

FSM in Building Regulations:

Findings from Review of Building Regulations in 6 states

Andhra Pradesh, Odisha, Tamil Nadu, Rajasthan, Maharashtra and Uttar Pradesh

Arkaja Singh | 23 Oct 2018



Key concerns

- What is the responsibility of house-owners & developers for on-site containment?
 - Necessary for effective FSM
- Is on-site containment mandatory for everyone not on sewerage?
- Are requirements & specs adequate?
- Is on-site containment mainly about septic tanks?

Understanding building regulations in legal terms

- No construction activity without permission in terms of the regulations
 - Penalties, demolition, sealing for violations
 - Site inspections, certification by licensed technical professionals
- Existing buildings, operational aspects cannot be covered by the regulations
- Difficulty of inspecting underground structures
- Low-income settlements, people w/o title documents cannot get permission

What we looked at:

- National Building Code, 2005
- National Building Code, 2016
- Model Building Bye-Laws, 2016
- EIA notifications
- Andhra Pradesh Building Rules, 2017
- Bhubaneswar Development Authority (Planning & Building Standards) Regulations, 2008
- Rourkela Development Authority (Planning and Building Standards) Regulations, 2017
- Rajasthan Unified Building Regulation, 2017
- Tamil Nadu District Municipalities Building Rules, 1972
- Operative Guidelines for Septage Management for Local Bodies in Tamil Nadu, 2014
- Standardised Development Control & Promotion Regulations for Municipal Councils and Nagar Panchayats in Maharashtra, 2013
- Uttar Pradesh Model Bye-Laws, 2008 (sanctioned by government order and to be notified by each of the development authorities)

Other standards applicable to on site sanitation systems:

EIA notifications

- Series of notifications mandate on-site treatment and wastewater reuse as part of environment clearance process for real estate projects
- Now states can incorporate into building bye-laws and do away with EC, but none of them have done this

Model Building Bye-Laws, 2016

- Little on FSM, but also have on-site treatment and reuse for real estate projects
- Many states have adopted parts of this

Non-binding unless specifically adopted

- NBC
- Standards laid down by the Bureau of Indian Standards.
- CPHEEO Standards

Notification issued under the Environment (Protection) Act, 1986

Category	Size	Environmental conditions in relation to liquid waste
Category 1	5,000 to 20,000 square metres built up area	<p>“Sewage: In areas where there is no municipal sewage network, onsite treatment systems should be installed. Natural treatment systems which integrate with the landscape shall be promoted. As far as possible treated effluent should be reused. The excess treated effluent shall be discharged following the CPCB norms.</p> <p>Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.” (Appendix XIV, S.O. (E) 3999)</p>

Category 2	20,000 to 50,000 square metres built up area	<p>“Sewage: Onsite sewage treatment of capacity of treating 100% waste water to be installed. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per CPCB norms. Natural treatment systems shall be promoted.</p> <p>Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.” (Appendix XIV, S.O. (E) 3999)</p>
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Category 3	50,000 to 1,50,000 square metres built up area	<p>“Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.”</p> <p>“Onsite sewage treatment of capacity of treating 100% waste water to be installed. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per CPCB norms. Natural treatment systems shall be promoted.</p> <p>Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.” (Appendix XIV, S.O. (E) 3999)</p>
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National Building Codes (2005 & 2016)

Part 3

- Basic standards and minimum conditions for septic tanks
- Requirement for sub-soil dispersal or other treatment for effluents
- No direct discharge of effluents

Part 9

- Where it is not possible to connect to sewerage, suitable provision should be made for acceptable treatment and disposal
- Where there is no other option, foul water may be directed to cesspools and suitable arrangements with local authorities for periodic removal and conveyance to disposal works
- Design, layout and construction standards for septic tanks
- (2016) Septic tanks preferred in rural, fringe areas and isolated buildings

Andhra Pradesh (2017)

- Where no sewerage, there should be a septic tank
- Scrutiny in plan approval
- Reference to NBC
- Annexure 5
 - Refers to NBC, need for on-site sanitation, location on-site for easy & hygienic emptying, ensure groundwater is not contaminated
 - Application on these provisions not clear, drafting error, likely only Assembly Buildings, Educational Buildings, Industrial Buildings
 - Some MBBL conditions applicable for larger real estate projects

Odisha (Bhubaneswar 2008 & Rourkela 2016)

Bhubaneswar

- Reference to Part 3 of NBC 2005 (which in turn refers to Part 9)
- Reiterated for multistorey buildings, group housing and apartments, farmhouses
- No further specification is stated
- Incorporates some MBBL conditions for large real estate

Rourkela

- No mandatory requirement (drafting error?)
- Mandatory however for multistorey buildings, group housing and apartments, farmhouses
- No further specification is stated
- Incorporates some MBBL conditions for large real estate

Rajasthan (2017)

- No scrutiny at plan approval stage, except for multistoried buildings
- Mandatory requirement for septic tank/ soak pit specifically stated & by reference to NBC
- No further specification is stated
- Incorporates some MBBL conditions for larger real estate

Tamil Nadu (1972 & 2014)

- Scrutiny at the time of plan approval
 - Manner in which drainage is sought to be disposed off
 - Includes means of access
 - Form and dimensions of any cesspool
- Executive authority can give further specifications
 - Special measures for where there is surface or sub-surface water
 - Near water bodies, to prevent contamination
- Some of these further specs are given in the Operative Guidelines
 - Also extends this to existing buildings and septic tanks
- No MBBL provisions for on-site treatment

Maharashtra (2013)

- Scrutiny at the time of plan approval
- Mandatory requirement for on-site by reference to NBC
- Detailed specs are including in the regulation itself
 - Specs for various parts, including septic tank and soak pit
 - Distance from buildings and drinking water sources
- Alternatives for “modern methods of disposal” may also be permissible
- No MBBL conditions for real estate projects

Uttar Pradesh, 2008

- Scrutiny as part of plan approval process
- General reference to NBC, but no specific reference to requirement for on-site sanitation or Part 9 of NBC
 - Except for Guest Houses, Shopping Malls and Farm Houses
 - Specific restriction on effluent discharge from sites 200m from Ganga, and if there is no drainage service, then residential use not permitted
- No further detail provided, no reference to MBBL conditions for large real estate

Different states, different levels of regulation

Does the building regulation or code provide the following?	NBC 2005	NBC 2016	MBBL 2016	Andhra Pradesh	Odisha - Bhubaneswar	Odisha - Rourkela	Rajasthan	Tamil Nadu	Maharashtra	Uttar Pradesh
Does it make on-site containment mandatory for sites where a sewerage connection is not available?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Is this done directly, or by reference to NBC?	N/A	N/A	NBC & directly	NBC	NBC	N/A	NBC & directly	Directly	NBC	N/A
Is on-site containment scrutinised as part of the building plan approval process?	N/A	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	No

Does it contain any specifications and requirements for the septic tanks? E.g., restrictions on open discharge, protection of ground water etc.	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No
Does it require that access for cleaning should be provided?	No	No	Yes	No	No	No	No	Yes	No	No
Are there any special requirements for special locations?	No	No	No	No	No	No	No	Yes	Yes	Yes
Does it incorporate special provisions for larger real estate projects?	No	No	Yes	Yes	No	Yes	Yes	No	No	No

What can we do?

- **Identify good practice regulations**

What are the basic conditions that should be in all regulations?

- . Clear legal requirement to provide on-site sanitation
- . Basic health & safety principles
- . Access for de-sludging
- . Written in simple, accessible terms
- . Flexibility for special site conditions?
- . Any others?

- **Training for state/ development authority planning cells**

- **Undertake joint review of all state regulations**

- **Review of national codes: NBC, Model Building Bye-Laws etc. from FSM perspective**

SCALING CITY INSTITUTIONS FOR INDIA: SANITATION (SCI-FI)

Sanitation programme at the Centre for Policy Research (CPR) is a multi-disciplinary research, outreach and policy support initiative. The programme seeks to improve the understanding of the reasons for poor sanitation, and to examine how these might be related to technology and service delivery models, institutions, governance and financial issues, and socio-economic dimensions. Based on research findings, it seeks to support national, state and city authorities develop policies and programmes for intervention with the goal of increasing access to inclusive, safe and sustainable sanitation. Initiated in 2013, the programme is primarily funded by the Bill and Melinda Gates Foundation (BMGF).



DHARMA MARG, CHANAKYAPURI, NEW DELHI 110021
WWW.CPRINDIA.ORG



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