

# Rain Water Diverter System Repair and Fabrication

## Design, Materials and Steps to Fabricate Rain Water Diverter System



A Rainwater Diverter/First Flush is a simple device used to direct rainwater collected by guttering before it enters the water storage tank or PVC Drum reservoir for domestic use in household and schools. The device is easy to maintain and durable (without specialist or equipment). This leaflet will assist the local communities in the maintaining, repairing and fabricating rainwater diverter device in order to have a functional and sustainable classroom toilet for school children.



## Tools and Materials Needed for Rainwater Diverter System

Item	Particulars	Quantity	Part Number
	<b>PVC Tee Reducer 4"X2"Ø</b> Will serve as the main frame of the rainwater diverter system	1 piece	1
	<b>PVC Bushing Reducer 4"X2"Ø</b> 2a will serve as down pipe bushing assembly and will be installed in the upper portion system. 2b will serve as discharge pipe bushing assembly that will be installed in the lower portion of the system.	2 pieces	2a & 2b
	<b>PVC Pipe 2"Ø X 2" cut into half as discharge pipe cover</b> Will serve as the cover of discharge pipe and divert rainwater flow to PVC reservoir. This is to prevent rainwater coming from the down pipe to flow directly to the discharge pipe.	1 piece	3
	<b>PVC Pipe 2"Ø X 4" (Down pipe &amp; Inlet pipe to reservoir)</b> Will act as ready pipe where the PE connector will be attach and detach for maintenance of the rainwater diverter system.	2 pieces	4a & 4b
	<b>PVC Pipe 2"Ø X 12" (discharged pipe)</b> Will serve as the overflow pipe when excess water flows out from the PVC reservoir.	1 piece	5
	<b>Polyurethane Pipe 2 1/2"Ø X 4" as pipe connector of the down pipe and inlet pipe</b> Will act as the connector of the rainwater diverter system from the down pipe and inlet to the PVC reservoir. This is where you detach the rainwater diverter during maintenance and attach it after cleaning the system.	1 piece	6a & 6b
	<b>Hose Clamp 3"Ø to secure pipe connector.</b> Will act as lock or lightener of the PE connector to make the rainwater diverter system stable in supplying water from the roof gutter to the PVC drum reservoir.	4 pieces	7a, 7b, 7c & 7d
	<b>PVC Blue Male and Female Adaptor 1 1/2"Ø</b> Will serve as the inlet pipe of the PVC Drum reservoir. This is where the rainwater diverter will attach using the PE Pipe connector.	1 piece each	8
	<b>Teflon Tape, PVC Solvent, Set of wood screws, common nail #1, Philip Screw Driver, Pliers, Hacksaw Blade</b>		

# Steps // Fabricate Rainwater Diverter System

## ➔ Step 1: Fabrication of Discharge Pipe with cover Bushing Assembly

Remove the stopper of part # 2a.



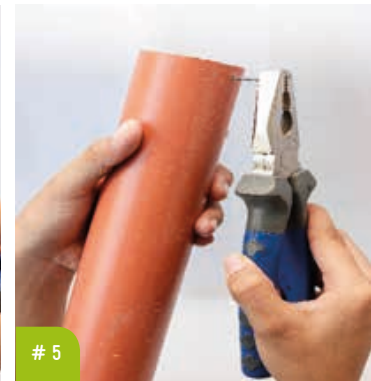
Insert part # 5 to part # 2a.



Using a heated common nail # 1 punch a hole in part # 3.



Using the same procedure punch also a hole of part # 5.



Screw part # 3 to part # 5.



Check the position of part # 3 screwed in part# 5 inside part # 1.



Apply solvent to the part# 5 inside of part# 2a.

**Note:** Do not apply any solvent in the outer portion of the part# 2a.

## → Step 2: Fabrication of Down Pipe Bushing Assembly

Connect part# 4a to part# 2b and apply solvent

**Note:** Do not apply any solvent in the outer portion of the PVC bushing



## → Step 3: Fabrication of Inlet Pipe Assembly

Remove the original faucet of the bucket and extract the rubber washers found in the faucet.

Replaced the faucet with angle stop valve.



## → Step 4: Connect all the components of the Rain Water Diverter

Punch a hole in the part# 1

Connect the discharge bushing assembly (Step 1) and down pipe bushing assembly (Step 2). Place Teflon to the connection to avoid leakages.



Screw to tighten the connection

**Note:** Do not put any solvent in this connection to have easy access on maintenance in case the system will be clog.

Install the part# 6a with part # 7a to part # 4b. Tighten the part# 7a.



Install part # 6b with part # 7b to part # 4a. Tighten part # 7b.

**Note:** Use rubber tubing of motorcycle in cases where there are no PE Pipes available



## ➔ Step 5: Fabricated Rain Diverter System

New rain water diverter ready to replace broken or damaged system in the schools.



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Attach the fabricated rain diverter to the existing PVC Drum reservoir. Align the position of the rain diverter when connecting it to the gutter down pipe and PVC drum inlet to maximize the flow of water into the reservoir.



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