1. PURPOSE
This procedure is aimed to manage the steps in One Stop Shop Sanitation Services, especially in receiving order, materials preparation, construction, until handover to customers.

This is the second part of a complete SOP files which are aimed as references used by the ENTREPRENEUR (including Sanitarian who wants to be or are working as an entrepreneur in sanitation business), which consist of several SOP documents as follow:

**Business Process Map of One Stop Shop Sanitation Services** as a simple visualization of the whole process flow of this sanitation business (filename:@2 Business Process Map One Stop Shop Sanitation.pdf)

The first part of SOP that explains procedures of one-stop shop sanitation services from developing social map, triggering and product introduction until order processing (filename:01_SOP one shop sanitation social map until order.docx).

The second part of SOP that explains procedures of one-stop shop sanitation services from receiving order, materials preparation, construction, until handover (filename:02_SOP one shop sanitation WSP construction.docx).

The third part of SOP that explains procedures of one-stop shop sanitation services on how an entrepreneur and the customers could select different type of payment methods until the final payment process (filename:03_SOP one shop sanitation WSP payment.docx).

The first, second, and third part of SOP are part of the daily business cycle while the fourth part of SOP is the process that need to be done prior to starting the business.

The fourth part of SOP that explains procedures of one-stop shop sanitation services for a new entrepreneur to prepare the sanitation business. This SOP is a prerequisite for starting a new business, which means in term of value stream this SOP is not part of the daily Business Process Map cycle (filename: 04_SOP Business Plan.docx).

As an SOP, in general these documents are considered the best the process that are performed today, hence these documents should be revised and updated to keep up with the latest practices and technology.

2. SCOPE
This procedure covers materials preparation, mold production/procurement, excavation, mold fitting, casting, toilet installation, handover and quality inspection of
constructed toilet activities which is a **second part** of the whole SOP documents related to sanitation business.

3. **DEFINITION**

3.1. **Mason/Worker** is the executor who constructs the healthy toilet according to the type ordered by Customer based on Entrepreneur’s instruction.

3.2. **Entrepreneur** is business actor (private party) who owns a business in sanitation / healthy toilet sector.

3.3. **Enterprise** is an entity that becomes the entrepreneur’s business organization in managing the one stop shop sanitation service, which also includes marketing/sales officer, administration officer and the people who prepares the materials/ingredients.

3.4. **Cadre/Trained Agent** is the people in the hamlet who becomes the spearhead in giving information, service and people empowerment and directly interacts with the people either in face to face or using other media.

3.5. **Sanitarian** is a Health Center staff who is in charge for counseling and socialization of health and environmental hygiene to public within a district.

3.6. **Customer** is a resident or public who orders a toilet creation

4. **GENERAL PROVISIONS**

4.1. Healthy toilet criteria based on Ministry of Health are as follow:

   a. Not contaminating water
   b. Not contaminating soil surface
   c. Free from insects
   d. Not causing odor
   e. Safe and comfortable to be used by the user
   f. Easy to clean and not causing annoyance to the user
   g. Not evoking irreverent view

4.2. Healthy Toilet consists of 3 parts as follow:

   a. Closet/latrine
   b. Septic Tank
   c. Infiltration/Retention part

4.3. Recommended septic tank construction is directly casted septic tank, not multiple concrete built/connected as on septic tank (reducing the risk of leakage) that is specified below:
Picture 1: Healthy Toilet Construction Isometric picture

Picture 2: Top View of Healthy Toilet Construction
4.4. To prevent pollution to the water source, then the distance of toilet construction with the water source must be at least 10 meters.

4.5. Healthy toilet maintenance techniques include:
   a. Toilet floor should always be clean and dry
   b. No puddle around the toilet
   c. No garbage strewn at home
   d. Toilet house is in good condition
   e. No flies, rats and cockroaches
   f. Cleaning tools are available (brush, broom and bucket)
   g. If there are damaged parts, they are immediately repaired/replace

4.6. There are 4 types of toilet package that can be constructed, including:
   Type 1 consists of: 1 closet, 2 septic tank cast hole with diameter 80 cm and height 150 cm, as well as 1 infiltration cast hole with diameter 80 cm and height 50 cm. Notes: Paralon is an Indonesian common term for plastic/PVC pipe.

Type 2 consists of: 1 closet, 2 septic tank cast hole with diameter 80 cm and height 100 cm, as well as 1 infiltration cast hole with diameter 80 cm and height 50 cm.
Type 3 consists of 1 closet, 1 septic tank cast hole with diameter 80 cm and height 150 cm, as well as 1 infiltration cast hole with diameter 80 cm and height 50 cm.

Type 4 consists of: 1 closet, 1 septic tank cast hole with diameter 80 cm and height 100 cm, as well as 1 infiltration cast hole with diameter 80 cm and height 50 cm.
5. INDICATORS AND SUCCESS CRITERIA

5.1. Toilet construction lead-time is 5 days for rocky soil/land, and 2 days for soft-type of soil/land.

5.2. Toilet quality that complies the health, comfort and safety standard as part of quality inspection/assurance during handover.

5.3. Pricing is depends on the local price of materials (but it is important to always provide margin for the entrepreneur).

6. PROCEDURE CONTENTS

6.1. Tools and Materials Preparation

6.1.1. Mason must prepare all tools and materials required for toilet construction.

6.1.2. Tools to be prepared are as in Picture 4:

![Picture 4: Required tools]
Notes:

1. Hoe
2. Sekrok (local term)
3. Shovel
4. Crowbar
5. Meter
6. Bethel Cast
7. Cetok (local term)
8. Hammer
9. Kasutan (local term)
10. Water Pas
11. Bucket

6.1.3. Materials required for toilet construction includes:
1. Casting sands (sands with many small stones)
2. Cement
3. Closet
4. Paralon 3” (PVC pipe)
5. Paralon 2½” / 2” (PVC pipe)
6. Paralon 1¼” (PVC pipe)
7. Knee 3”
8. T 2½” / 2”
9. T 1¼”
10. Casting iron

6.1.4 To make the closet holder, septic tank and infiltration, molds with the following specifications are required:

1. Mold for closet holder
Picture 5: Closet Holder Mold

This mold for closet holder consists of the outer part of the mold and the inner part.

Outer part closet holder mold

Picture 6: Image of Outer Part Closet Holder Mold
Inner part of the closet holder mold, with detailed specifications that can be seen from various side:

Picture 7.

Picture 8: Top View
Picture 9: Bottom View

Lebar = 5 cm, tebal = 3 cm
2. Mold for Concrete Buis (Septic Tank and Infiltration). Buis a a concrete cylinder that usually used in drainage construction.

2A. Mold 1 Concrete Buis set 1 Meter

**Picture 10.**
Picture 11: Image of Inner part of Mold (1/3 Part View)

Tebal Penguat Cekakan = Tebal Kayu = 6 Cm

Tinggi = 110

Sisa Lebar Dahur = 5.5 Cm
(6 Cm - 0.5 Cm - 5.5 Cm)

Tebal Biir = 0.4 Cm
Berat ≤ @ 10 kg
Bahan : Fiber glass
Picture 12: Detailed Wooden Part Mold Specifications

Detail 3 Kayu: Lebar Kayu Dalam 5 Cm dan Lebar Kayu Luar 4.5 Cm

- LEBAR KAYU LUAR (LKL) : 4.5 Cm
- LEBAR KAYU DALAM (LKD) : 5 Cm
- TEBAL KAYU (TK): 6 Cm
Picture 13: Wooden Part Mold Details

Detail 3 Kayu: Lebar Kayu Dalam 5 Cm dan Lebar Kayu Luar 4.5 Cm,
Tebal Kayu 6 Cm dan Posisi Mur Baut (Ø 8mm X 10 Cm)

Kayu untuk Bagian Setiap Lingkaran lingkaran (L):

Mur Baut Bag. Atas

Mur Baut Bag. Tengah

Mur Baut Bag. Bawah

Sisa Lebar Dalam = 5,5 Cm
(6 Cm - 0,5 Cm = 5,5 Cm)
2B. Mold 1 Concrete Buis set 0.5 Meter

Picture 14.

Picture 15: Inner Part (1/3Part View)
Picture 16: Detailed Image

KAYU PENYEKAT & PENGUNCW MUR-BAUT
(Detil lihat Gambar 02.3 A&B)
Tinggi = 50 Cm
Tebal = 6 Cm
Lebar Kayu Dalam (LKD) = 5 Cm &
Lebar Kayu Luar (LKL) = 4.5 Cm
Berat = 1 Kg
Bahan : 3 Buah Kayu

Mur Baut Ø = 0.8 Cm
Panjang L = 8 Cm
3. Concrete buis cap mold
   Picture 17: Concrete BuisCap

![Concrete BuisCap](image1)

Picture 18: Concrete Buis Cap Top View

![Concrete Buis Cap Top View](image2)
6.1.5. Sand cement mixture composition that is commonly used is:
Concrete buis 6 : 1
Cover/deck 4 : 1

6.2. Closet and septic tank distance measurement
6.2.1. Mason (worker) measures the location of closet and septic tank to ensure the location of each holes and especially the excavation location.

6.2.2. The measurement refers to selected toilet type, in which for the most complete type the measurement is adjusted with the following top view:

Picture 19: Reference for Measurement

6.2.3. The parts that are specified as septic tank and infiltration are followed up with excavation process.

6.3. Toilet Construction Activity
6.3.1. Mason performs the land excavation for septic tank and infiltration mold placement based on septic tank type that is going to be constructed.

6.3.2. Perform casting of the bottom of septic tank if the condition of soil is dry.
Picture 20: Hole Excavation and Casting

**TAHAP:**
1. PENGOLAHAN LOBANG
2. PENGECORAN BAGIAN BAWAH

Picture 21: Excavated Hole

Picture 22: Hole with Mold Fitted-in and Casted at the Bottom
6.3.3. Perform mold installation in the excavated hole
6.3.4. Perform casting of the septic tank walls

**Picture 23: Perform Casting of Wall Sections**

![Diagram of casting of wall sections]

**Picture 24: Casting Process**

![Image of casting process]

6.3.5. Perform mold release if the molding result starts drying.

**Picture 25: Mold Release Process**

![Image of mold release process]
The bottom part of the infiltration must be designed with:
   Outer diameter: 94 cm
   Inner diameter: 80 cm
   Thickness: 0.07 m.

6.3.6. Depth of infiltration should not more than 0.75 m.
6.3.7. Meanwhile, to accelerate the infiltration process, the depth of the concrete ring to be used is 0.5 m without bottom cap plus a ground hole at the bottom with a depth of 0.25 m and filled with gravel and fibers.

Image26: Complete Septic Tank Scheme

6.3.8. Install pipe PVC for septic tank and closet.
6.3.9. Pipe to be used to connect the closet and septic tank 1 and septic tank 2 has diameter of 3 inches and 30 cm of length.
6.3.10. Pipe to be used to connect septic tank 2 with infiltration has diameter 2.5 inches and has length of pipe minimum 4m.
6.3.11. All pipes are installed with 2% tilt (SNI: 03-2398-2002). It means for each 100 cm long, the tilt is 2 cm.
6.3.12. Concrete buis cap installation for septic tank

Picture 27: Tilt Scheme for Pipe Installation

Picture 28: Photo of Pipe Installation

Picture 29: Photo of Cap Molding Process
Picture 30: Photo of Installed Cap

![Photo of Installed Cap](image)

Picture 31: Cap Installation Diagram

![Cap Installation Diagram](image)
6.3.13. Creation of air vent pipe on the septic tank cap
6.3.14. Air vent is needed for the following functionalities:
   a. To drain the air pressure so that the air pressure inside the septic tank can come out
6.3.15. The size of air vent pipe to be used has diameter 50 mm (2 inches), with minimum height 25 cm from the ground (refers to SNI: 03-2398-2002).
6.3.16. Air vent is placed on the second septic tank with consideration to give life to the aerobic bacteria.

Picture 33: Vent Pipe

6.3.17. Create mold for closet holder
6.3.18. Doing foundry in toilet seat.
6.3.19. Perform closet holder release if the molding result starts drying
6.3.20. Place the closet in the prepared mold
Picture 34: Closet Holder Creation/Molding Process

Picture 35: Closet Holder Creation Scheme

Picture 36: Photo of Installed Closed on the Holder
6.4.  Finished toilet handover from Entrepreneur to Customer  
6.4.1.  After the mason finishes the toilet construction completely based on 
the order, then the inspection is performed by entrepreneur or mason 
with the customer.
6.4.2.  If Customer is satisfied with the result, then entrepreneur prepares 
Handover Form to be filled by Customer.
6.4.3.  If Customer is not satisfied yet with the result, then the customer and 
entrepreneur make an agreement for refinement.
6.4.4.  APPSANI can perform quality inspection to ensure the standard and 
quality of the toilet.

7.  ROLES AND RESPONSIBILITY
7.1  Entrepreneur  
7.1.1.  Entrepreneur serves as the healthy toilet construction service provider by 
ensuring all processes ranging from receiving order, toilet construction, 
handover, quality inspection to payment.
7.1.2.  Entrepreneur coordinates with Sanitation Committee to follow up triggering 
event results, evaluates the Social Map and develops business plan to 
improve access to healthy toilet profitably.
7.1.3.  Entrepreneur manages team in his enterprise to ensure order recording, 
construction scheduling, mason management, materials procurement and 
dead line agreement with customer go well.
7.1.4  Entrepreneur ensures tools and mold are available.
7.1.5  Entrepreneur is obliged to always improve process, product and service so 
that s/he can deliver better, healthier, faster and more affordable service 
while keep generating profits to her company.

7.2.  Mason  
7.2.1  Mason is obliged to understand the process and procedure in healthy toilet 
construction according to APPSANI standard.
7.2.2  Mason is obliged to execute and follow toilet construction SOP so that the 
result is on time and has good quality.

7.3.  Cadre/Trained Agent
7.3.1.  Cadre creates Social Map to locate the name of households, location and 
number of house/household with and without healthy toilet in a simple 
map. The existing data also determines target residents for Triggering.
7.3.2.  Cadre together with sanitarian and entrepreneur schedule and execute the 
Triggering event.
7.3.3.  Cadre follows up triggering event by recording residents who already have 
healthy toilet and residents who want to create healthy toilet (order).
7.3.4. Cadre submits these data and order and coordinates with the Entrepreneur in registration, initial payment, toilet construction, handover, quality inspection of work result and final payment.

7.3.6. Specifically for payment method by regular social gathering (*arisan*), cadre also serves to work together with Sanitation Committee to manage the social gathering events that are leveraged for toilet construction.

8. RELATED DOCUMENTS
8.1. Toilet Work Plan Form
8.2. Handover Form

Attachment 1 : Toilet Work Plan Form

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Address</th>
<th>Type to Order</th>
<th>Number of Users</th>
<th>Order Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Attachment 2: Handover Form**

<table>
<thead>
<tr>
<th>FORM</th>
<th>Number</th>
<th>Revision</th>
<th>FR-APPSANI-006</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANDOVER</td>
<td></td>
<td></td>
<td>00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Date</td>
<td>1-Nov-13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Page</td>
<td>1 of 1</td>
</tr>
</tbody>
</table>

ENCLOSED: ........................................................................... ON ........................................

A TOILET ................................(UNIT), WITH TYPE ..............................................................

THUS HANDOVER MINUTES IS CREATED FOR PROPER USE

..............................................DATE:...........................................

RECEIVED BY

( )

ENCLOSED BY

( )