

UN-Habitat Sri Lanka

Sustainable Construction Using Alternative Technologies

Filler slabs



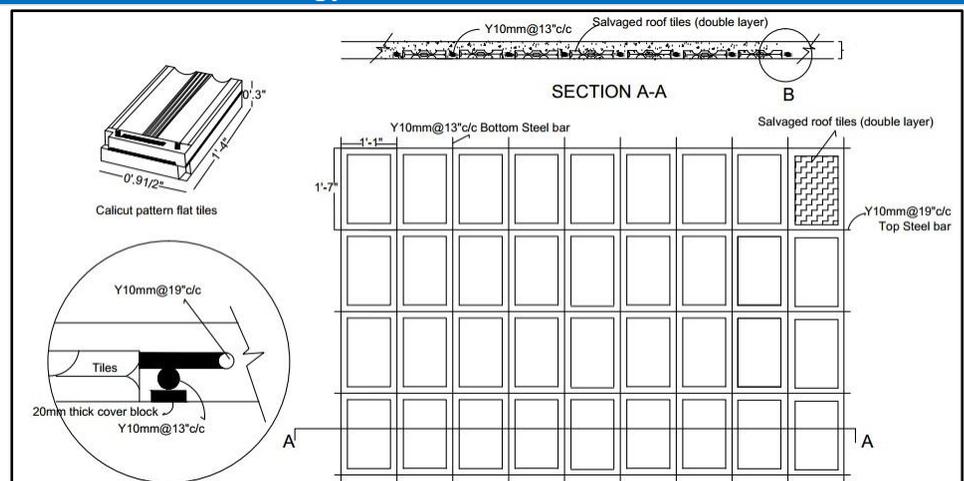
About Filler Slabs

- Filler slabs are simply supported, low cost concrete slabs that can be used as floor slabs with short spans or in canopies for spans up to three meters.
- **Main constituents of a concrete slab:** concrete and steel reinforcement is optimized in a filler slab by replacing concrete in the tension area of the slab cross section with a much cheaper filler material, which is durable, but less in density.
- Discarded roofing tiles and clay pots are commonly used as filler materials.
- As filler slabs are low in self weight, it reduces the need for steel reinforcement.
- Filler material can be arranged to offer an aesthetically pleasing look in the bottom of the slab and to eliminate the need of a soffit plaster.

Methodology

This diagram shows the arrangement of filler material and reinforcements.

- In this instance, discarded Calicut tiles are used as filler material. 10mm ribbed steel reinforcement is used in both directions @ 13" intervals along the shorter span and @ 19" intervals along the longer span.
- Two tiles are laid, one over the other, facing each other on the form work in between the reinforcements.
- 1:2:4 concrete is laid over the filler material and reinforcement to a total thickness of 5" and cured by covering with wet sacks for 3 weeks. Formwork can be removed after 4 weeks.



Benefits and Limitations

Benefits: This method is cost-effective as it reduces the amounts of concrete and steel used in slab construction; Burnt clay based filler materials such as discarded roofing tiles and clay pots will provide additional thermal comfort; Enables recycling of waste materials as filler material.

Limitations: Suitable only for slabs with small spans; Should be constructed under proper supervision.

More information and Related Resources

- http://wiki.auroville.org.in/wiki/Roofing_with_Filler_slab
- <http://sepindia.org/ihd-sep/ceeef-technologies/filler-slab-technology/>

