehicles.

9.1.9 The specified premises shall comply with the Mandatory Waste Reporting (MWR) Scheme under section 30(A) of the Environmental Public Health Act 1987 (EPHA). The MWR Scheme requires the premises to make annual timely submissions of complete and substantiated data and documents on waste disposed of and

recycled, have a proper weighing system in place, have proper book-keeping of accurate records, and install the necessary infrastructure to ensure compliance to the regulation.

9.1.10 In line with Singapore's vision to become a Zero Waste Nation, the specified premises should develop a waste minimisation plan that identifies opportunities to reduce, reuse and recycle (3R). The 3R initiatives can address the significant quantities of waste produced in the premises, which provide great potential for waste minimisation and recycling. The waste minimisation plan should be submitted together with the waste report as required under the MWR Scheme.

9.1.11 The specified premises may brief cleaners, staff and tenants on good 3R practices and proper waste management (including managing recyclables) at least twice a year and engage them to participate in 3R programmes implemented at the premises. A Zero Waste Manager can be appointed to set up a 3R programme to monitor and oversee all 3R initiatives.

9.1.12 Periodic waste audits can be conducted to identify areas of wastage, and uncover opportunities to reduce, reuse or recycle waste materials. It will also help collect baseline data for measuring the effectiveness of the 3R programme after its implementation. Waste audits can be conducted by an external waste management company or contractor or done in-house.

9.1.13 The specified premises shall comply with the Food Waste Segregation, Treatment and Reporting Requirements under Part 5: Food Waste of the Resource Sustainability Act 2019 (RSA), if their premises has been identified as a Prescribed Building as stipulated in the Resource Sustainability (Food Waste Segregation, Treatment and Reporting) Regulations.

(a) The Prescribed Building is required to have necessary infrastructure to enable occupiers to dispose of food waste separately from other types of waste and ensure that food waste is treated on-site unless prior written permission has been obtained from NEA to treat food waste off-site.

(b) For installation of on-site food waste treatment system, the Prescribed Building may refer to COPEH. On-site food waste treatment systems are to adhere to any prevailing requirements on hygiene standards.

(c) For off-site food waste treatment, the Prescribed Building is to engage a licensed General Waste Collector (GWC) to send the food waste for treatment at a licensed General Waste Disposal Facility (GWDF).

(d) The Prescribed Building can refer to the Food Waste Segregation and Treatment Guidebook on implementing food waste segregation for treatment within their premises. The guidebook can be found on NEA website at this link.

(e) The Prescribed Building should ensure that there are proper book-keeping procedures and timely submission of information are to be made annually as part of the Food Waste Reporting requirement.

9.1.14 Large retailer of regulated consumer electrical and electronic equipment (EEE) who own or occupy any premises with a floor area of or more than 300 sqm, will be required to set up in-store e-waste collection points and to work with NEA's appointed Producer Responsibility Scheme (PRS) operator on the e-waste collection points at common areas in the specified premises.

9.1.15 The specified premises should facilitate the access of the PRS Operator to collect from the instore e-waste collection points and e-waste recycling bins placed at publicly accessible areas of the premises/building.

9.1.16 For e-waste generated by the tenants/occupiers of the premises (i.e. not collected from members of the public from e-waste bins placed at publicly accessible areas), the specified premises can engage (i) NEA's appointed PRS Operator, or (ii) licensed waste collector, or (iii) licensed e-waste recycler, to collect the e-waste.

9.1.17 The specified premises may send their staff to the Zero Waste Manager course to build competencies and learn how the relevant regulatory requirements mentioned in 9.1.9 to 9.1.16 can be fulfilled. More information on the course can be found at https://www.nea.gov.sg/our-services/waste-management/3r-programmes-and-resources/zero-waste-manager-course.

9.2 Smoking in Prohibited Places and Littering

9.2.1 The specified premises shall comply with the Environmental Public Health Act 1987 (EPHA), Environmental Public Health (Public Cleansing) Regulations, Smoking (Prohibition in Certain Places) Act 1992 and Smoking (Prohibition in Certain Places) Regulations 2018. This ensures cleanliness of the environment and minimise the spread of epidemics and infectious diseases.

9.2.2 Smoking is prohibited within commercial buildings such as shopping malls. NEA encourages premises owners to look into demarcating designated smoking points (DSPs) within their premises for the benefit of their occupants and visitors. To identify suitable locations to set up a DSP, please refer to the Designated Smoking Areas (DSA) guidelines available at https://www.nea.gov.sg/our-services/smoking-prohibition/guidelines-on-dsas-signage-and-publicity-materials.

9.2.3 For premises with demarcated DSPs or DSAs, directional signage should be installed prominently to facilitate the convenience of smokers among their occupants and visitors to identify a location where smoking is permitted.

9.2.4 Operators and managers of smoking prohibited premises, are required by law to request smokers to cease smoking or leave the premises if they wish to continue smoking.

9.2.5 Operators and managers should also ensure that sufficient “No Smoking By Law” signages are displayed conspicuously in locations where smoking is prohibited as a reminder to smokers.

9.2.6 To combat littering, premises should place adequate number of litter bins in appropriate areas and carry out regular disposal of the bins' contents.

9.2.7 The design and placement of the bins should be regularly reviewed to maximise their usage and the cleanliness of premises (e.g. strategic placement of bins at DSPs/DSAs for smokers to dispose cigarette ash and stubs).

9.2.8 To prevent bins from overflowing, the minimum designed capacity should be adequate, and emptying should be carried out at least once a day.

9.2.9 The specified premises should take ownership of the upkeep of the premises and are encouraged to deploy trained community volunteers to carry out patrols and advise any environmental offenders accordingly. Please refer to the community volunteer programme details available at https://www.nea.gov.sg/programmes-grants/volunteering/community-volunteer-programme.

9.3 Environmental Hygiene of Licensable Aquatic Facilities (Swimming Pools, Water Playgrounds and Multi-use Spa Pools) and Registrable Aerosol-generating Systems (Cooling Towers)

9.3.1 The specified premises shall adhere to the regulatory requirements in Aquatic Facilities (Part 7) and Aerosol-Generating Systems (Part 7A) in Environmental Public Health Act 1987 and its regulations, i.e. Environmental Public Health (Licensable Aquatic Facilities) Regulations 2021, Environmental Public Health (Licensable Aquatic Facilities) Order 2021, Environmental Public Health (Registrable Aerosol-Generating Systems) Regulations 2021 and Environmental Public Health (Registrable Aerosol-Generating Systems) Order 2021.

9.3.2 Licensed aquatic facility shall adhere to the conditions of the licence during the duration of licence validity.

9.3.3 Please refer to Sections 4 and 5 of the Code of Practice on Environmental Health 2024 available at https://www.nea.gov.sg/corporate-functions/resources/practices-and-guidelines/guidelines/practices for information on design requirements of cooling tower and licensable aquatic facilities respectively.

9.3.4 The specified premises shall ensure that all registrable aerosol-generating systems are registered with NEA and licensable aquatic facilities have a valid aquatic facility licence, before they can be operated or used.

9.3.5 The specified premises shall ensure that the water quality of all licensable aquatic facilities and registrable aerosol-generating systems always adhere to the regulatory parameter limits and monitored through testing by a Singapore

Accreditation Council (SAC) accredited laboratory at the regulatory frequency and these test results submitted to NEA.

9.3.6 Licensed aquatic facilities shall ensure that on-site testing for pH value and residual disinfectant (free chlorine/ total bromine) are conducted at least once daily, including weekends and public holidays, unless the aquatic facility is not open for use on that day. These on-site test results shall be recorded and kept for 12 months.

9.3.7 Licensed aquatic facilities should ensure that the filtration system run for 24 hours daily as it takes 4 turnover cycles (1 cycle every 6 hours) to reduce about 98% of turbidity in the pool.

9.3.8 A comprehensive maintenance programme including cleaning, disinfecting and water treatment should be carried out to prevent *legionella* bacteria from multiplying and to allow water treatment chemicals to work more effectively. Owners can refer to World Health Organisation (WHO) Guidelines on *Legionella* and the prevention of legionellosis available at https://apps.who.int/iris/.

9.4 Water Efficiency

9.4.1 The water supply reticulation system in the premises shall comply with the regulatory requirements of the Public Utilities Act 2001, Public Utilities (Water Supply) Regulations, the Singapore Standard SS636:2018 – Code of Practice for Water Services and other relevant Subsidiary Legislations.

9.4.2 Mandatory Requirements and Water Efficiency Measures/Practices

(a) The specified premises shall ensure compliance of requirements under the Water Efficiency Management Practices if annual water consumption is at least 60,000m^3.

(b) All water pipes, pipe fittings, valves, taps/mixers, flushing cisterns, flush valves, etc., installed in the premises shall be certified as compliant with PUB's Stipulation of Standards and Requirements for Water Fittings (PUB S&R).

(c) Water fittings (taps/mixers, flushing cisterns, urinal flush valves and waterless urinals) installed at the premises from 1 Apr 2020 shall be labelled with minimum 2-ticks or more under the Mandatory Water Efficiency Labelling Scheme (MWELS).

(d) Water closet (WC) flush valves installed at premises from 1 Jan 2023 shall be labelled with minimum 2-ticks or more under the MWELS.

(e) Self-closing delayed-action taps shall be installed for all wash basins and showers.

(f) For mechanical self-closing delayed-action taps at wash basin, the flow rate and preset flow timing shall be set at a maximum of 2 litres/min and between 5 secs and 7 secs respectively. Sensor-operated self-closing delayed-action type at wash basin with a maximum flow rate of 2 litres/min shall have a fixed pre-set flow timing of 60 secs (with ± 5 secs tolerance), provided that water supply from the tap is automatically cut-off when the hand is moved away from beneath the tap, whichever is earlier.

(g) Dual-flush low-capacity flushing cisterns shall be used for WC pans. Public toilets shall, as required by NEA, be fitted with sensor-operated flush valves.

(h) Water pipes and fittings should not be subjected to pressures greater than 35m head. This can be achieved by the provision of intermediate tanks and pumps or by use of pressure reducing valves.

(i) Sprinklers or hoses without controlling devices shall not be used with water supplied by PUB for irrigation, or watering of gardens and grounds, or washing of vehicles.

(j) Premises shall not install or use any cooling system which is of once-through design or design without recycling of cooling water.

(k) Premises shall not install or use any bath having a capacity, measured to the overflow level of the bath, exceeding 250 litres which does not incorporate recycling facilities or has a drain plug for direct discharge of water.

(l) Premises shall not use water supplied by the PUB to dilute industrial wastewater so that it may be discharged into the public sewer.

(m) Specified premises shall ensure that water leaks and faulty fittings are isolated immediately and repaired promptly.

(n) Premises should use commercial equipment that meets the minimum water efficiency requirements.

(o) Premises should be certified as Water Efficient Building (WEB). Water-efficient flow rates and flush volumes at the respective fittings in the premises should be maintained.

(p) Premises should explore efficient ways of managing water demand at their premises through various water conservation projects.

(q) Where possible, premises should explore using alternative water sources for non-potable purposes.

(r) For landscape greenery features, watering of plants should only be carried out between 6pm and 7am. For outdoor plants, avoid watering during rainy days.

If automated irrigation system is used, install rain and soil moisture sensors.

(s) Premises should use water retaining soil media and adopt native drought resistant plants and group plants with similar water requirements together so that plants of different types are irrigated separately.

(t) Private meter at make-up water inlet of swimming pool balancing tank should be installed to monitor and track water consumption for the purpose of leak control management. Leak tests can be conducted to identify leaks. If leaks are detected, water supply to the balancing tank shall be isolated immediately and repaired promptly.

(u) A buffer volume in balancing tank to capture bather displacement and rainwater should be allowed.

(v) Premises should minimise or avoid operation of water features wherever possible to minimise/prevent evaporation and drift losses.

(w) Premises should explore enhancing cooling towers efficiency by reducing water loss through design/operations & maintenance/improved housekeeping.

(x) Premises should explore improving the cycles of concentration by selecting suitable cooling water treatment programs based on metallurgy of the cooling towers/heat exchangers as well as operating conditions.

(y) Specified premises should always refer to PUB website (www.pub.gov.sg) for best practice guides for water efficiency and other technical guides available.

9.5 Food Safety

9.5.1 Food shops within specified premises may be required to appoint an Environmental Control Coordinator (ECC) and comply with the ES regime. The ECO(SP) should work together with ECCs to identify sanitation and hygiene issues and flag up to food shop owners for rectifications, or respective authorities [e.g. Singapore Food Agency (SFA)] if there are lapses observed.

9.5.2 Specified premises may refer to https://www.sfa.gov.sg/food-retail for requirements, regulations and recommendations on the best food hygiene, handling and storage practices.

(a) On-site food shop/supermarket (if any) must obtain a licence from the SFA prior to its operation and the licence is to be renewed regularly. Operators have to comply with all related requirements and regulations. Please refer to the licensing requirements available at https://www.sfa.gov.sg/food-retail/licence-permit/guidelines-for-licensed-food-retail-premises.

(b) All food handlers working at food establishments must attend and pass the WSQ Food Safety Course (FSC) Level 1 (formerly known as Basic Food

Hygiene Course) and register with the SFA.

9.6 Maintenance of Kitchen Exhaust Systems

9.6.1 The specified premises shall comply with SCDF's Code of Practice for Fire Precautions in Buildings 2023 available at https://www.scdf.gov.sg/firecode2023/firecode2023 to ensure occupational health and safety, and compliance with the fire codes.

9.6.2 All exhaust systems and its ducting shall be maintained at least once a year in accordance to Singapore Food Agency (SFA) licensing requirements available at https://www.sfa.gov.sg/food-retail/licence-permit/guidelines-for-licensed-food-retail-premises.

9.6.3 The specified premises shall ensure the entire (interior and exterior) exhaust duct and kitchen hood be degreased and cleaned at least once every 12 months. Maintenance is to be carried out by a specialist, and records should be kept by operators for verification and produced during SFA hygiene inspections.

9.6.4 Please refer to Section 3 of the Code of Practice on Environmental Health 2021 available at https://www.nea.gov.sg/corporate-functions/resources/practices-and-guidelines/guidelines/practices for the design siting and operations requirements of kitchen exhaust systems.

9.6.5 The specified premises shall ensure that appropriate air cleaning system is installed to capture oil, water vapour, grease, particulate matters and gaseous pollutants, and that the system has no visible smoke and fumes exhausting. A washable baffle grease filter is commonly used in conjunction with other air cleaning equipment – electrostatic air cleaners for smoke removal or activated carbon filter/ozone for removal of gaseous pollutants.

9.7.6 The specified premises should identify signs of poorly maintained kitchen exhaust systems during routine inspections. These include smoky air, oil on walls, ceilings and surfaces, foul odour/lingering cooking smells, rattling noise coming from the fan, strange noise when the motor starts, excess moisture build-up and damaged filter.

9.7.7 To clean the fan and accessible parts of the kitchen exhaust duct, workers can use a scrub pad or cotton cloth soaked in a tub of soap water. Maintain and replace different air cleaning systems in accordance with manufacturer's recommendation.

9.7.8 To implement best practices or any rectifying measures, the specified premises may refer to the Singapore Standard SS 553: 2016 – Code of Practice for Air-Conditioning and Mechanical Ventilation in Buildings: Guidelines on kitchen ventilation and maintenance of kitchen exhaust system found in Section 10.

9.8 Indoor Air Quality (IAQ)

9.8.1 The specified premises should review the facility's mechanical ventilation system to ensure adequate capacity is provided for each occupied space. Outdoor air supply should minimally meet requirements specified in SS553:2016 (Table 1 for air-conditioned spaces and table 5 for non-air-conditioned spaces). System upgrades or improvements should be considered if inadequacy is observed. When installing or retrofitting mechanical ventilation systems, the premises should ensure that prospective systems provide adequate outdoor air supply. Carbon dioxide (CO_2) monitoring can be used as a proxy for ventilation adequacy, and to identify pockets of under-ventilated spaces or overcrowding within the premises. High CO_2 levels imply that there is insufficient outdoor air supply and/or overcrowding, and measures should be taken to improve ventilation or reduce occupancy.

9.8.2. High efficiency filters (at least MERV 14 or ISO ePM1 70-80% is recommended) should be used in air-conditioning and mechanical ventilation systems to treat both outdoor and recirculated air. Portable air purifiers with HEPA filters may be deployed for localised air-cleaning in spaces where ACMV systems are unable to accommodate high-efficiency filters. When installing or retrofitting ACMV systems, specified premises should ensure that prospective systems have the capacity to accommodate high-efficiency filters.

9.8.3 The specified premises should monitor mechanical ventilation systems to ensure they operate properly and provide acceptable indoor air quality for occupancy levels and usages for each space. All mechanical ventilation equipment should be checked periodically to ensure they are functional and operating. Openings for outdoor air supply should not be closed or blocked, to ensure adequate outdoor air provision to all occupied spaces. Records of checks should be logged.

9.8.4. ACMV systems should be maintained regularly. This includes the inspection and maintenance of supply fans, air dampers, exhaust fans, filters, etc., and should be recorded in maintenance logs. Inspection of air handling units and air ducts for any build-up of contamination are recommended every 6 and 12 months respectively, or more frequently if necessary. Inspections should be conducted in a way that do not agitate the contaminants within the system and negatively impact the indoor environment. ACMV systems should be cleaned when a system inspection indicates that a system is contaminated or if the system performance is compromised by contamination build-up.

9.8.5. The specified premises should educate workers and cleaners on identifying and timely reporting of signs of poor IAQ. Examples of such signs are mould growth, abnormal smells, unusual hot or cold spots, excessive dust and abnormal dampness or moisture indoors.

9.8.6. Low pollutant-emitting materials and products should be selected for indoor renovation and construction works. These include low-VOC (volatile organic compound) paints and materials.

9.8.7. For further guidance on best practices for good IAQ, the specified premises may refer to the following publications:

- Code of Practice for Indoor Air Quality for Air-conditioned Premises (SS 554: 2016+A1: 2021),
- Code of Practice for air-conditioning and mechanical ventilation in buildings (SS 553:2016+A2: 2021)
- Updated Guidance on Improving Ventilation and Indoor Air Quality in Buildings for a Healthy Indoor Environment
- Technical Advisory on use of air-cleaning technologies to mitigate COVID-19 aerosol transmission risk
- Advisory on CO_2 Monitoring to Assess Ventilation Adequacy

10. Penalties

10.1 The ES regime is administered under the Environmental Public Health Act 1987. It is an offence for the PM or ECO(SP) to contravene or to fail to comply with any of the clauses or regulations stated in the Act or its associated subsidiary legislation. The list of penalties that can be imposed on the ECO(SP) or the PM is tabulated in Appendix V.

11. Useful References

S/N	Resources
1	Environmental Sanitation for High-Risk Non-Healthcare Premises in Singapore Technical Guide
2	Environmental Sanitation Regime Cleanliness Standards Document can be accessed here.
3	Before and After Thorough Periodic Cleaning (areas to be photographed) Document can be accessed here.
3	Pest Control Webpage can be accessed at https://www.nea.gov.sg/our-services/pest-control/overview.
4	The Singapore Standards: • SS694:2023 - Code of practice for the measurement of cleaning performance for commercial, residential estates and retail F&B premises • SS 553: 2016+A2:2021 Code of Practice for Air-conditioning and Mechanical Ventilation in Buildings • SS 554:2016+A1:2021 Code of Practice for Indoor Air Quality for Air-Conditioned Buildings The Singapore Standards may be purchased from https://www.singaporestandardseshop.sg/.
5	Updated Guidance on Improving Ventilation and Indoor Air Quality in Buildings for a Healthy Indoor Environment Document can be accessed at https://www.nea.gov.sg/our-services/public-cleanliness/environmental-cleaning-guidelines/advisories/guidance-on-improving-ventilation-and-indoor-air-quality-in-buildings-amid-the-covid-19-situation
6	Technical Advisory on use of air-cleaning technologies to mitigate COVID-19 aerosol transmission risk Document can be accessed at https://www.nea.gov.sg/our-services/public-cleanliness/environmental-cleaning-guidelines/guidelines/guidance-note-on-use-of-air-cleaning-technologies-to-mitigate-covid-19-aerosol-transmission-risk

7	Advisory on CO_2 Monitoring to Assess Ventilation Adequacy Document can be accessed at https://www.nea.gov.sg/our-services/public-cleanliness/environmental-cleaning-guidelines/advisories/advisory-on-co2-monitoring-to-assess-ventilation-adequacy
8	The National Environment Agency's Pictorial Guidelines for cleaning procedures on: (a) Office Common Area; (b) Office Space; (c) Retail F&B; and (d) Washroom The pictorial guides were developed in partnership with Workforce Singapore, Environmental Management Association of Singapore, the Restroom Association of Singapore, the World Toilet Organisation, as well as cleaning service providers and Approved Training Organisations.
9	The World Health Organisation's Pictorial Guidelines on the proper donning and doffing of Personal Protective Equipment (PPE)
10	The World Health Organisation's Glove Use Information Leaflet and Pictorial Guidelines for the donning and doffing of gloves

Appendix I: Sector-specific Environmental Sanitation (ES) Programmes

ECOs(SP) are to refer to the sector-specific ES Programme to develop the ES programme for their specified premises. The ES programme has to be submitted **within 1 month from the commencement of operations for new specified premises[1].** The PM is required to submit the ES programme in word/pdf format to NEA via FormSG[2]. The ES Programme must be filled up using the template in the latest version of the Code of Practice.

[1] If the Premises Manager (PM) is unable to submit the ESP within the specified timeline, he/she is required to notify NEA with relevant justifications for the delay.
[2] As the ECC or ECO(SP) registration number will be required for the submission of the ES programme, the PM should proceed to submit the ES programme only after the registered ECC or ECO(SP) has obtained the certificate of registration from NEA.

The ES Programme has to be resubmitted to NEA within 14 days when amendments are made, to the:

1. Appointment of the PM and/or ECO(SP);
2. Inventory of areas to be cleaned and disinfected;
3. Cleaning and disinfection frequency;
4. Address of the premises;
5. Appointment of cleaning contractor (if applicable); and
6. Appointment of registered vector control operator.

1 Specified Shopping Malls

https://www.nea.gov.sg/docs/default-source/our-services/public-cleanliness/es-regime/environmental-sanitation-programme-for-specified-shopping-malls-3rd-edition.docx

Appendix II: Sample Inspection and Survey Templates

1 Sample Cleaning/Inspection Schedule



https://www.nea.gov.sg/docs/default-source/our-services/public-cleanliness/es-regime/sample-cleaning-and-inspection-schedule.docx

2 Comprehensive Pest Management Survey



https://www.nea.gov.sg/docs/default-source/our-services/public-cleanliness/es-regime/comprehensive-pest-management-survey-template-(2nd-edition).docx

Appendix III: List of Records to be Produced for NEA Audits

S/N	**Documents for Audits** *Records of cleaning, disinfection and pest management works shall be kept till the end of the next calendar year.*
1	Up-to-date and endorsed ES Programme **(Appendix I)**
2	Cleaning contract (if any), which should provide information on: a) Scope of work or Schedule of work b) List of equipment/tools, cleaning agents and disinfectants
3	Cleaning/inspection records **(Appendix II)**
4	Photo evidence of surfaces/fixtures before and after thorough periodic cleaning
5	Pest management contract (if any)
6	Comprehensive pest management survey reports **(Appendix II)**
7	Routine pest management service reports (if any)
8	SOP for proper cleaning and disinfection procedures (including incidents of bodily discharge) **(Appendix VI)**

Appendix IV: Sample Certificate of Registration for Environmental Control Officer



National Environment Agency
Safeguard · Nurture · Cherish

CERTIFICATE OF REGISTRATION FOR ENVIRONMENTAL CONTROL OFFICER (SPECIFIED PREMISES)

Passport size photo will be inserted here

NAME:

REG NO:

DATE OF ISSUE:

DATE OF EXPIRY:

for Director
Development Control and Licensing Division

SAMPLE

Environmental Public Health Act 1987
Environmental Public Health (Registration of Environmental Control Coordinators and Environmental Control Officers) Regulations 2021

This is to certify that the person whose identity is stated on this document has been registered under the Environmental Public Health Act and its associated subsidiary legislation. The person stated on this document is required to comply with the Act, its associated subsidiary legislation, Code of Practice, Standards of Performance and any order which the Director-General of Public Health and/or any authorised officer may, from time to time, issue.

This Certificate of Registration is to be carried by the person stated on this document whenever duties related to that of an Environmental Control Coordinator (ECC) are carried out.

SAMPLE

Appendix V: Penalties

1 Penalties against Environmental Control Officer [ECO(SP)]

S/N	Nature of Offence	Penalty
Environmental Public Health Act 1987		
1	Section 61A An individual fails to register before taking on the role of an ECO(SP), or acts in the role of an ECO(SP) when his/her registration is suspended.	Fine not exceeding $5,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $10,000.
2	Section 62D Failure of ECO(SP), without reasonable excuse, to comply with any requirement imposed under monitoring powers, e.g. to furnish documents and information.	Fine not exceeding $5,000.

2 Penalties against Premises Manager (PM)

S/N	Nature of Offence	Penalty
Environmental Public Health Act 1987		
1	Section 62A Manager of any specified premises fails to appoint a registered ECO(SP).	Fine not exceeding $5,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $10,000.
2	Section 62B Failure of the PM to – (a) Endorse and submit to the Director-General the ES programme; (b) Implement the ES programme upon endorsing it; (c) Implement any remedial measures recommended to the manager by the ECO(SP).	Fine not exceeding $5,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $10,000.
3	Section 62C Failure of the manager to comply with any directive issued by the Director-General.	Fine not exceeding $5,000 and, in the case of a second or subsequent

		conviction, to a fine not exceeding $10,000.
Environmental Public Health (Specified Premises) Regulations 2021		
4	Regulation 2 Manager fails to; (a) keep an updated copy of the environmental sanitation programme at the specified premises. (b) make that copy available for inspection if required by the Director-General or any authorised officer appointed under section 3(2) of the Act.	Fine not exceeding $5,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $10,000.
5	Regulation 3 Manager fails to appoint another ECO(SP) within 14 days upon termination of employment or suspension or cancellation of the registration of the ECO(SP) for any specified premises.	Fine not exceeding $5,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $10,000.
6	Regulation 4 Manager fails to – (a) provide the ECO(SP) for the specified premises with the facilities, equipment and information that are necessary to enable the ECO(SP) to discharge his or her duties effectively; (b) permit the ECO(SP) for the specified premises to attend the meetings and training courses relating to the work of the ECO(SP) that the Director-General may require; (c) reimburse the ECO(SP) for the specified premises for all expenses incurred by the ECO(SP) in attending the meetings or training courses mentioned in sub-paragraph (*b*); and (d) permit the ECO(SP) for the specified premises to be absent from work for the purposes of attending the meetings or training courses mentioned in subparagraph (*b*).	Fine not exceeding $1,000 and, in the case of a second or subsequent conviction, to a fine not exceeding $2,000.

Appendix VI: Incident Response Cleaning and Disinfection Guidelines

1 Incident Response

1.1 This section provides guidelines for response to incidents that pose a public-health risk such as the evidence of contamination by bodily discharge e.g. vomitus or faecal/urine discharge of a sick person. This also applies to stools and urine present in toilets other than those discharged in toilet bowls/urinals, which can be appropriately flushed away.

1.2 Premises Managers (PMs) are expected to ensure the availability of manpower and resources to carry out the incident response. The personnel responding to the incidents should be familiar with the incident response cleaning and disinfection guidelines. PMs may identify personnel or teams to respond to such incidents.

1.3 Evidence of contamination by bodily discharge

If bodily discharge is detected in the premises, or if contamination by bodily discharge is suspected, the area where the bodily discharge/contamination was detected should be cordoned off from the public, with a minimum radius of 3 metres surrounding the area. Environmental cleaning and disinfection of the area should be carried out immediately as described in Section 3.

If persons who released the bodily discharge are present in the premises, they may be potentially infectious and unwell. Attend to the potentially infectious persons as described in Section 4.

Some examples of potentially infectious bodily discharge and their possible routes of transmission are listed in the table below:

Type of bodily discharge	**Possible routes of transmission**	**Possible infectious diseases**
Blood or pus	Blood-borne, through broken skin or exposure to mucous membranes	Hepatitis B and C, human immunodeficiency virus (HIV)
Nasal or throat discharges (including but not limited to aspirates, mucus, sputum and saliva)	Airborne and/or contact	Common cold, influenza and other respiratory viruses, measles, mumps, chickenpox, tuberculosis
Secretions (including but not limited to vesicular fluids)	Airborne and/or contact	Measles, mumps, chickenpox

Stool (solid or watery)	Faecal-oral	Bacterial and viral gastroenteritis including norovirus and rotavirus, hepatitis A and E, *Salmonella, Shigella,* and other enteric bacteria
Urine	Contact	Cytomegalovirus
Vomitus	Faecal-oral	Bacterial and viral gastroenteritis including norovirus and rotavirus, hepatitis A and E, *Salmonella, Shigella,* and other enteric bacteria

2 Materials and Equipment

2.1 The appropriate use of Personal Protective Equipment (PPE), cleaning equipment and disinfectant is required to prevent or minimise the spread of infection when cleaning and disinfection is carried out. Owners and operators of premises should ensure that they have adequate stocks of items listed in Sections 2.2-2.4.

2.2 The following lists the minimum required PPE that should be available when environmental cleaning and disinfection of bodily discharge is carried out:

(a) Disposable vinyl gloves;
(b) Disposable aprons or gowns, or a change of clothes;
(c) Surgical mask*; and
(d) Shoe covers or cleaning boots (where necessary).

*N95 masks and goggles may be required in scenarios where there is a risk of aerosolisation of the infectious agents. Personnel must be mask-fitted prior to the use of N95 masks.

2.3 The following lists the minimum required materials and cleaning equipment that should be available when environmental cleaning and disinfection of bodily discharge is carried out:

(a) Detergent;
(b) Water;
(c) Absorbent material (disposable cloths/rags);
(d) Disposable bins;
(e) Disposable forceps/tongs;
(f) Disposable puncture-resistant container (for disposal of sharps);
(g) Double-lined plastic/trash bags;
(h) Mop;

(i) Pail;
(j) Signage/warning notices to alert public (in various languages where possible); and
(k) Tape or marker cones to cordon off area.

2.4 Disinfectants

The disinfectant used should be selected based on the likely pathogen present. Disinfectants should be prepared and applied in accordance with the manufacturer's guidelines. Users should ensure that appropriate contact time is given before removing any disinfected materials. Users should also be equipped with the appropriate tools and where necessary, PPE, before conducting any cleaning and/or disinfection.

The following lists common disinfectants that may be used in cleaning and disinfection procedures in response to incidents:

(a) Hypochlorites. e.g. household bleach (5.25-6.15% sodium hypochlorite) – For cleaning and disinfection of highly contaminated surfaces, dilute 1 part bleach in 9 parts water or 5000 ppm. Allow contact time of 10 minutes. Hypochlorite solutions should be prepared fresh.

(b) Chlorine-based products – Alternative chlorine-based products release chlorine dioxide, sodium dichloroisocyanurate, or chloramine-T, based on their mode of action. Refer to the manufacturer's guidelines for details on disinfection properties and use.

(c) Hydrogen peroxide – This disinfectant possesses bactericidal, virucidal, sporicidal, and fungicidal properties. They can be used as a disinfectant in a post-incident cleaning and disinfectant procedure (7.5%, 30 minutes contact time).

(d) Alcohol-based disinfectants and quaternary ammonium compounds (QUATS) are not encouraged for use in cleaning and disinfection procedures in response to incidents when the infectious agent is unknown.

For more information on the types of disinfectants available, please refer to international sources such as the United States Environmental Protection Agency[1] and the Centers for Disease Control and Prevention[2].

[1] Selected EPA-registered Disinfectants, Environmental Protection Agency, United States, https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants
[2] Guidelines for Environmental Infection Control in Health-Care Facilities, 2003 (Updated 2019), the Centers for Disease Control and Prevention, United States, https://www.cdc.gov/infection-control/hcp/environmental-control/index.html

3 Cleaning and Disinfection Procedures

3.1 This section describes recommended procedures to carry out cleaning and disinfection of premises when there is evidence of contamination by bodily discharge or when there is prolonged exposure to individuals infected with severe infectious diseases that may be environmentally acquired.

3.2 Safety Precautions

Safety precautions are work practices that assume all bodily discharge are potentially infectious. When cleaning and disinfection is carried out, these safety precautions should be observed to minimise the risk of disease transmission:

(a) General practices:

- Good hygiene practices are encouraged before and after a cleaning and disinfection procedure. This will include hand washes before and after a cleaning and disinfection procedure is carried out.

- Before and during clean-up and disinfection, cordon-off area surrounding the bodily discharge, put up signage to inform public to avoid the area.

(b) PPE:

- Gloves, surgical mask (or N95 and goggles)* and disposable gowns should be worn when clean-up is carried out and when wastes are handled. Gloves should be changed when they have come into contact with the bodily discharges or are visibly soiled.

- Shoe covers or cleaning boots should be worn when necessary to avoid dirtying and contaminating shoes (for example, if the bodily fluid is found on the floor).

* In scenarios where cleaning activities may generate aerosols, or if infectious agents are transmitted via aerosols, wear an N95 mask in place of a surgical mask, and eye goggles or face shields.

(c) Waste Disposal:

- For liquid wastes (blood, bodily fluids), absorb the bulk of the spill with disposable materials like disposable cloths.

- Special care should be taken if spill area contains sharp materials. Sharp materials should be picked up with tongs or forceps, wrapped securely in layers of newspaper and disposed into double-lined plastic/trash bags, or thrown in puncture-resistant containers.

- All infectious wastes should be discarded into double-lined plastic/trash bags, or a puncture-resistant container.

- Double-lined plastic/trash bags and puncture-resistant containers containing potentially-infected wastes should be segregated from other waste, and disposed of as general waste which will be incinerated.

3.3 Cleaning and disinfection procedures

The following describes general procedures for cleaning and disinfection at premises when there is evidence of contamination by bodily discharge:

(d) Wash hands and put on PPE. Avoid touching face, mouth, nose and eyes during clean-up. Gloves should be removed and discarded if they become soiled or damaged, and a new pair worn.

(e) Prepare the disinfectant according to the manufacturer's recommendations or bleach solution (dilute 1 part bleach in 9 parts water, 5,000 ppm).

(f) Cordon off the area for cleaning from the public, with a minimum radius of 3 metres around the bodily discharge.

(g) Pre-soak absorbent materials such as disposable cloths with disinfectant or bleach.

(h) Avoid using a spray pack to apply disinfectant on potentially highly contaminated areas (such as toilet bowl or surrounding surfaces) as it may create splashes which can further spread the infectious agents.

(i) If solids or semi-solids (e.g. stools, watery stools) are present, using a pair of tongs, pick up the discharge with disinfectant-soaked absorbent material. Dispose the solid/semi-solids into double-lined plastic/trash bags.

(j) Sharp materials should be picked up with tongs or forceps, wrapped securely in layers of newspaper and disposed in double-lined plastic/trash plastic bags, or thrown in puncture-resistant containers.

(k) Cover the remaining spill area with disinfectant-soaked absorbent material and allow for the appropriate contact time.

(l) Remove and discard absorbent material and disinfected waste into double-lined plastic/trash bags.

(m) Use new, disinfectant-soaked absorbent material to wipe off any remaining disinfected waste.

(n) Discard used absorbent material and tongs into double-lined plastic/trash bags.

(o) Double-lined plastic/trash bags containing infectious waste and puncture-resistant containers should be sealed securely and disposed of as general waste. Where possible, cleaning equipment used to handle infectious material should also be disposed.

(p) Following the cleaning and disinfection of the premises, surface-clean the affected area with disinfectant.

(q) Cleaning equipment that cannot be disposed of should be disinfected by soaking in disinfectant or bleach solution.

(r) All disposable PPE should be removed and disposed of after the cleaning and disinfection activities. Hands should be washed with soap and water immediately after each piece of PPE is removed, following completion of cleaning.

(s) If disposable gowns are not used, shower or wash up and change clothes immediately after the clean-up.

Special circumstances

(a) For fabrics, remove curtains/ fabrics/ quilts for washing, preferably using the hot water cycle. For hot-water laundry cycles, wash with detergent or disinfectant in water at 70^{o}C for at least 25 minutes. If low-temperature (i.e. less than 70^{o}C) laundry cycles are used, choose a chemical that is suitable for low-temperature washing when used at the proper concentration.

(b) For contaminated carpets, cushions or mattresses, arrange for a cleaning contractor as soon as possible to clean and disinfect the items. Before the area/item is cleaned, cordon off the affected area, or do not use the item, until cleaning and disinfection has been completed.

4 Attending to Potentially-Infected Person(s)

This section describes recommended procedures when attending to potentially-infected person(s) [scenario in Section 1.3]:

(a) Wear gloves when attending to the person(s).

(b) Wear a surgical mask when person(s) appears to suffer from a respiratory infection.

(c) If person(s) is present in the premises, escort person(s) to sick bay or holding area that is not publicly accessible.

(d) Assist person(s) to seek medical attention or care immediately.

(e) Dispose of PPE in general waste.

(f) Practise good hand hygiene by washing hands with soap before and after coming in contact with potentially-infected or known-infected person(s).

(g) Record down the time and nature of the incident. Obtain the contact number and details of the person(s) if they are agreeable for contact tracing purpose.

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