

Model Terms of Reference:
Production of film on Dos & Don'ts in
construction of a septic tank at the
household level

Location..... India

Issued on: Date....

TECHNICAL SUPPORT UNIT:

iihsTM

INDIAN INSTITUTE FOR
HUMAN SETTLEMENTS

IN ASSOCIATION WITH:



Keystone

CD Consortium for
DEWATS
Dissemination
Society

TERMS OF REFERENCE (TOR)

Production of film on Dos & Don'ts in construction of a septic tank at the household level

- a. One film of 10 minutes' duration shall be made for ULB frontline workers, contractors, masons and households.
- b. The film shall use both real characters and animation.

1. Background

Include relevant information which is necessary.

[MENTION ULB NAME] wishes to commission one 10-minutes film on the 'Do's & Don'ts of Human Excreta Management at the Household level' to create awareness among the, ULB frontline workers, masons, contractors and households on the do's & don'ts in the construction of a proper septic tank. It is important to note here that 'Septic Tank' is an engineering term for a technology that achieves treatment of fecal matter to a safe degree. Improper design and construction of a septic tank renders it inefficient and thus incapable of achieving the desired outcome.

2. Objectives

The objectives of the films are:

- i. Emphasizing and including the importance of "proper construction" of a septic tank in the discussion on household sanitation.
- ii. Informing and educating the viewers on the proper design, structure (chambers, inlet, outlet, location), size and maintenance (regular desludging) of septic tanks.
- iii. Apprising the householders, builders, masons and the ULB frontline workers on the amendments in building rules.

3. Approach

The film shall convey the core message to the target segments through an appropriate mix of animation and live characters.

The film will be around xx minutes. It will combine both animation and live characters to convey the different messages needed to achieve objective (i) above. The construction of septic tank, will be made using animations to exhibit the dimensions, chambers, pipe connections, outlet, connecting with soak away pit etc. Live characters may specify the importance of the septic tank, its functions, accessibility, and reinforce the messages

conveyed through the animation. Common myths and misunderstandings about the construction process could also be highlighted and dealt with.

For ULB frontline workers, masons, and contractor's emphasis shall be placed on:

- i. Importance of septic tank
- ii. Functions of septic tank
- iii. Do's & Don'ts in the building structure, size, materials to be used etc.,
- iv. Long-term health impacts in terms of malnutrition and stunting

For households, emphasis shall be placed on:

- v. Economic impacts of unsafe sanitation
- vi. Valorizing sanitary workers etc.

The dimension of septic tank for different size of houses are given in the table below

Table (1): Recommended sizes of septic tank for 20 users					
No	No of User Outputs	Length (m)	Breath (m)	Liquid Depth (cleaning interval of	
				1 year (m)	2 year (m)
1	5	1.5	0.75	1.0	1.05
2	10	2.0	0.90	1.0	1.40
3	15	2.0	0.90	1.0	2.00
4	20	2.3	1.10	1.3	1.80

Source: Bureau of Indian standards of septic tank, 1993

4. Schedule of Work and Deliverables: The films shall be made according to the following schedule:

Table (2): Schedule of work and deliverables				
No	Outputs	Elapsed Time from Start	Date of Start	Date of Deliverable
1	Work on pre-shoot script			
2	Approval of Pre-shoot Script			
3	Production work (shooting the film)			

4	Rough Cut for the Film			
Table (2): Schedule of work and deliverables				
No	Outputs	Elapsed Time from Start	Date of Start	Date of Deliverable
5	Delivery of final			

5. Film Making Team

The work shall be carried out by a qualified team of filmmakers with:

- i. At least 10 years of experience in making animation films on development projects.
- ii. Understanding of social issues and experience in making animation films on social issues.
- iii. In-house film production unit which can work within short schedules and comply with strict deadlines.
- iv. Fluency in written and spoken Tamil and English

6. Reporting and coordination

The film producing company will coordinate with [MENTION ULB NAME AND CONTACT DETAILS]; and identified nodal person in the [MENTION ULB NAME].

7. List of Resources to be provided by [MENTION ULB NAME]

Provide list of resources

8. Suggested Story line: The story line for the film is outlined below

1. Act 1 Sc. 1: Current status

Provide data and facts on sanitation in the ULB/District/State

2. Act 1 Sc. 2: People perceptions

- a. Septic tanks are out of sight and are out of mind. While building a house, somehow the toilet-room and its fittings get importance but not the septic tanks.
- b. Masons, contractors, and households lack information about proper septic tank and its functions.
- c. Septic tanks are just seen as storage units. People have no idea about unsafe containment, poor quality of septic tank design, construction not complying with standards, and its direct and indirect health impact.

3. Act 2 Sc. 1: Informing the target audience about septic tank construction: Size, location, materials to be used, waste water disposal, soak away pits etc.,

- a. Introducing the Do's & Don'ts of septic tank construction in different stages viz., before construction, during construction and after construction.
 - i. The elements of this would need to cover: design of structure, size, chambers, inlet and outlet, access for desludging, location of soakaway or trench-field design and construction. Then if time permits touch on 2-3 common myths and work-arounds in difficult areas, e.g. wet areas – soak-away will not work, so regular desludging is needed.
- b. Septic tank should not be located in swampy areas or areas prone to flooding.
- c. Septic tank in the areas prone to flooding should not be connected to a soak away, it should be always water tight and desludged frequently
- d. It should also be accessible for cleaning and desludging with two covers situated on top of the two chambers.
- e. Septic tank is a water tight system; the side walls and floor should be made of water impermeable materials.
- f. Do not use porous materials for constructing walls or floors of septic tanks. Plaster all the sides.
- g. Septic tanks shall have a minimum width of 750 mm, a minimum depth of 1 m below the water level and a minimum liquid capacity of 1 m.
- h. The length of tanks shall be 2 to 4 times the width

Table (1) Recommended size of Septic tank up to 20 users				
No of Users	Length (m)	Breadth (m)	Liquid depth (m) (Cleaning interval of)	
			2 years	3 years
5	1.5	0.75	1.0	1.05
10	2.0	0.95	1.0	1.40
15	2.0	0.90	1.0	2.00
20	2.3	1.10	1.0	1.80
20	2.3	1.10	1.3	1.80

Source: CPHEEO manual,

4. **Act 2 Sc. 2: Septic tank and Do's & Don't**

- a. Septic tanks can partly treat wastewater. Therefore, under no circumstances shall effluent from a septic tank be allowed into an open channel drain or body of water without adequate secondary treatment.
- b. The effluent from septic tank is to be treated using a soak away.
- c. Soak away shall be built in distance from drinking water sources such as tube wells and dug wells:
 - i. where the height between the bottom of the soak away and the maximum ground water level throughout the year is 2 m and more, soak away can be located at a minimum distance of 3 m from the drinking water sources.
 - ii. Where the height between the bottom of the soak away and the maximum ground water level throughout the year is less than 2 m soak away can be located at a minimum distance of 10 m from the drinking water sources.
- d. Description about constructing soak away and materials to be used. Materials and dimension. In wet/swampy/water-logged area this is not possible. So cap outlet and desludge regularly
- e. Explaining the do-able solution via improvements in septic tank construction, regular septic-tank cleaning, safe conveyance and handling of the fecal sludge, treatment and safe disposal of the fecal sludge – in other words, addressing the full cycle of sanitation.
 - i. Septic tank should have two chambers and the outlet should be connected to a soak away pit.
 - ii. The size of the septic tank should be proportionate to the number of members in the household, and it should not be oversized or undersized.
 - a. where the height between the bottom of the soak away and the maximum ground water level throughout the year is 2 m and more, soak away can be located at a minimum distance of 3 m from the drinking water sources.
 - b. where the height between the bottom of the soak away and the maximum ground water level throughout the year is less than 2 m soak away can be located at a minimum distance of 10 m from the drinking water sources.
 - iii. Septic tanks should be built using bricks / concrete and not with porous materials, to prevent leakages. iv. A properly built septic tank is essential for complete decomposition and to mineralise the waste discharged.

- v. Septic tanks should be accessible. No solid structure should be built above the septic tank.
- f. Maintenance of Septic tanks is essential for effective treatment
 - i. Septic tanks need to be inspected regularly.
 - ii. An unpleasant odour, growth of algae is clear proof of leakage or over flow.
 - iii. Deteriorating septic tanks systems are expensive to repair or replace. Poor maintenance is a common cause for early system failures
- g. Regular de sludging
 - i. Regular desludging is essential for effective functioning of the septic tank
 - ii. Regular desludging helps your septic tank last longer and work to its full capacity. Mechanised collection is important.
 - iii. People involved should use proper equipment's with safety gears
 - iv. Septic tank should be emptied only through registered sludge operators.
 - v. Manual desludging shall be avoided
 - vi. Sludge should be disposed in the designated STP's / decanting centers and should not be drained into farm lands or water bodies
 - vii. Sludge should be disposed in the designated STPs / decanting centers and should not be drained into farm lands or water bodies
 - viii. Presence of household members during emptying is important to ensure that the sludge is removed properly, and without causing disturbances to the structure
 - ix. Respect who do the desludging. They are our health providers
 - x. The waste water should be treated before use for farm lands
- h. Emphasizing on the Do's & Don'ts:
 - i. The need for water-seal to make the toilet sanitary in the case of pour-flush or cistern-flush toilets
 - ii. Requirements of septic tank:
 - iii. Minimum size and dimensions (L:W:D) for different numbers of users
 - iv. Water tightness of floor and sidewalls of septic tank
 - v. Provision of access for cleaning/emptying septic tank
 - vi. Connect to soak-away: Need, Design and Porous nature
 - vii. Location and distance of soak away from drinking water source and structure

5. Act 3 Sc 1: Informing about the amendments made in municipal building regulation.

The below suggested change has been incorporated in the application and the application shall capture the following information:

- i. Re-state number of toilets to link plumbing and containment needs and provisions
- ii. Sanitary toilets (Yes or No): Availability of S/P trap with seal
- iii. Toilet pan outlet connected to the type of sub-surface structure (Choose):
 - a. Pit
 - b. Septic tank
 - c. Chamber connected to UGD
 - d. Others (specify)
- iv. Building plan with cross section of toilet pan outlet connection to sub-surface structure (Yes or No)
- v. Building plan showing provision for access to clean and/or desludge sub-surface structure (Yes or No)

6. Act 3 Sc 2: Emphasising on the Changes in the Inspection

Process:

To make the process of building construction inspection and completion certification more manageable, the following are suggested:

- i. The applicant photographs and geo-tags (longitude and latitude) the containment structure being constructed, showing:
 - a. Cleaning and/ or desludging access: Open manhole and chamber top view
 - b. In areas covered by UGSS, connection to UGSS
 - c. In case of septic tank, connection of septic tank outlet to soakaway structure
- ii. The applicant has to take photographs as mentioned above in two stages:
 - a. Under-construction stage, and submit the digital copy of the photograph through WhatsApp
 - b. After construction completion and keep it available for inspection during site visits of Competent Authority and for submission for completion certification

7. Act 4 Sc 1: Reinforcing the messages

- a. The technical aspects in the construction of septic tank and soak away need to be shown in the form of animation to help masons, contractors and households understand it better. The measurement, length, breath, dimensions, chamber, pipe connection etc.,

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- b. Septic tank construction and upgradation should be emphasised upon. Sanitation as a topic at the household level should be normalized and messages related to sanitary and insanitary toilets should be communicated.
 - c. Valorising the sanitary workers: They are invisible although in plain sight. They have to be repositioned as the vanguard, frontline, soldiers at the borders of the state of Health.