


Considerations for *Toilet & Septic tank* Construction

pas performance assessment system

CEPT University

Structure of presentation

- **Toilet construction**
  - *Where to place a toilet*
  - *Size of toilet*
  - *Materials for toilet construction*
  - *Other design aspects of toilet construction*

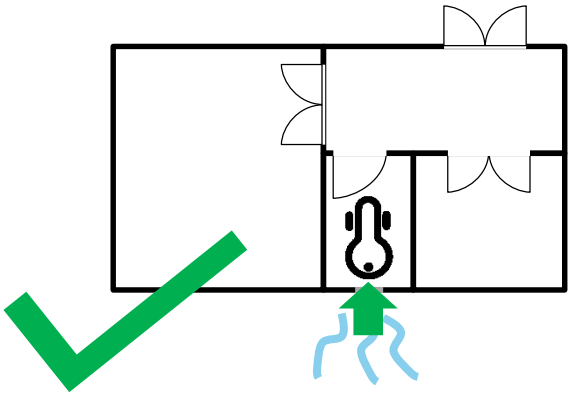
- **Septic tank construction**
  - *Where to place a septic tank*
  - *Size of septic tank*
  - *Materials for septic tank construction*
  - *Other design aspects of septic tank construction*
    - *Base of septic tank*
    - *Inlet and out levels*
    - *Provision of ventilation pipe*

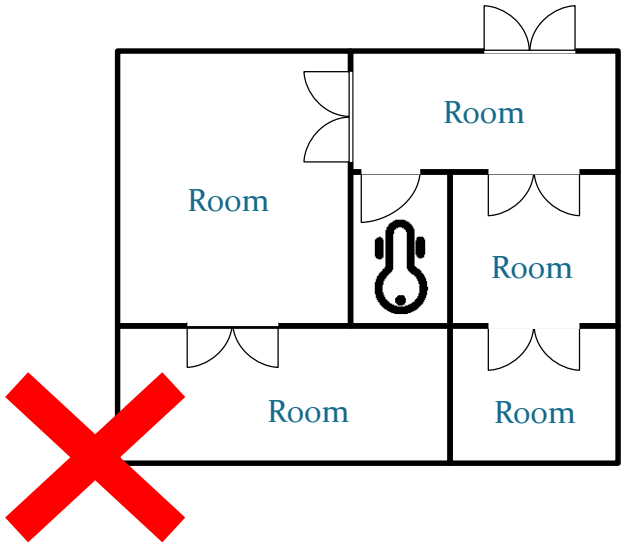
- **Standard design of toilet and septic tank**

Toilet Construction . . .

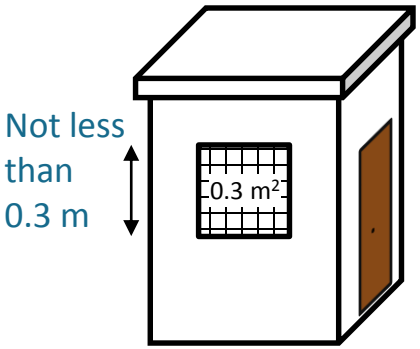
Where to place a toilet . . .

At least one wall open to fresh air

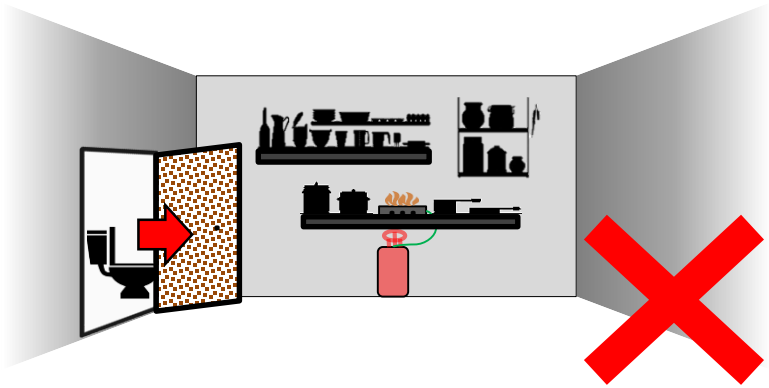




Window / ventilator

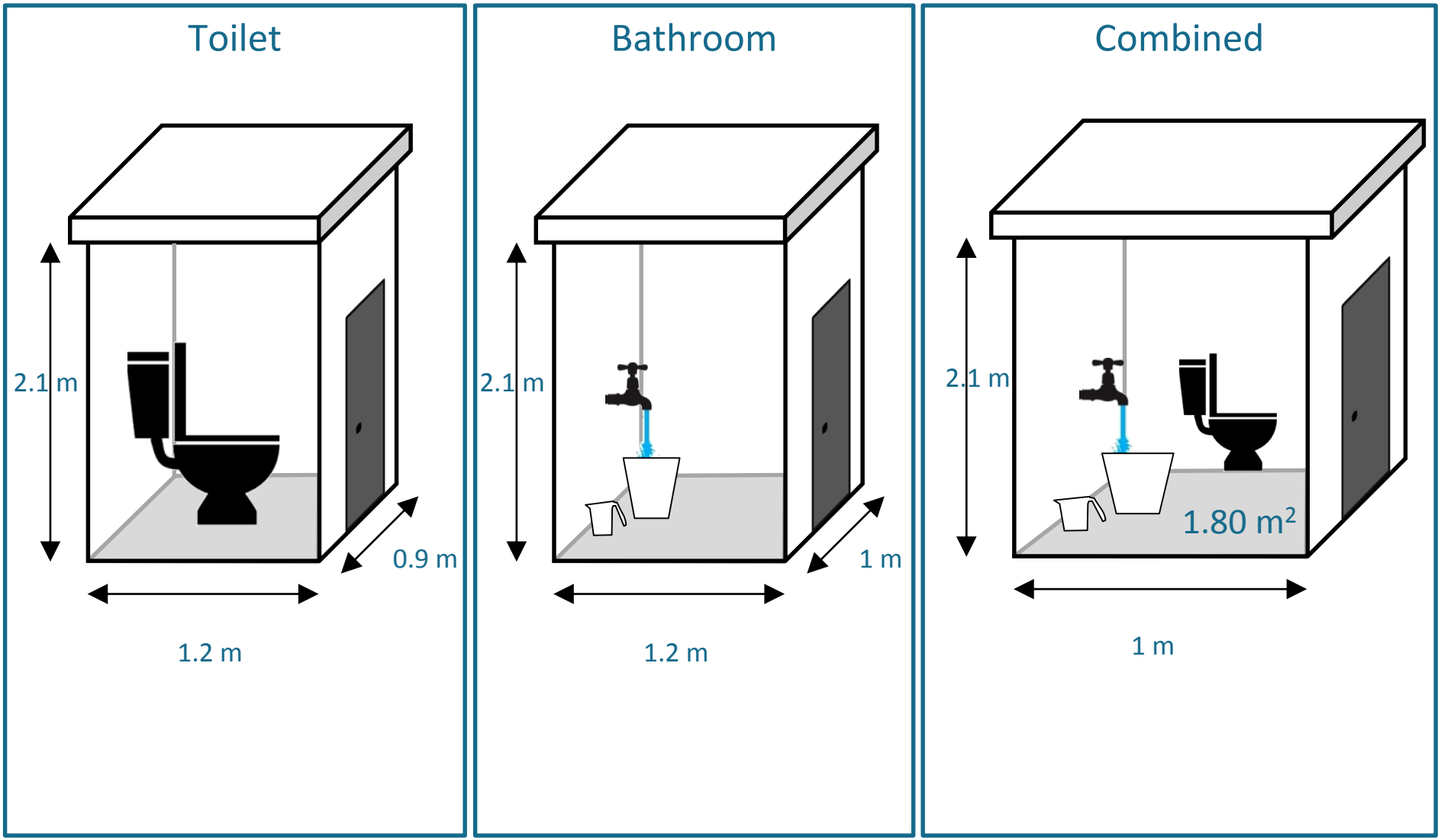


Should not open into kitchen



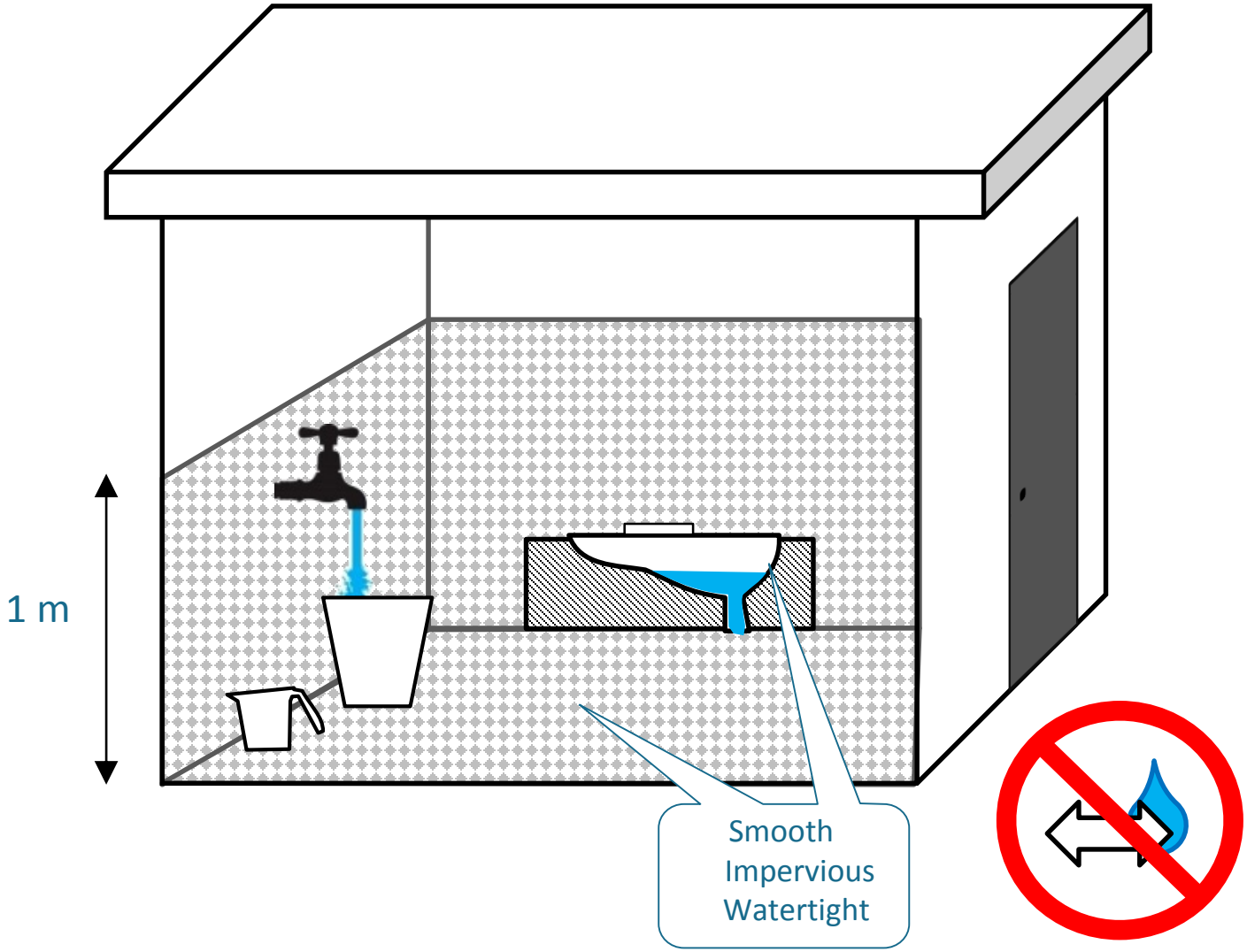
Siurce: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Minimum Size of toilet. . .



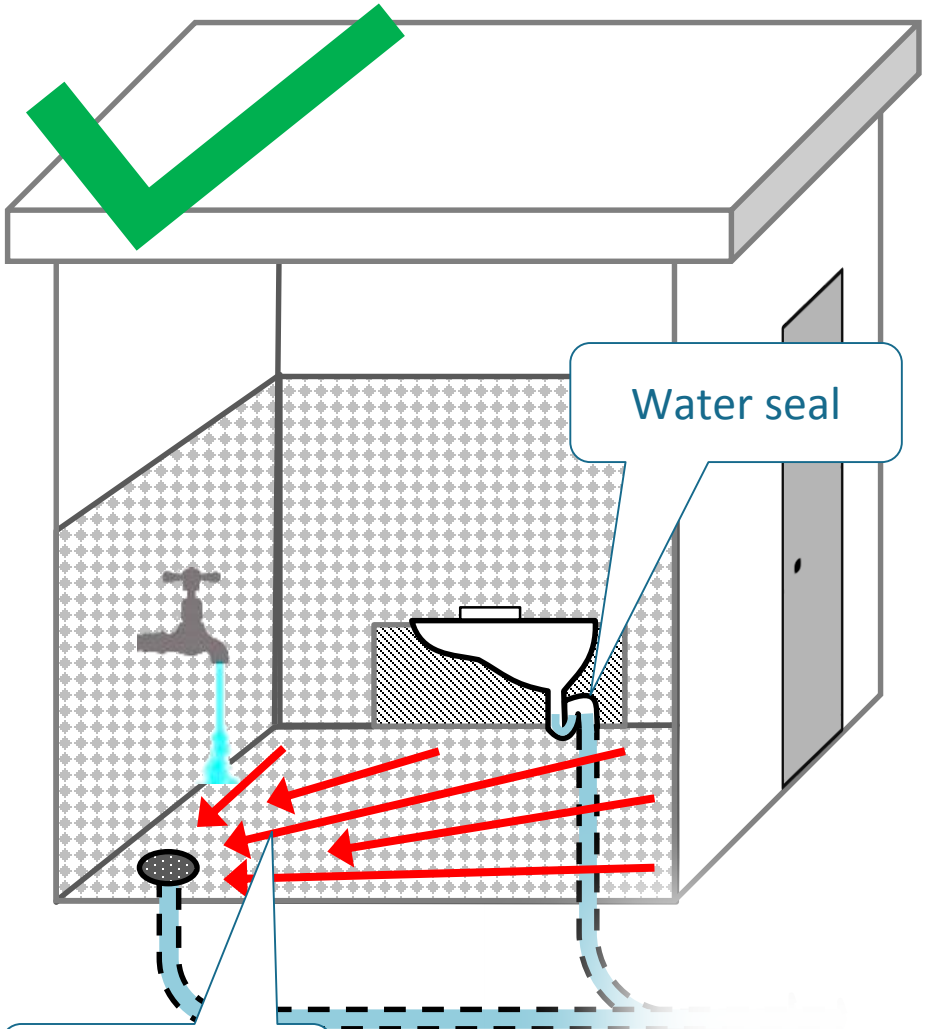
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

What Material to use . . .



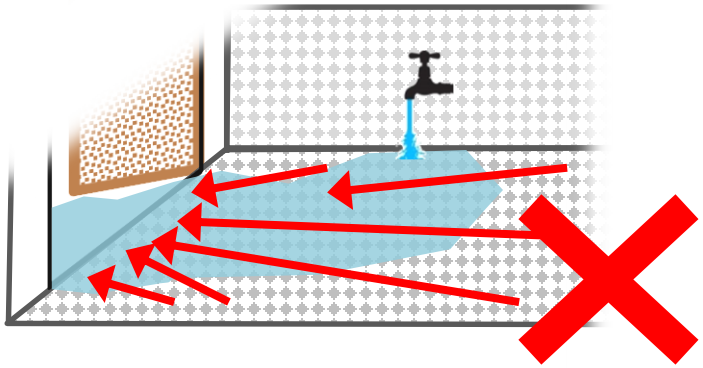
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Proper toilet design. . .

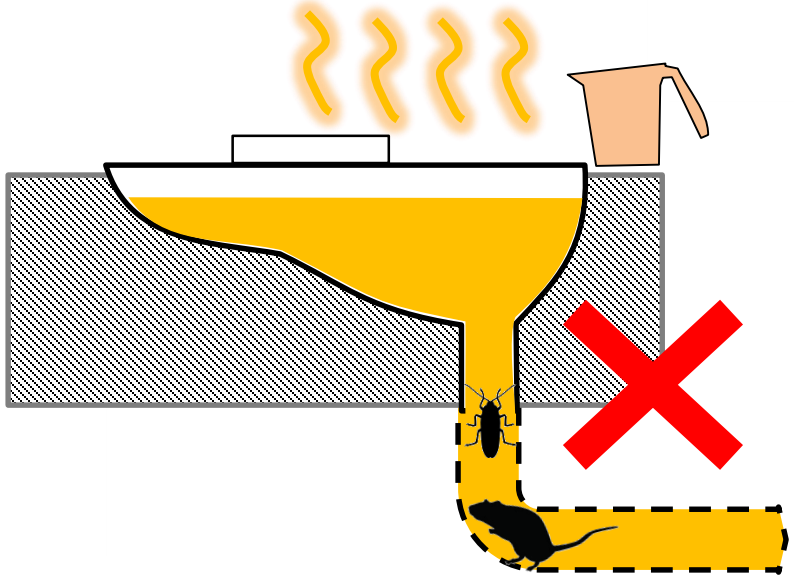


Source: CPHEEO Manual on Sewerage and Sewage Treatment Systems Part A Engineering

Do not slope floor into adjoining room



Problems without water seal

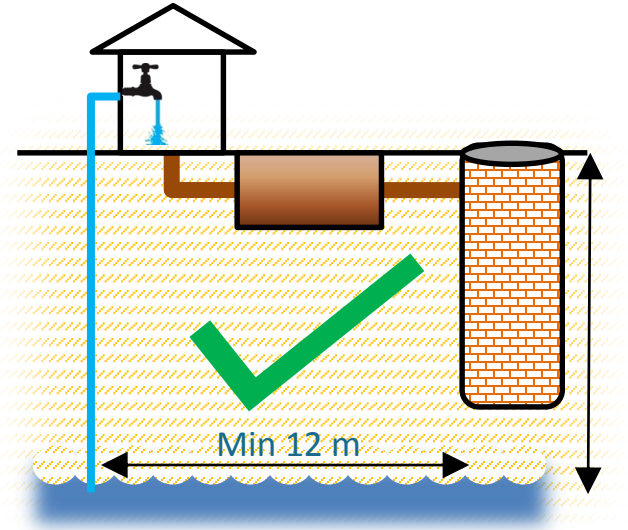


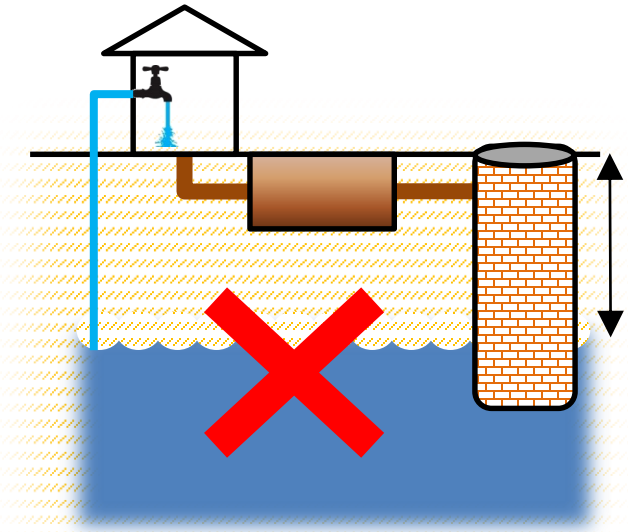
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Septic tank Construction. . .

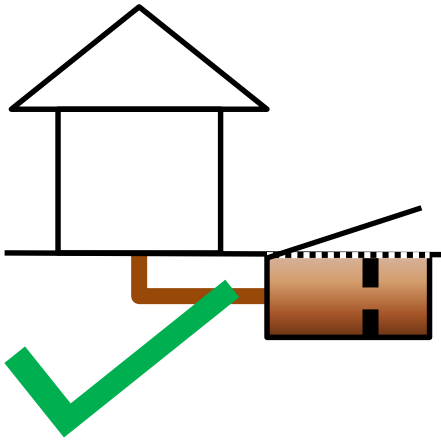
Where to place septic tank . . .

Septic tank and Soak pits away from water table

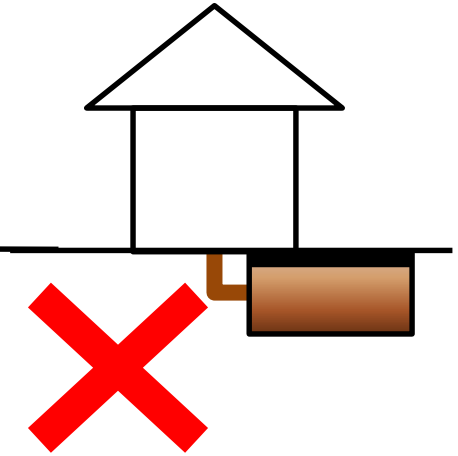




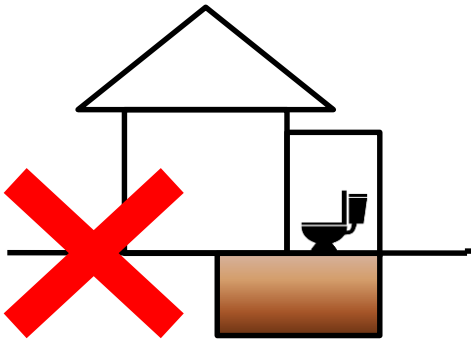
Away from building



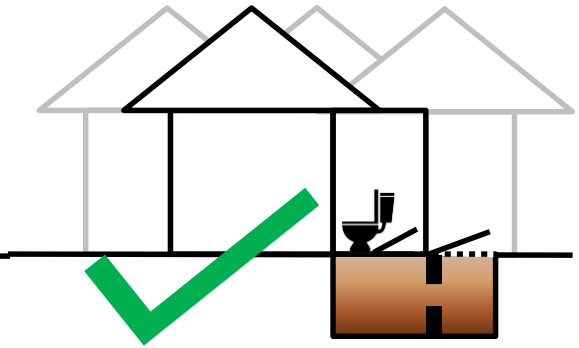
Do not seal from top and place under building



Do not build toilet over it



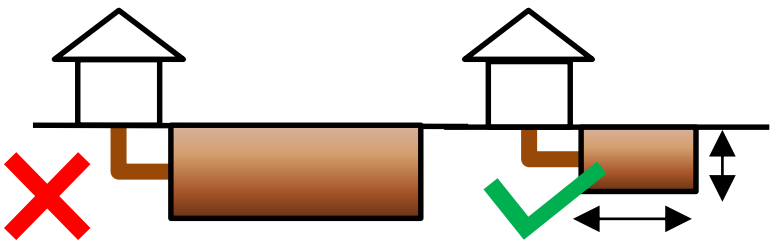
If space is restricted, build toilet over tank such that all chambers are accessible



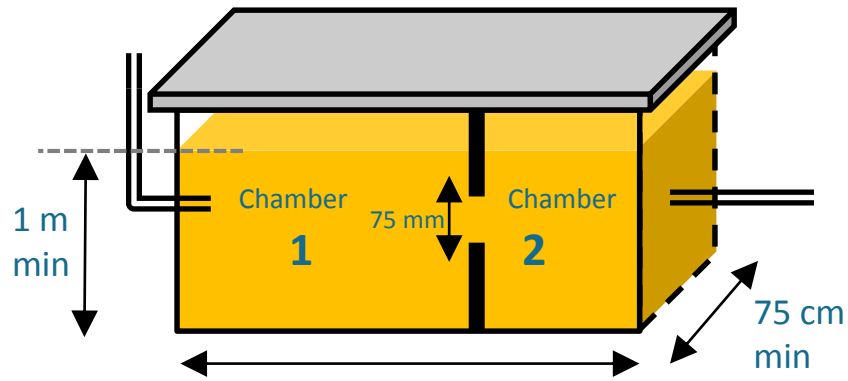
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Minimum size of septic tank. . .

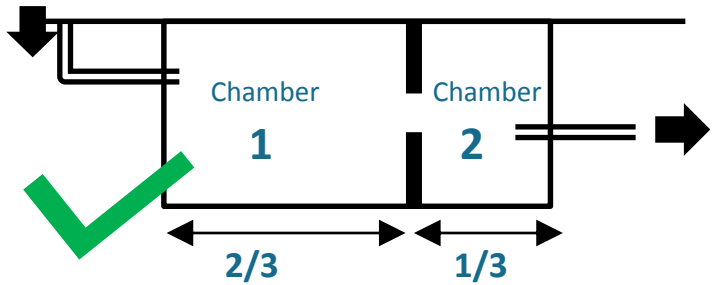
Do not build oversized septic tank

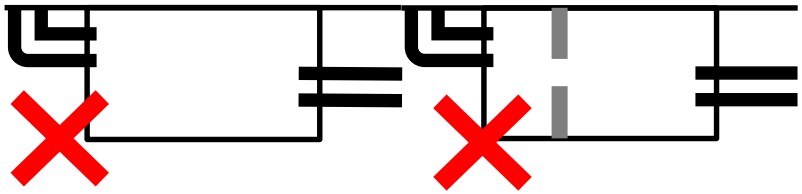


Size should be according to Nagarpalika rules



Preferably build 2 chambered tank with partition at 2/3 of length





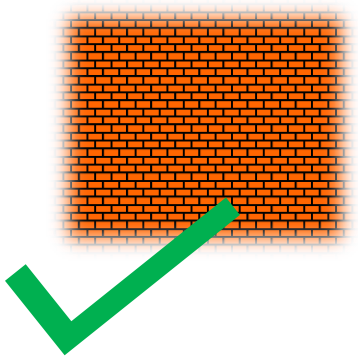
Number of users	Length (m)	Breadth (m)	Liquid Depth *	
			Cleaning in 2 years	Cleaning in 3 years
5	1.5	0.75	1.3	1.35
10	2	0.9	1.3	1.7
15	2	0.9	1.6	2.3
20	2.3	1.1	1.6	2.1
50	5	2	1.3	1.54
100	7.5	2.65	1.3	1.54
150	10	3	1.3	1.54
200	12	3.3	1.3	1.54
300	15	4	1.3	1.54

Source: CPHEEO Manual on Sewerage and Sewage Treatment Systems Part A Engineering
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

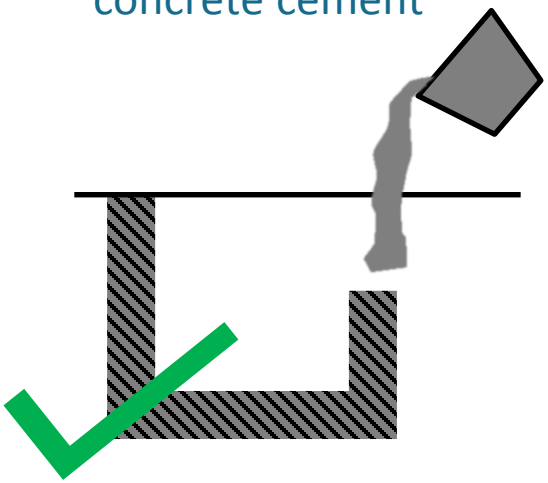
* - Includes free board of 300 mm

Ideal materials for construction of septic tank. . .

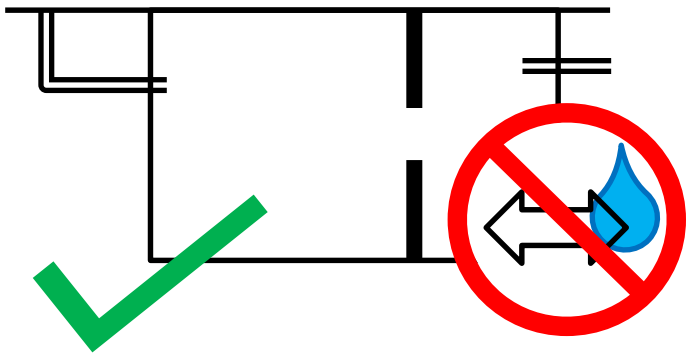
Brick work



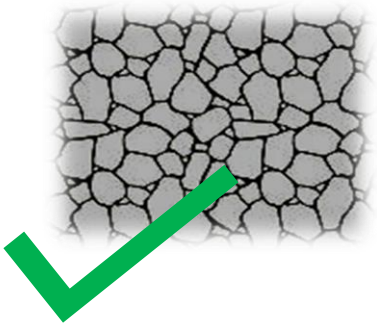
In-situ cast concrete cement



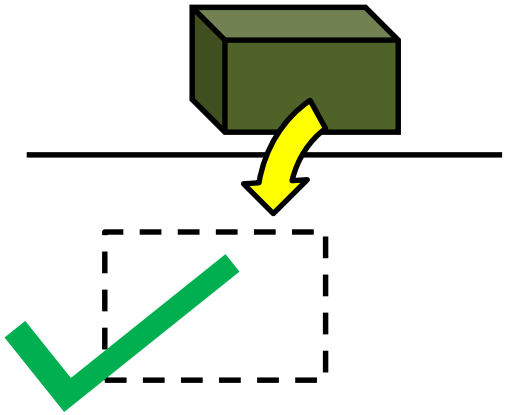
Water tight



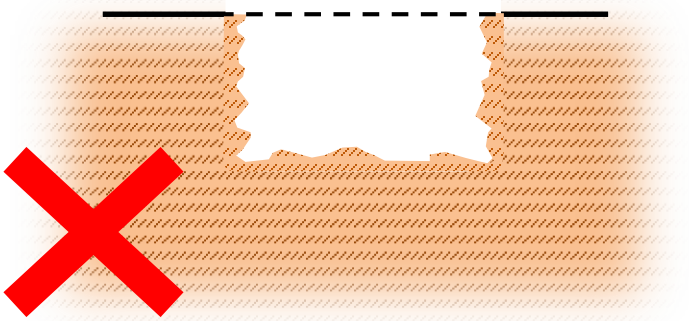
Stone Masonry



Pre cast cement, asbestos, HDPE

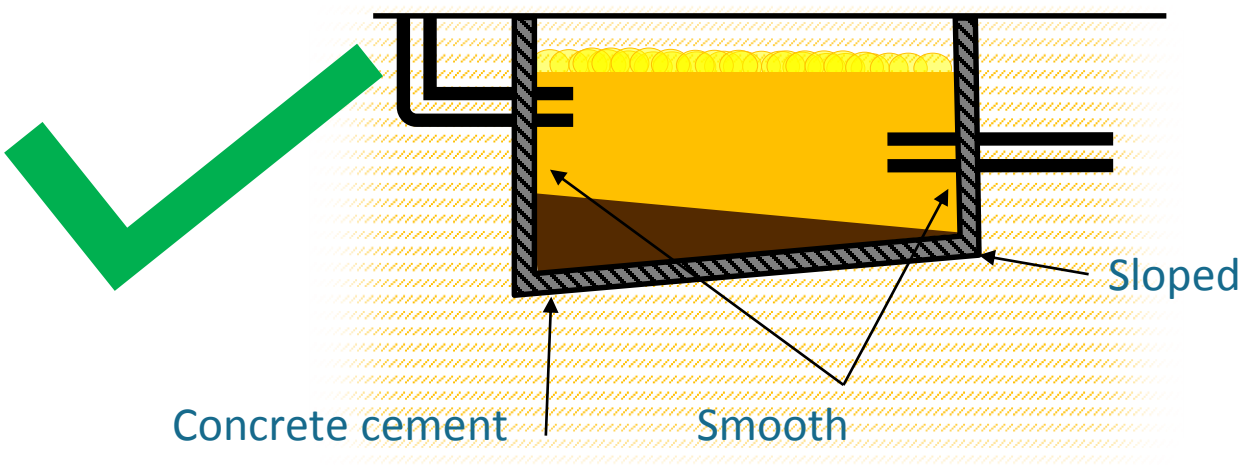


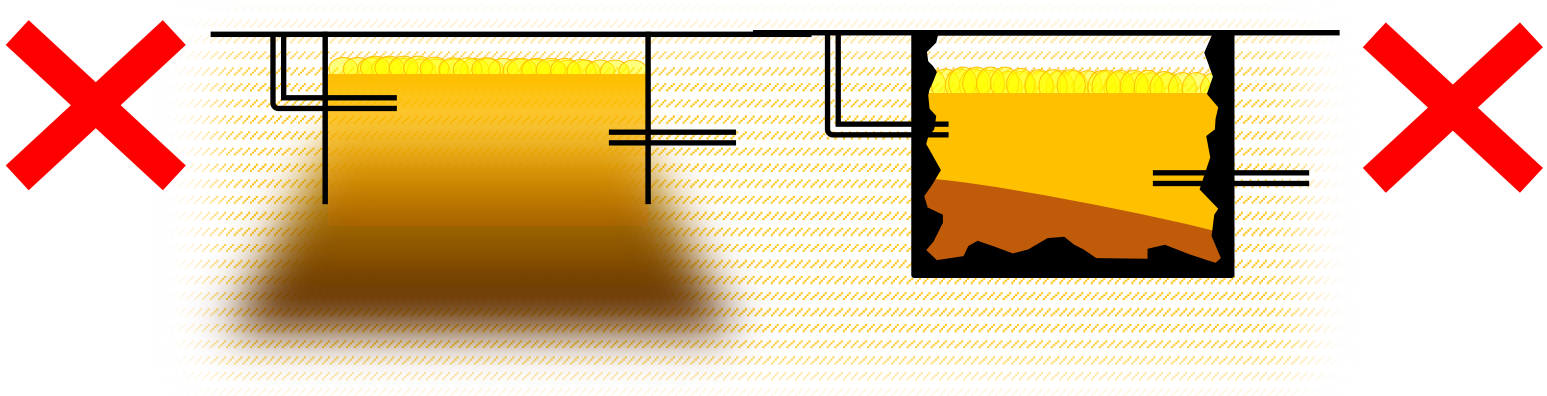
Do not use dug trench



Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Care to be taken while constructing base of septic tank. . .

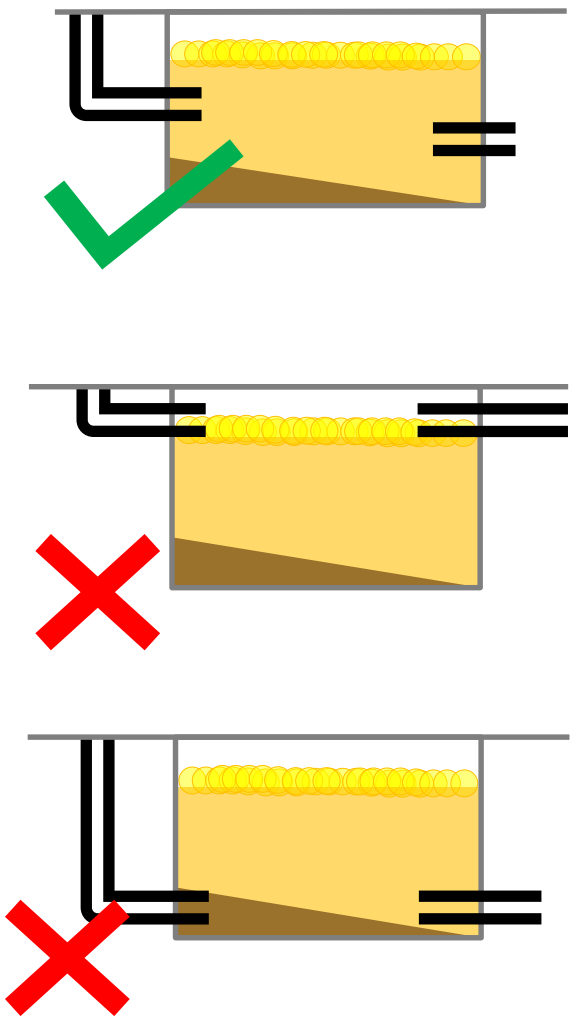




Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

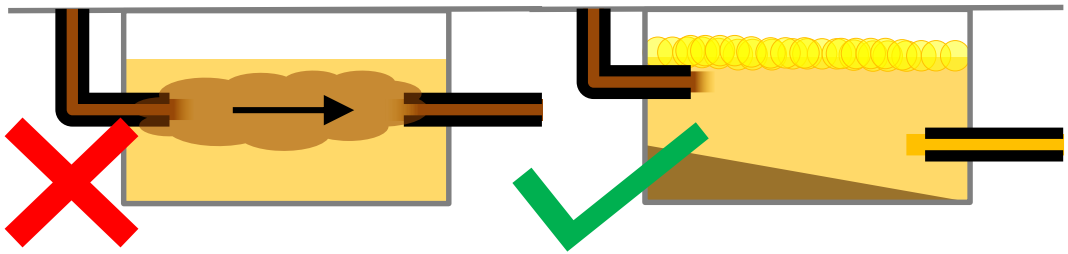
Inlet and outlet levels. . .

Do not make inlet and outlet at scum or sludge level

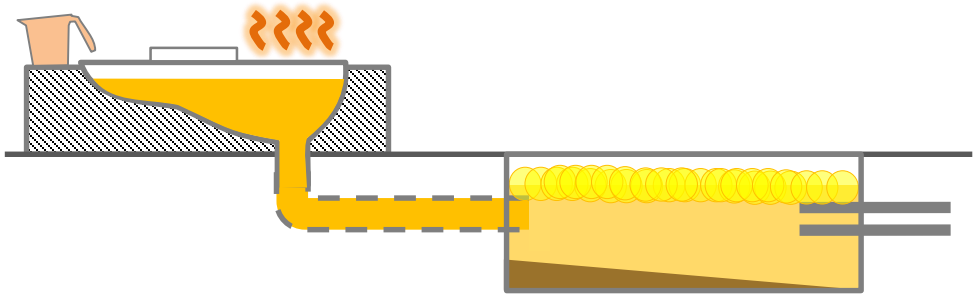


Do not make inlet and outlet at same level

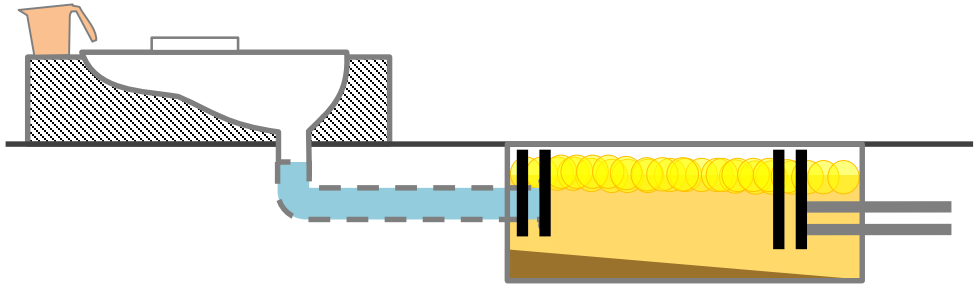
- It short circuits the flow and sludge does not settle



Do not make inlet and outlet pipes straight



Give baffles to prevent backflow of solids

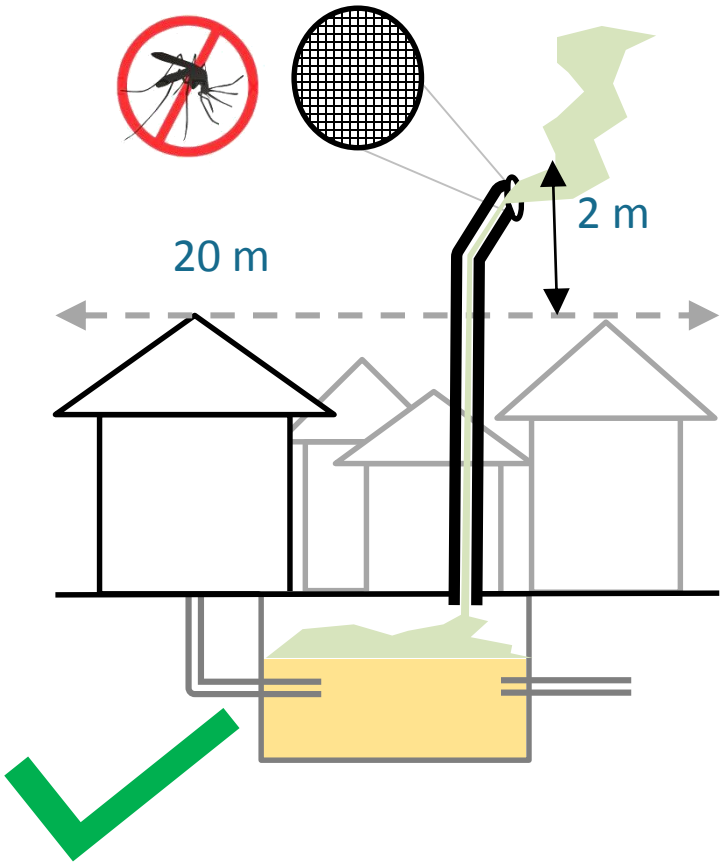


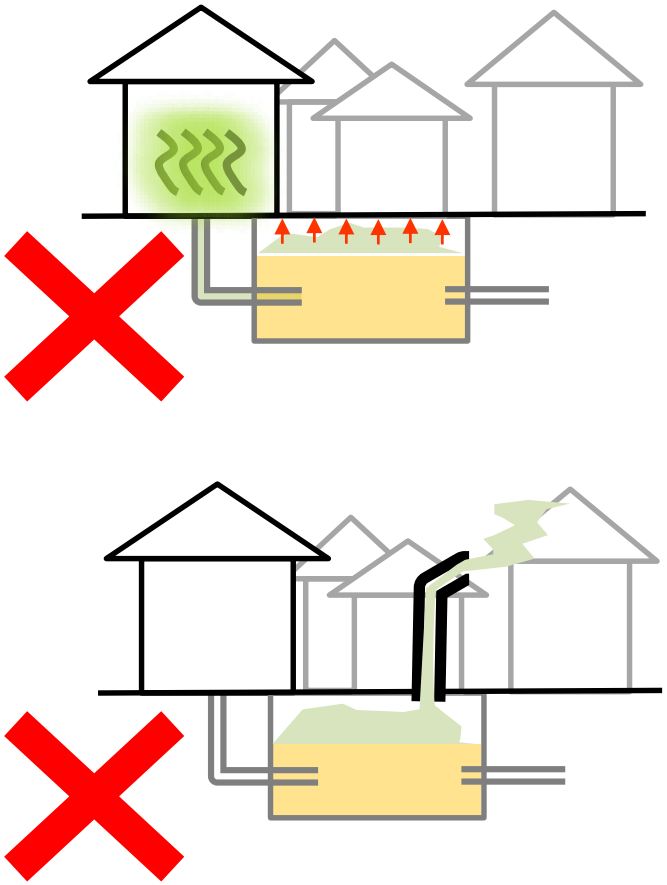
Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Provision of ventilation pipe . . .

Provide tall ventilation pipe for gas buildup

- 2 m higher than all buildings in 20m radius
- Covered by mosquito netting



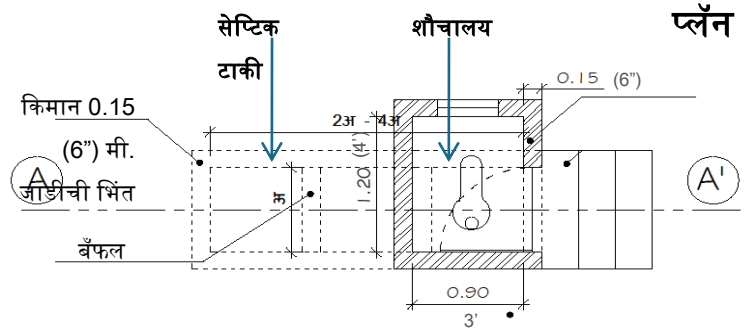


Source: Development Control and Promotion for Municipal Councils and Nagar Panchayats in Maharashtra

Standard toilet & septic tank design. . .

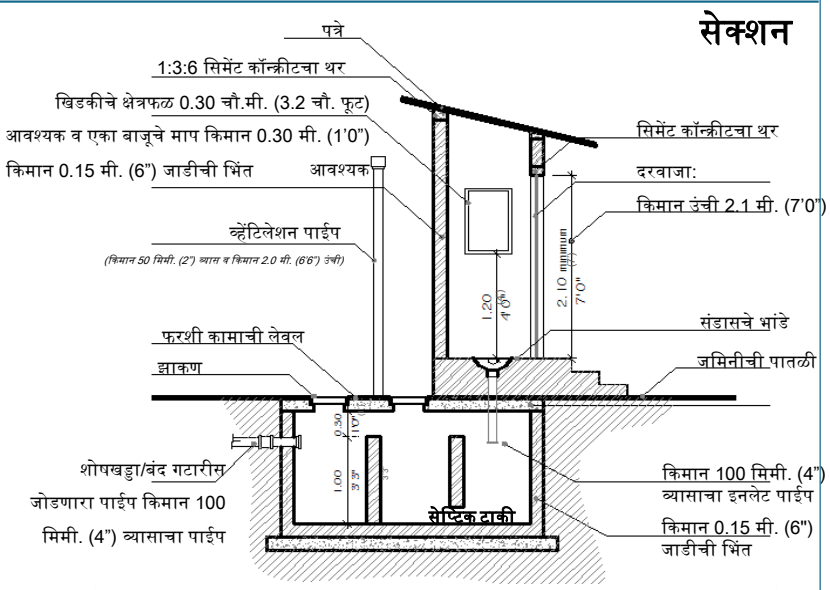
Toilet and septic tank design . . .

पर्याय -1 शौचालयाखाली असणारी सेप्टिक टाकी



टिप:

- सेप्टिक टाकी मधील किमान एक चेंबर उघड्या जागेवर / कोणत्याही बांधकामाखाली नसावे. सेप्टिक टाकीची नियमित स्वच्छता करण्याकरिता टाकीला झाकणासहित दारे असावीत
- स्वतंत्र शौचालयाचा किमान आकारमान 0.9 मी. (3'0") X 1.2 मी. (4'0")



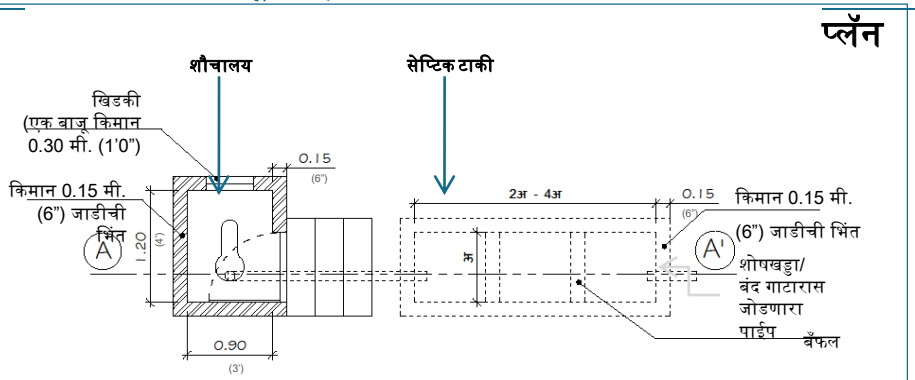
सेप्टीक टाकीचे आकारमान:

- सेप्टीक टाकीची किमान रुंदी 0.75 मी. (2'5") व टाकीची लांबी ही रुंदीच्या 2 ते 4 पट असावी.

तपशील -

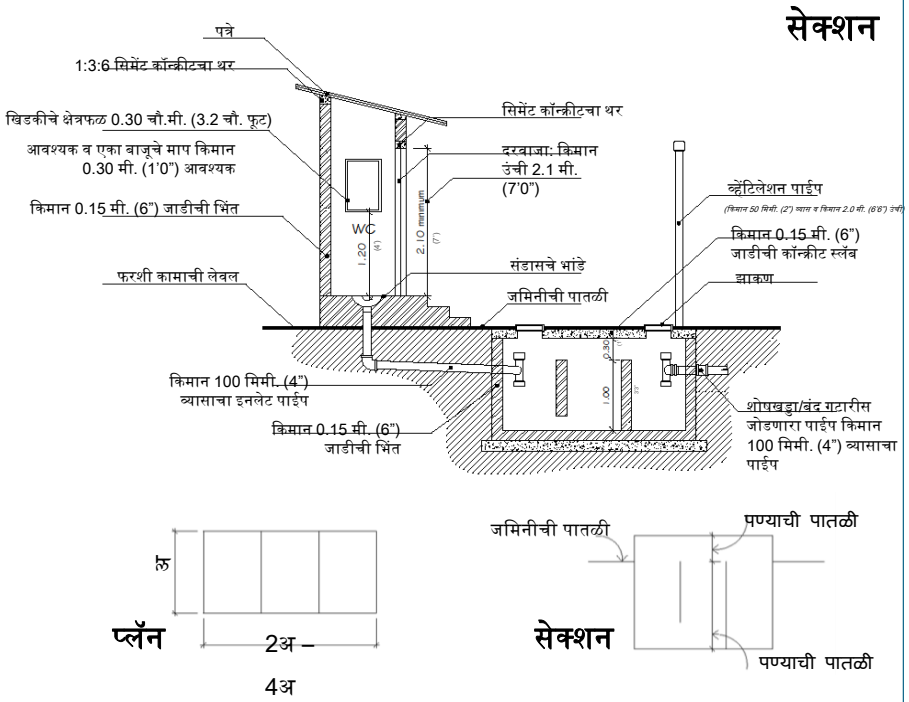
- टाकी मधील पण्याची पातळी किमान 1.0 मी. (3'3")
- पाण्याच्या पातळीवरील मोकळी जागा किमान 0.3 मी. (1'0")

पर्याय -2 शौचालयापासून काही अंतरावर असणारी सेप्टिक टाकी



टिप:

- सेप्टिक टाकी मधील किमान एक चेंबर उघड्या जागेवर / कोणत्याही बांधकामाखाली नसावे. सेप्टिक टाकीची नियमित स्वच्छता करण्याकरिता टाकीला झाकणासहित दारे असावीत
- स्वतंत्र शौचालयाचा किमान आकारमान 0.9 मी. (3'0") X 1.2 मी. (4'0")



सेप्टीक टाकीचे आकारमान:

- सेप्टीक टाकीची किमान रुंदी 0.75 मी. (2'5") व टाकीची लांबी ही रुंदीच्या 2 ते 4 पट असावी.

तपशील -

- टाकी मधील पण्याची पातळी किमान 1.0 मी. (3'3")
- पाण्याच्या पातळीवरील मोकळी जागा किमान 0.3 मी. (1'0")

Any Questions ???

Thank you. . .