

**GOVERNMENT OF ANDHRA PRADESH
RURAL WATER SUPPLY AND SANITATION DEPARTMENT
OFFICE OF THE Chief Engineer-I RWS&S, HYDERABAD**

**Circular Memo No. AEE- II(D)/DEE/Filter Media
Instructions/2015 Dated: 06.08.2015**

Sub:- RWS&S – Monitoring of Water supply schemes- O&M of Slow Sand filters - Regarding.

Ref:- 1. Circular Memo No. AEE -I)/DEEII)/RWS/S-W Monsoon /General /2014 dt. 18.06.2015

It Is to inform that during Video conference held on 29.5.2015 with all districts on seasonal diseases, the District Collector, Krishna has informed that the slow sand filters are not functioning due to insufficient depth of filter media and lack of periodic filter cleaning etc., resulting to spreading of waterborne diseases in such villages.

Hence all the Superintending Engineer's, RWS are requested to direct all the field officers to inspect all the schemes which are having slow sand filters and inform to Panchayt Raj institutions i.e GPs/ZPs to take up immediate repairs to slow sand filters with 13th/ 14th Finance funds released by the Commissioner of PR, as proper Operation and Maintenance of PWS schemes in their villages is the complete responsibility of the GPs.

Further inform the Grama Panchayats that proper Chlorination is to be done during every filling of storage reservoir to maintain minimum end residual point chlorine before supplying to the people.

Filter media for slow sand filters and its operation guidelines are here with enclosed for information. IS-11401(part2): 1990 General requirement for Slow sand filters is also enclosed for information

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Chief Engineer-I(Admin.)
RWS&S, Hyderabad.

To

The Superintending Engineers, RWS&S Krishna.

Copy to Superintending Engineers, RWS&S EGDT, WGDT, Guntur & Prakasam.

Copy to the Executive Engineers, RWS&S, Krishna, EGDT, WGDT, Guntur & Prakasam districts.

Copy to the Dy.Executive Engineer, O&M section *for further action.*

Copy to Chief Engineer's RWS-I, RWS-II, RWS-III & RWS-IV for information and necessary action.

Copy to the Commissioner, PR Hyderabad, for favour of information and necessary action.

Copy submitted to the Secretary, PR & RWSS, AP, for favor of information

// t.c.f.b.o \\\

[Signature]
Dy Executive Engineer

[Signature]
10/8/15

Slow sand Filters – General Instructions -Filter Media and its Operation

I. Filter Media:

- Slow sand filters are being constructed for treatment of water in Single Village schemes and Multi Village schemes.
- The filter sand and supporting media play a vital role in purification of water. The fine sand is heart of the SS Filters.
- Existing standardized details of thickness of the filter and supporting media and its grain size to maintain uniformity is given below:

Fine Sand	:	1.00 M
Grain size 0.20 to 0.30 mm		
Uniformity coefficient 2 to 3		

Coarse Sand	:	0.10 M
Grain size 1.00 – 1.30 mm		

Gravel	:	0.10 M
Grain size 4.0 – 5.6 mm		

Gravel	:	0.15M
Grain size 16.0 – 23.0 mm		

Under Drain System

- Thus the total depth of filter sand (1.0 M) and supporting media (0.35 M) comes to 1.35 M . Gravel should consist of hard stones preferably rounded with a specific gravity not less than 2.50.
- The filter media and supporting media should be washed before filling in the filters to remove clay, loam, dirt and organic impurities of any kind.

II. Operation and Maintenance:

i. Initial commissioning:

- a) While commissioning a newly constructed filter, filter is to be charged with water from bottom through the under drain until it rises 0.10 – 0.15 M above the fine sand. This ensures expulsion of entrapped air from the filter bed and the under drainage system. The inlet valve of the filter shall then be gradually opened and water is admitted to the filter from top.

- b) Flow control – Declining rate of filtration should be used. That is when the raw water is stopped, all valves remain in the same position and filtration continues at a declining rate as the water level in the filter falls. [Filtered water outlet valve (in between filter & V-notch) and filtered valve (in between V-notch & clear water sump) should not be closed].

ii. Filter Cleaning:

When the filter has attained the maximum permissible head loss i.e when the discharge becomes less than the pre-defined quantity, it is taken out of service for cleaning. The water level is lowered 0.10 – 0.15 M below the top of the sand bed without allowing the bed to dry up. The filter is cleaned manually by scrapping the top layer of 2 – 3 cm of sand along with the filter skin. The filter is returned to service by admitting clear water through bottom from the adjacent filter to a level of a few centimeters above the sand bed before allowing raw water from top.

iii. Resanding by throwing over method:

Due to periodic cleaning, when the sand depth is reduced to a minimum of 0.6 M it is necessary to make up the sand depth to the original level. This is done by replenishing with a new sand or washed and dried sand accumulated from earlier scrapings, taking care to see that the remaining old sand is placed on top of the new sand. This avoids accumulation of dirt in the deeper layers of filter bed and helps in quick ripening after resanding.

Sd/-xxxxxxx

Chief Engineer, RWS-I&Admin.
RWSSD, Hyderabad.

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MVS
Dy Executive Engineer

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10/8/15