

# East Central Railway


Office of the  
General Manger (Engg)/Hajipur



## PCE's CIRCULAR No- 25/2008/WORKS

### Sub- Gradient for Soil Pipes

1. In plumbing system, a pipe that conveys the discharge of water-closets or fixtures having similar functions, with or without the discharges from other fixtures is known as soil pipe. These pipes are used to connect water closets with septic tank or sewerage system. The discharge through these pipes are intermittent and limited in quantity and, therefore, small accumulations of solid matter are liable to form in the pipe between water closets and septic tank. There is usually a gradual shifting of these deposits as discharge takes place. For better functioning of the fixtures attached with the soil pipes it is required that gradients of these pipes shall be sufficient to prevent these temporary accumulations building up and blocking the flow. The approximate gradient for 100 mm dia pipe which is most commonly used size of soil pipe should be normally **1 in 60** which will enable to achieve minimum self cleansing velocity of 0.80m/ sec.
2. In cases where it is practically not possible to conform to the ruling gradient of 1 in 60, a flatter gradient may be provided, but the minimum velocity in such cases shall on no account be less than 0.60 m/sec and adequate flushing should be done. Corresponding to this velocity the gradient for 100 mm dia pipe will be approximately 1 in 100.
3. As such outlet level of water closet, inlet/outlet levels of manholes and inlet levels of septic tank/sewerage system have to be co-related and decided based on the permissible gradient of soil pipes as mentioned in Para 1 & 2 above. Before starting any one or more of the following works , a drawing showing all the levels as discussed above must be prepared and got approved by concerned ADEN/AEN/XEN:-
  - a. Construction /modification of a water closet as a part of a building or in isolation.
  - b. Construction/modification of a manhole or group of manholes.
  - c. Construction/modification of a septic tank.
  - d. Connecting soil pipe to a sewerage system.

  
(V. KUMAR)  
Chief Engineer/Works  
Date-30.01.08

Docket No- W-2/118/09/Works Policy /1113  
Copy-

1. CAO/Con/N, CAO/Con/S/MHX for information Pl.
2. DRM/DNR, DHN, MGS, SPJ & SEE for information Pl.
3. Sr.DEN/ (Co-ord)/DNR, DHN, MGS, SPJ & SEE for information and necessary action.
4. All HODs, Dy HODs/Engg Deptt/ECR

  
Dy Chief Engineer/Works