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CONSTRUCTION GUIDE
FOR CASTING VIP/WATER-SEALED
LATRINE RISER

Prepared by

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RURAL WATER SUPPLY
IMPROVEMENT AND TRAINING PROJECT
(RAS/84/203 - RAS/80/023 - ICP/CWS/006)

SUVA FEBRUARY 1986

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CONSTRUCTION GUIDE
FOR CASTING VIP/WATER-SEALED
LATRINE RISER

I. Introduction

The purpose of this guide is to provide a cheap and simple method of casting concrete latrine riser using light and inexpensive mould which is portable enough to be taken to distant villages by hand. The constructed latrine riser can either be used for ventilated improved pit latrines in places where there is scarcity of water or water sealed latrines (pour-flush privy) in places where water is available for flushing purposes. In addition, commercial plastic seat/cover used with porcelain/china pans or simple pre-fabricated wooden seat/cover can be fixed on top of the latrine riser for aesthetic and sanitary purposes.

The construction method was first initiated and demonstrated in the Kingdom of Tonga by Mr Lloyd Belz, Project Director of the WHO-executed project, Community Water Supply and Sanitation, TON/CWS/002 in 1984. The method was subsequently adopted by the project following its acceptance by the community. This method has already been introduced and demonstrated in three appropriate technologies workshops held in Vanuatu, Fiji and Truk/TTPI in 1985. Tremendous response received after the workshops has prompted the writing of this guide.

The construction method and mould were further developed and modified by Mr T. Videnov and the author, Project Manager and Project Engineer respectively of the WHO-executed project, Rural Water Supply Improvement and Training, ICP/CWS/006. Instead of using a timber block adaptor for seat/cover installation, this is now cast concrete and incorporated to the riser. A hole is introduced in the middle of the timber stoppers for ease in dismantling. And steel fibres are not included in the mortar mix.

The riser mould consists only of two oblong-shaped timbers, as stoppers, a piece of galvanized sheet metal and a timber frame for seat/cover installation. The casting procedure is similar to plastering a chicken wire-reinforced ferrocement cylindrical tank on a smaller scale.

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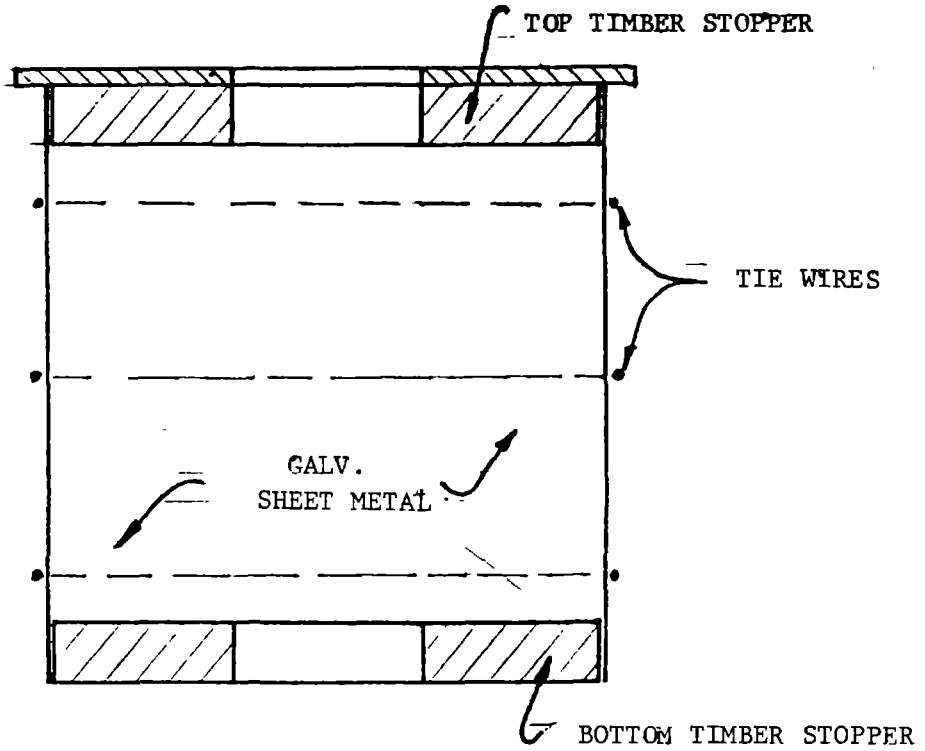


FIGURE I

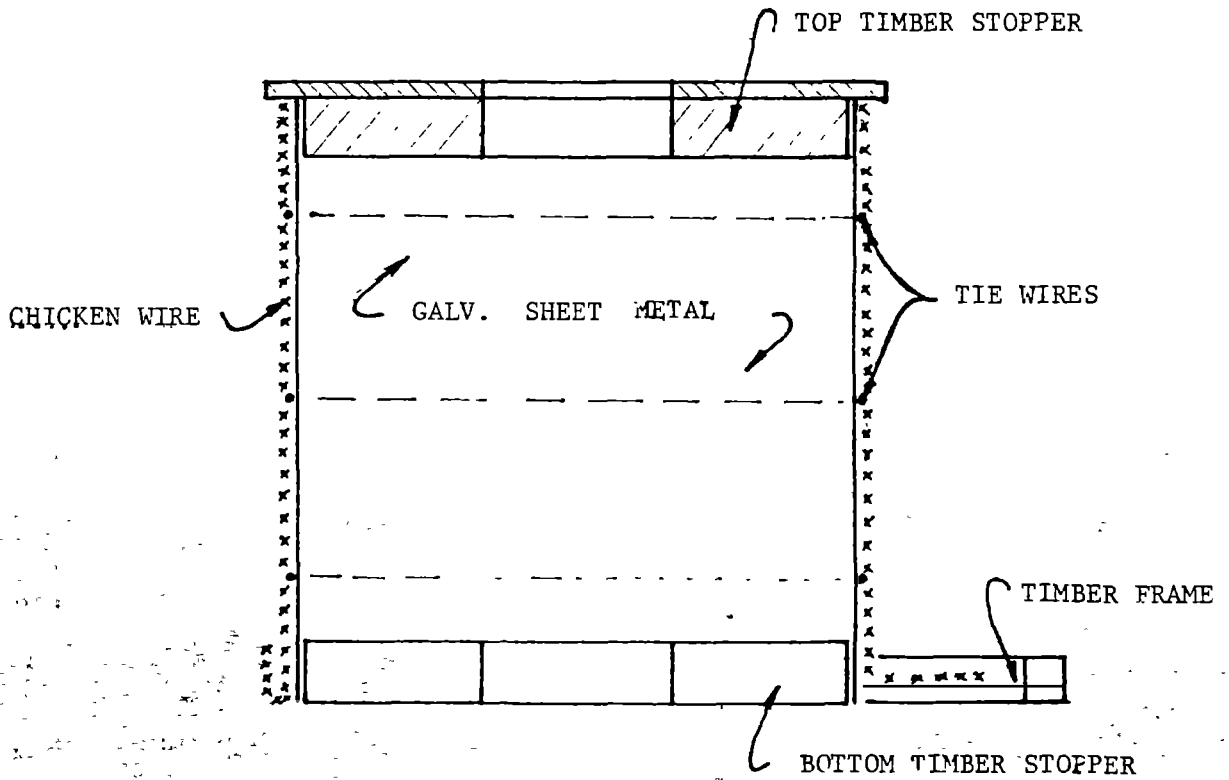


FIGURE II



Moulds per set
(photo 1)



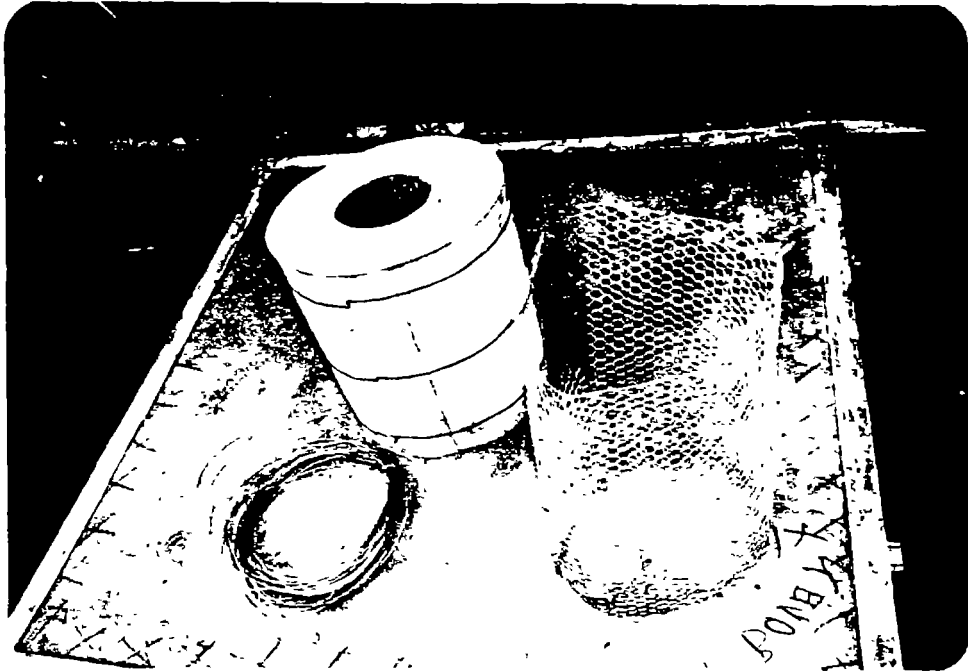
Assembled/Formed Mould



Moulds per set
(photo 1)



Assembled/formed Mould



Formed mould prior to securing of chicken wire around

(Photo 3)



Mould with chicken wire and seat/cover

3. Prepare a mortar mix of $1\frac{1}{2}$ shovels of cement, 3 shovels of sand and water. The mix should not be too wet or too dry but must be workable enough to be trowelled onto the mould without any difficulty.
4. On a level ground, using a flat trowel, plaster the mortar around the mould and gauge the thickness by using the 20mm overlap on top of the timber stopper. Fill up the timber frame with mortar and create two holes 150mm apart by sticking two old small batteries or any substitute. Finish and smooth the surface using a pointing trowel.
5. After 12 hours, dismantle the mould from the cast riser as shown in photos 8 and 9. Let the riser be properly cured for at least a week before putting it to use.

IV. Latrine Riser Installation

The constructed latrine risers can be installed on pre-cast Ventilated Improved Pit (VIP) slabs and used in places where water is not easily available and sufficient. It can also be installed on a pre-cast water sealed latrine slab and used with commercial polythene toilet bowl and in places where there is available water for flushing.

The opening on the slab where the riser will sit on should at least be 1cm smaller than the opening of the riser. The riser has to be fixed on top of the slab by plastering mortar around inside and outside the riser.



Tools required for latrine riser
preparation
(Photo 5)



Precasting of latrine riser by
plastering
(Photo 6)



Latrine Riser After Casting
(Photo No. 7)

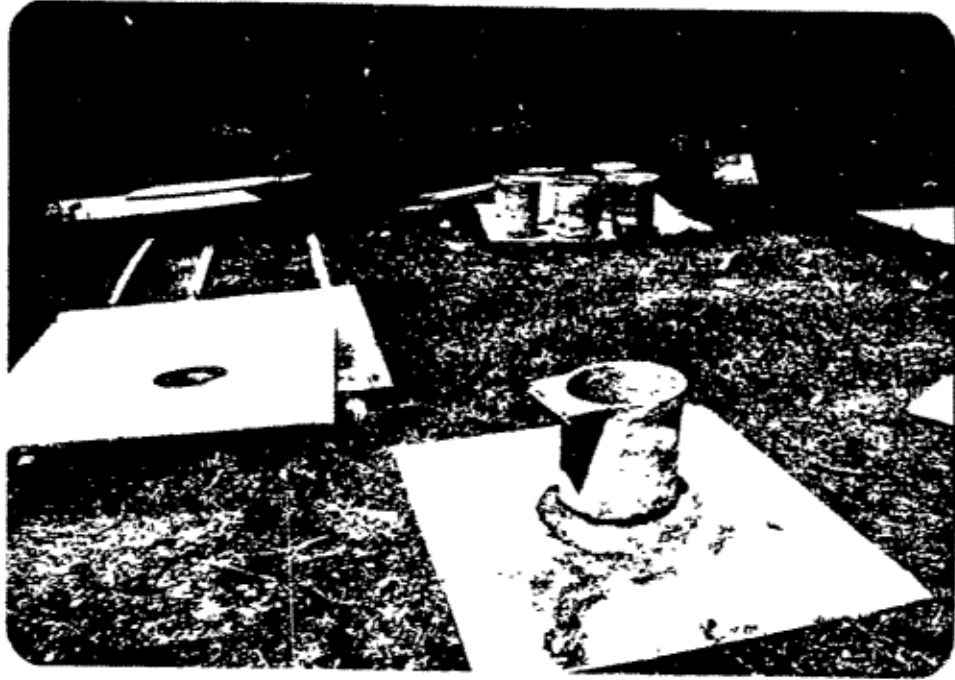


Taking out Top and Bottom Stoppers
(Photo No. 8)



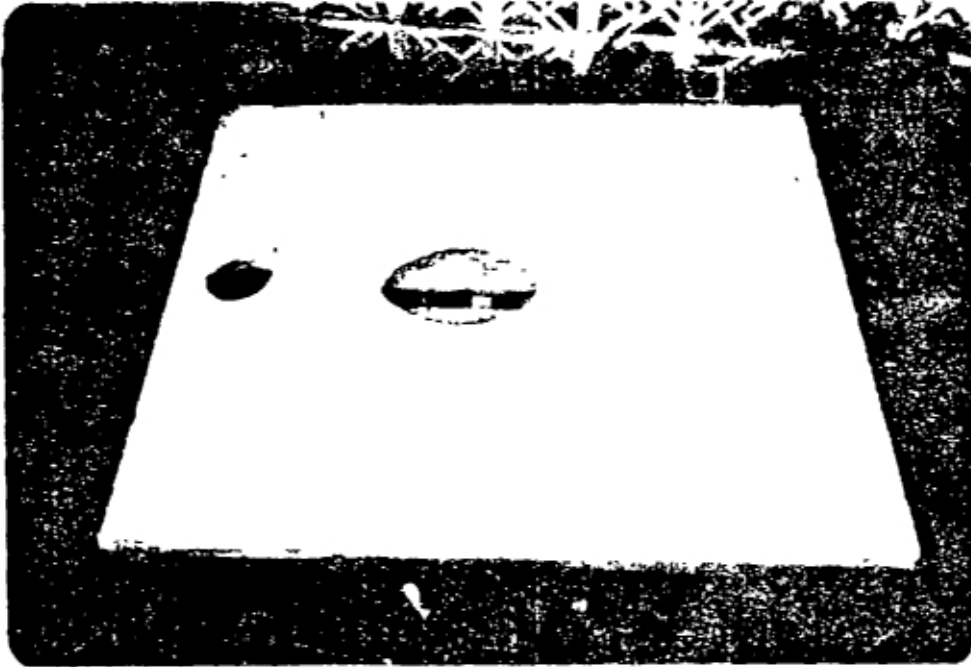
Taking out Galvanized Sheet Metal
(Photo No. 9)



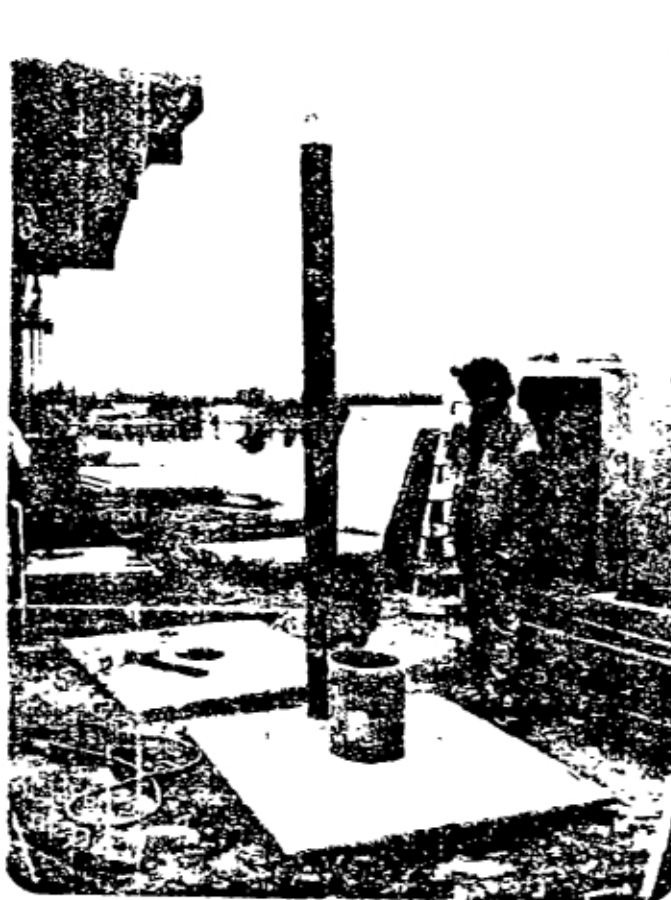


Latrine riser used as pit latrine without
plastic seat/cover
(Photo 10)





Pre-cast VIP Slab, (Photo 12)



Latrine Riser on a VIP Slab
(Photo 13)



Pour-flush polythene bowl
(Photo 14)





Latrine riser used with pour-flush
polythene bowl
(Photo 15)



With plastic seat/cover
(Photo 16)

