

Guideline on Checking of Existing Septic Tank and Soakaway System

Purpose

This Guideline aims to provide guidance to facilitate a “third party certification” (e.g certification from Authorized Persons (APs)) in the checking of existing Septic Tank and Soakaway System (STS) in countryside villages in order to ascertain they are in good working condition and suitable for guesthouse and / or food business licence application purpose.

Application

The checking of existing STS through “third party certification” in order to ascertain they are in good working condition is applicable only when all prerequisites below can be fulfilled:

- a) The existing STS is to handle the sewage and wastewater arising from an existing Old Village House (OVH), which is:
 - i. located in one of the Countryside Villages as defined by Countryside Conservation Office (CCO) under Environment and Ecology Bureau (EEB);
 - ii. constructed before the enactment of Buildings Ordinance (Application to the New Territories) Ordinance (BO(ATNT)O), Cap.121 on 16 October 1987;
 - iii. constructed of a height not more than 8.23m and with a roofed-over not exceeding 65.03m²;
- b) The certification is for the purpose of guesthouse and / or food business licence application; and
- c) There are genuine and insurmountable difficulties to construct a new STS for the purpose of food business and / or guesthouse licence application, which shall be written supported by CCO.

Introduction

To support the policy initiative of promoting the introduction of licensed guesthouse and , food business premises in countryside areas by making use of the existing OVHs, the use of the existing STSs of the OVHs to handle the sewage and wastewater arising from the premises could be considered and explored.

A well-functioned STS shall have sufficient capacity for its intended use. The STS shall also be operated and maintained properly such that it would not cause any environmental pollution or nuisance. The below checklist contains those essential items that need to be considered to assess if the STSs are in good working condition and suitable for the intended uses. Further references could be found in EPD’s “Guidance Notes on Discharge From Village Houses” and “ProPECC PN 5/93 on Drainage Plans subject to Comment by the Environmental Protection Department” and LandsD’s “Drainage and Health Requirements for Village Type Houses”.

1) Checking of STS condition

a) Survey on STS physical condition

- i) The STS must be made with appropriate materials (e.g. concrete), all the wall and the floor of the STS (except the soakaway pit) should be so constructed and finished as to be impervious
- ii) It (except the soakaway pit) must be intact without leakage¹ and in good working order
- iii) All wastewater discharge pipes of the OVH must be connected to the STS²; no overflow or by-pass pipe is allowed
- iv) Rain / surface water must not be connected to the tank and should be discharged to surface channel
- v) Inspection manholes should be provided for the STS
- vi) Dimension and configuration of STS should be suitable for the intended uses. Reference could be made to the specification and requirement stipulated in Appendix D of EPD's "ProPECC PN5/93" or LandsD's "Drainage and Health Requirements for Village Type Houses", or otherwise be assessed by a professional third party to be suitable for the intended uses

b) STS capacity (may vary depending on its performance and underlying soil condition)

- i) The STS should have adequate capacity to handle the sewage and wastewater flow arising from the premises
- ii) Estimation of the sewage flowrate per capita should make reference to EPD's "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" or other justified references applicable for the intended uses
- iii) For food business where cooking will be carried out
 - (1) capacity of STS shall be sufficient for its operation taking note of the different flow of wastewater generated in different types of food business
 - (2) a grease trap³ of suitable size shall be installed either under the sink or underground.
- iv) Absorption capacity⁴ of underlying soil of the soakaway pit shall be assessed and the condition of gravel or percolation media⁵ inside or underlying the soakaway pit should be checked on site to ascertain if the soakaway pit is suitable for handling the estimated flow
- v) Restriction on the no. of persons accommodated (for guesthouse) may be necessary in some cases with STS of limited capacity
- vi) Regular inspections and maintenance of grease trap should be carried out. The grease trap waste should be tightly sealed and disposed properly with other kitchen refuse. Reference could be made to EPD's "Grease Traps for Restaurants and Food Processors - Grease Trap Maintenance"

¹ The STS shall be checked for any potential leakage by a suitable test to be carried out on site.

² A dye test shall be carried out on site to ascertain proper connection to the STS.

³ All greasy waste water from food premises, especially that from sinks and cooking stove areas, should be collected and discharged to a foul water drain via a grease trap of sufficient capacity to treat a volume of waste water discharged during peak trade hours. Its capacity shall not be less than 0.5 cu.m. The grease trap should be of such design and construction as to ensure effective removal of grease from entering the sewerage system and be easily accessible for cleaning and inspection.

⁴ If the absorption capacity of soil is not known, percolation test can be conducted at a nearby location of the existing soakaway pit with similar soil condition and characteristics. Details of the percolation test shall make reference to the ProPECC PN 5/93.

⁵ If the gravel or percolation media inside or underlying the soakaway pit is found to be unsuitable for the intended uses, consideration should be given to replace them with new one.

- c) Location of the STS is also important. Existing STS should not be used if it is:
 - i) Close to sensitive water bodies or structures (Reference could be made to the minimum clearance requirements for soakaway pit specified in Appendix D of EPD's "ProPECC PN5/93" or LandsD's "Drainage and Health Requirements for Village Type Houses", or otherwise be assessed by a professional third party to be suitably located for the intended uses)
 - ii) Located in unsuitable ground/areas (e.g. presence of bedrock, high groundwater table or prone to flooding causing overflow, poor absorption capacity of soil)
 - iii) Packed with other STSs, overloading the absorbing capacity of soil
 - iv) Not accessible (or restricted for access) preventing proper maintenance
 - v) Near streams, wells, retaining walls, etc., or beneath the house (Ref. para 24 (c) (i) of "Guidance Notes on Discharge From Village Houses")

2) Routine maintenance of STS

- a) Reference could be made to EPD's "Guidance Notes on Discharge From Village Houses" for guidelines on operation and maintenance of STSs
- b) Each STS must be inspected at least once every 6 months (more frequent if it is heavily used)
- c) Inspect STS immediately when
 - i) there is any flooding / overflow
 - i) foul smell becomes more noticeable
 - ii) toilet doesn't flush well or sink doesn't drain well
- d) Desludge STS when
 - i) thickness of sludge exceeds 30 cm (1 ft.) or 1/4 of overall water depth
 - ii) clogging of septic tank outlet pipe or the soakaway pit or soil is suspected
- e) Dispose of STS sludge properly
- f) Maintenance records of the STS shall be kept on site for inspection

3) Basic information required for the certification process

- a) Key plan showing whether the development is within a sewered area, flooding area, etc.
- b) Block plan showing the location of STS (the soakaway pit in particular) in relation to the surrounding water courses, wells, beaches, buildings, structures, etc. if applicable
- c) Estimation of the total amount of sewage / wastewater generated from the premises. (Estimation could make reference to EPD's "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" or other justified references applicable for the intended uses)
- d) Drainage plans and floor plans of the development to substantiate the following:
 - i) sewage / wastewater generated from lavatories and kitchen are properly connected to STS
 - ii) hydraulic loading is based on business operation / no. of persons allowed (for guesthouse)
- e) Details of septic tank and soakaway pit
- f) Results of leakage check
- g) Soil assessment to estimate loading / absorption capacity of soil

Annex 1 - Checklist on Checking the Existing Septic Tank and Soakaway Systems

Prerequisites

- The existing STS is to handle the sewage and wastewater arising from an existing OVH, which is:
 - i. located in one of the Countryside Villages as defined by CCO under EEB;
 - ii. constructed before the enactment of BO(ATNT)O, Cap.121 on 16 October 1987; and
 - iii. constructed of a height not more than 8.23m and with a roofed-over not exceeding 65.03m².
- The certification is for the purpose of guesthouse and / or food business licence application.
- There are genuine and insurmountable difficulties to construct a new STS for the purpose of food business and / or guesthouse licence application with written support by CCO.

STS condition

- STS is made with appropriate materials, constructed and finished as to be impervious
- STS is intact and without leakage and in good working order
- All wastewater discharge pipes of the premises are connected to the STS
- No overflow or by-pass pipe
- Rain / surface water not entering STS
- Inspection manhole(s) to be provided for the STS
- Dimension and configuration of the STS suitable for the intended uses
 - meets the requirement of Appendix D of "ProPECC PN5/93"
 - meets the requirement of "Drainage and Health Requirements for Village Type Houses"
 - assessed to be suitable for the intended uses

Capacity of STS

Estimated design capacity of STS = _____ m³

- For guesthouse
 - (A) Flowrate per capita: _____ m³/d
 - (B) No. of person accommodated (for guesthouse): _____ persons
- Estimated flowrate = (A) x (B) = _____ m³/d

- For food business
- Estimated flowrate: _____ m³/d
- Grease trap of suitable size is / will be installed under the sink or underground
- Calculated/Observed* absorption capacity of underlying soil of the soakaway pit is _____ m³/d (> total estimated flow of _____ m³/d) and is suitable for handling the estimated flow
- STS is of limited available capacity and restriction on the no. of persons to be accommodated (for guesthouse) is necessary with details as shown below:
- Limited available capacity of STS: _____ m³
- No. of persons allowed: _____ persons

Location of STS

- NOT close to sensitive water bodies or structures
- meets the minimum clearance requirements of Appendix D of “ProPECC PN5/93”
- meets the minimum clearance requirements of “Drainage and Health Requirements for Village Type Houses”
- assessed to be suitably located and suitable for the intended uses
- NOT located in unsuitable ground/areas (e.g. presence of bedrock, high groundwater table or prone to flooding causing overflow, poor absorption capacity of soil)
- NOT packed with other STSs, overloading the absorbing capacity of soil
- Accessible (and NOT restricted for access) for proper maintenance

Routine maintenance of STS

- A plan for maintenance and operation is in place to:
- Inspect STS at least once every 6 months (more frequent if it is heavily used)
 - Inspect STS immediately when
 - there is any flooding / overflow
 - foul smell becomes more noticeable
 - toilet doesn't flush well or sink doesn't drain well
 - Desludge STS when
 - thickness of sludge exceeds 30 cm (1 ft.) or 1/4 of overall water depth
 - clogging of septic tank outlet pipe or the soakaway pit or soil is suspected
 - Dispose of STS sludge properly
 - Keep maintenance records of the STS on site for inspection

Basic information required for the certification process

- Key plan showing whether the development is within a sewered area, flooding area, etc.

- Block plan showing the location of STS (the soakaway pit in particular) in relation to the surrounding water courses, wells, beaches, buildings, structures, etc. if applicable
- Estimation of the total amount of sewage / wastewater generated from the premises. (Estimation could make reference to EPD's "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" or other justified references applicable for the intended uses)
- Drainage plans and floor plans of the development to substantiate the following:
 - sewage and wastewater generated from the premises are properly connected to STS
 - hydraulic loading is based on business operation / no. of persons allowed (for guesthouse)
- Details of septic tank and soakaway pit
- Results of leakage check
- Soil assessment to estimate loading / absorption capacity/rate of soil and the soakaway pit
- Record / arrangement of desludging and disposal operation to demonstrate the proper maintenance of STS

**Certification of Existing Septic Tank and Soakaway Systems¹
for Guesthouse Licence Application with Using Old Village House in Countryside Areas**

Address of Site and Lot Number: _____

1. I _____ (name), am appointed by the owner / representative of the owner² of the above address as the authorized person to ascertain the existing septic tank and soakaway systems for the above address (the STS) being in good working condition and suitable for handling the sewage and wastewater arising from the intended uses in the premises.

2. I have conducted all necessary on-site assessments and inspections to the STS on _____ (date). I confirm the STS is in good conditions and its capacity, location and routine maintenance as follows³:

(I) Capacity

(a) The capacity of the STS is _____ m³.

(b) The estimated flowrate per capita is _____ m³/day. ... (A)

The max. number of occupants in the subject guesthouse is _____ nos. ... (B)

The estimated max. flowrate (loading) for the guesthouse is (A) x (B) = _____ m³/day.

(Note: The STS shall be properly maintained to cater for the estimated flow rate above. In case where the STS cannot function in its full capacity, the max. number of occupants in the guesthouse shall be reduced accordingly, such that the STS is always sufficient to cater for the usage in the premises.)

(c) The absorption capacity of underlying soil of the STS is suitable for handling the estimated flow.

(d) The STS is operating without any overflow or by-pass pipe.

(II) Location

(a) The STS is separated from sensitive water bodies and structures according to the minimum clearance requirements stipulated under Appendix D of ProPECC PN 5/93.

(b) The STS is located in suitable ground / areas and is suitable for the intended use.

(c) The STS is at sufficient distance from other STSs in accordance with my estimation on loading / absorption capacity of soil surrounding the soakaway system.

(III) Maintenance

(a) The STS is accessible through public areas for future maintenance.

(b) A maintenance plan is prepared. It specifies that:

(i) the STS will be inspected at least once every _____ months

(ii) the STS will be desludged when thickness of sludge exceeds 30cm (1 ft.) or 1/4 of overall water depth; or clogging of septic tank outlet pipe or the soakaway pit or soil is suspected.

(iii) the STS sludge will be disposed properly.

(iv) the STS will be inspected immediately when there is flooding / overflow; foul smell becomes noticeable; or toilets / sinks do not discharge well.

(c) The maintenance records will be kept on site for inspection.

3. I attach herewith the block plans showing the location of the STS, analysis for the estimated amount of sewage / wastewater generated from the premises, layout plans and drainage plans of the premise, details of the STS, result of leakage check and soil infiltration/permeability/absorption assessment to substantiate the estimated loading / absorption capacity of the soil surrounding the soakaway system for record purpose.

4. I confirm that the STS shall be properly operated and maintained such that it would not cause any environmental pollution or nuisance.

Signature

Date

Name in English :
Certificate of Registration No. : AP () /
Date of Expiry of Registration :
Contact Number :

¹ The Certification should completed in accordance with the "Guideline on Checking of Existing Septic Tank and Soakaway System".

² Delete as appropriate

³ All boxes should be ticked to demonstrate that the STS is suitable for the intended use.

**Certification of Existing Septic Tank and Soakaway Systems¹
for Food Business Licence Application with Using Old Village House in Countryside Areas**

Address of Site and Lot Number: _____

1. I _____ (name), am appointed by the owner / representative of the owner² of the above address as the authorized person to ascertain the existing septic tank and soakaway systems for the above address (the STS) being in good working condition and suitable for handling the sewage and wastewater arising from the intended uses in the premises.

2. I have conducted all necessary on-site assessments and inspections to the STS on _____ (date). I confirm the STS is in good conditions and its capacity, location and routine maintenance as follows³:

(I) Capacity

- (a) The capacity of the STS is _____ m³.
- (b) The estimated max. flowrate (loading) of the STS is _____ m³/day.
- (c) Grease trap of suitable size will be installed under the sink or underground to pre-treat flow from kitchen.
- (d) The absorption capacity of underlying soil of the STS is suitable for handling the estimated flow.
- (e) The STS is operating without any overflow or by-pass pipe.

(II) Location

- (a) The STS is separated from sensitive water bodies and structures according to the minimum clearance requirements stipulated under Appendix D of ProPECC PN 5/93.
- (b) The STS is located in suitable ground / areas and is suitable for the intended use.
- (c) The STS is at sufficient distances from other STSs in accordance with my estimation on loading / absorption capacity of soil surrounding the soakaway system.

(III) Maintenance

- (a) The STS is accessible through public areas for future maintenance.
- (b) A maintenance plan is prepared. It specifies that:
 - (i) the STS will be inspected at least once every _____ months
 - (ii) the STS will be desludged when thickness of sludge exceeds 30cm (1 ft.) or 1/4 of overall water depth; or clogging of septic tank outlet pipe or the soakaway pit or soil is suspected.
 - (iii) the STS sludge will be disposed properly.
 - (iv) the STS will be inspected immediately when there is flooding / overflow; foul smell becomes noticeable; or toilets / sinks do not discharge well.
- (c) The maintenance records will be kept on site for inspection.

3. I attach herewith the block plans showing the location of the STS, analysis for the estimated amount of sewage / wastewater generated from the premises, layout plans and drainage plans of the premise, details of the STS, result of leakage check and soil infiltration/permeability/absorption assessment to substantiate the estimated loading / absorption capacity of the soil surrounding the soakaway system for record purpose.

4. I confirm that the STS shall be properly operated and maintained such that it would not cause any environmental pollution or nuisance.

	_____ Signature	_____ Date
Name in English	:	
Certificate of Registration No.	:	AP () /
Date of Expiry of Registration	:	
Contact Number	:	

¹ The Certification should be completed in accordance with the "Guideline on Checking of Existing Septic Tank and Soakaway System".

² Delete as appropriate.

³ All boxes should be ticked to demonstrate that the STS is suitable for the intended use.